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TORONTO, CANADA, JANUARY, 1911.

For Subscription Rates,
See page 49.

High Speed Steel.

By J. Duguid, Master Mechanic,
G.T.R. Montreal.

I have given this paper the above name so that I would have a big field to talk about and that I could not be accused of wandering away from the title. I am not going into the subject of high speed steel technically, but will give you my observations in using it, and also what I have read about it. High speed steel got its name no doubt from the fact that when it was first introduced, the only way to get the increased efficiency of it was to run the machines at a high speed, as the old style machines were not built to carry heavy cuts, the driving [illegible] belts and cones being [illegible] narrow to transmit the necessary power, and it was found if you increased these, as was done in some cases, as shown on fig. 1, the other parts of the machine gave out under the strain. These parts then being strengthened up, it was then found that the whole machine frame was not rigid enough and caused the tools to break on account of the vibration, and in the face of these facts all that could be done was to carry about the same size cuts with the high speed steel as with the old carbon steel, but to speed up the machines. It was at this point that the manufacturers of machine tools saw the necessity of building more powerful and rigid machines, and to them should be given as much credit for the increased output of machines as the high speed steel manufacturers. Although the great majority of machine shops are using high speed steel at present, I venture to say that very few of them are getting over 75% of the total efficiency of the steel, principally for the following reasons:

1. The great number of old out-of-date machines and heavy work being done in them. They are therefore not carrying a heavy enough cut, neither can they be run to proper speed, and about 50% of the steel efficiency is all that is being got under these conditions. There are conditions, however, where old machines can be used to good advantage with the high speed steel, and that is on repair work, such as skimming up old piston rods, valve rods, &c.

2. The different shape of tools on uniform work. Workmen will grind machine tools in about the same way as ladies choose their hats, which is every shape, and some of these the most ridiculous. I believe if there was a uniform system in every shop for the grinding of tools, (such as some shops have adopted), that it would greatly increase the life of the steel, also the efficiency.

3. The different speeds and size of cuts on uniform work and material. This is one of the most serious defects in the use of high speed steel or in fact any steel.

4. The use of belting not of proper tightness and belts that are worn out. I think you will agree with me that a great many manufacturers will use a belt until it all falls to pieces, although it may be decreasing the output of their high speed steel by 50%. All belting that is driving machine tools should be adjusted with spring clamps, as shown in fig. 2 so as to ensure proper tension and driving power.

A. Wilcox,
Superintendent District 1, Canadian Northern Railway.

5. The overhang of tools in tool rest, causing excessive chattering and consequent breaking of tools.

6. The use of dull tools, also the want of reforging. The use of dull tools causes excessive heating destroying them, and also a great loss on account of the extra power required to drive the machine.

7. The want of proper supply of cooling water used, thereby allowing the tool to become overheated and fail.

8. The want of variable speed enough on the machines to suit the different diameters of work.

9. The use of too light tools on heavy work.

These are some of the reasons why we are not getting nearly the full efficiency from high speed steel, which must be quite apparent to those of us connected with machine shops. They are all defects that can be remedied with proper supervision.

I will now try to describe to you the action of a tool and its wear in cutting metal. A great many of us imagine that it is the sharp edge of the tool, the same as a razor, that is doing the work, Such however, is not the case. Fig. 3 is an enlarged view of the action of a tool in cutting a chip from a forging at its proper speed, and it is therefore plain that in all roughing cuts the chip is torn away from the forging rather than removed by the action which we term cutting. The familiar action of cutting, as exemplified by an axe or knife removing a chip from a piece of wood, for instance, consists in forcing a sharp wedge (i.e., one whose flanks form an acute angle) into the substance to be cut. Both flanks of the wedge press constantly upon the wood, one flank bearing against the main body of the piece, while the other forces or wedges the chip or shaving away. While a metal cutting tool [illegible] like a wedge, its cutting edge ing formed by the intersection the "lip surface," and "clearance surface," or flank of the tool, action is far different from that the wedge. Only one surface of metal cutting tool, the lip surface ever presses against the metal. The clearance surface, as its name implies, is never allowed to touch the forging. Thus "cutting" with a metal cutting tool consists in pressing, tearing or shearing the metal away with the lip surface of the "wedge" only under pressure, while in the case of the axe and other kinds of cutting, both wedge surfaces are constantly under pressure.

The enlarged view of the chip, tool and forging, shown in fig. 5, represents with fair accuracy the relative proportions which the shaving cut from a forging of mild steel finally assumes with relation to the original thickness of the layer of meta which the tool is about to remove. Son may think this theory is all wrong, b cause they have noted that the cutt they have taken off a forging was of same size as the depth of cut and feed used, but that only shows that were not using a heavy enough feed not running at a proper speed.

In experiments made to show pressure of the chip on the tool c a chip of uniform size it was the pressure varied with w ularity and that the sm was about two-thirds pressure. This is the old light machines wi

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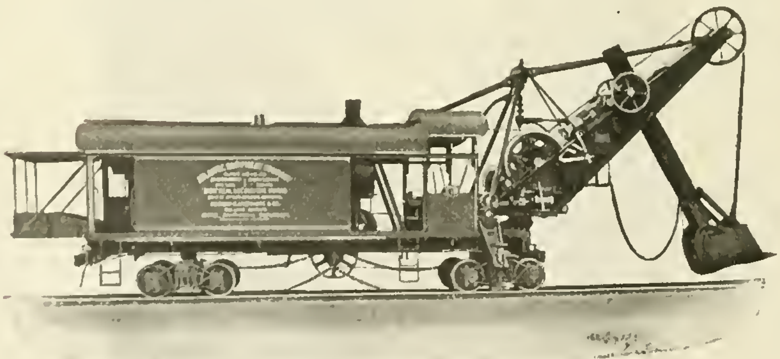

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heavy cuts of high speed steel. The cause of these variations in pressure is the breaking of the chip in sections. It would appear that the chip is torn off from the forging at a point above the cutting edge of the tool and this tearing off action leaves the forging in all cases more or less jagged or irregular at the exact spot where the chip is pulled away from the forging as shown to the left of A. An instant later the line of the cutting edge, or more correctly speaking, the portion of the lip surface immediately adjoining the cutting edge, comes in contact with these slight irregularities left on the forging owing to the tearing action, and shears these lumps off, so as to leave the receding flank of the forging comparatively smooth. The cutting edge of the tool is continually in action, scraping or shearing off or rubbing away these small irregularities left on the forging, yet that portion of the lip surface close to the cutting edge constantly receives much less pressure from the chip than the same surface receives at a slight distance away from the cutting edge. This allows the tool to run at higher cutting speeds than would be possible if the cutting edge received the same pressure as does the lip surface close to it.

There are many things which indicate this tearing action of the tool. For example, it is an every-day occurrence to see cutting tools which have been running close to their maximum speeds and which have been under cut for a considerable length of time, guttered out at a little distance back of the cutting edge, as shown in fig. 5. The wear in this spot indicates that the pressure of the chip has been most severe at a little distance back from the edge. Still another manner in which in many cases the tearing action of the tool is indicated is illustrated in fig. 6, in which a small mass of metal is shown to be stuck fast to the lip surface of the tool after it has completed its work and been removed from the lathe. When broken off, however, and carefully examined, this mass will be found to consist of a great number of small particles which have been cut off or scraped off the forging, as above described, by the cutting edge of the tool. They are then pressed down into a dense little pile of compact particles of steel, or dust stuck together and to the lip surface of the tool, almost as if they had been welded. In the case of the modern high speed tools, when this little mass of dust or particles is removed from the upper surface of the tool the cutting edge will in most cases be found to be about as sharp as ever, and the lip surface adjacent to it, when closely examined, will show in many cases the scratches left by the emery wheel from the original grinding of the tool.

With roughing tools made of old-fashioned tempered steel, and which have been speeded close to their standard speeds, in most cases after removing this dust pile from the lip surface, the cutting edge of the tool will be found to be distinctly rounded over, and in cases where the tool has been cutting a very thick shaving, the edge will be found to be very greatly rounded over, as shown in the enlarged view of the nose of a tool in fig. 7. With carbon steel tempered tools at standard speeds the cutting edge begins to be injured almost as soon as the tool starts to work, and is entirely rounded over and worn away before the tool finally gives out, but the tool works well in spite of its cutting edge being damaged. With high speed tools at standard speeds, the cutting edge remains in almost perfect condition until just before the tool gives out, when even a very slight damage at one spot on the cutting edge will usually cause the tool to be ruined in a few revolutions.

Carbon tempered tools and also, to a considerable extent, the old fashioned self-hardening tools (such as Mushet), when run at their standard speeds, pass through the following characteristic phases as they progress toward the point at which they are finally ruined: Rounding of the cutting edge, mounting of the steel upon the lip, and the rubbing away beneath the cutting edge. Long before the tool is ruined the fine particles of steel or dust scraped off by the cutting edge begin to weld or stick to the lip of the tool and mount upon it sometimes from 1-16 to ¼ inch in height as shown in fig. 6, as stated above, in the case of modern high speed tools, the damage caused to the tool through the action of cutting is confined almost entirely to the lip surface of the tool.

Doubtless also, the metal right at the cutting edge of the tool remains harder than it is directly under the centre of pressure of the chip, because the cutting edge is next to and constantly rubs against the cold body of the forging, and is materially cooled by this contact.

Whether the lip surface be ground away at high speeds or at slower speeds, the nose of the tool is generally ruined in a very short time after the cutting edge has been so damaged that it fails to scrape off smoothly even at one small spot the rough projections which have been left on the body of the forging by tearing away the chip. The moment the body of the forging begins to rub against the clearance flank of one of

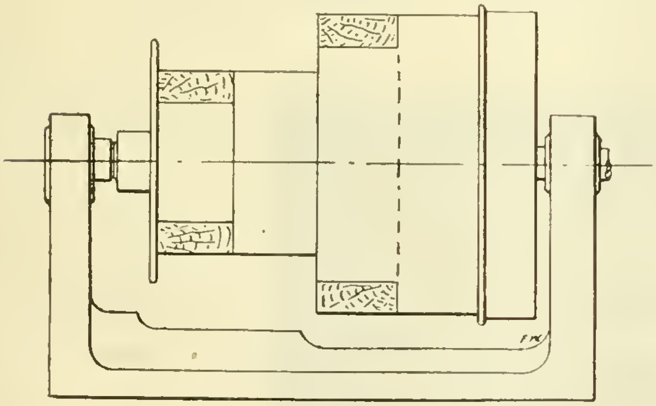

Fig. 1.

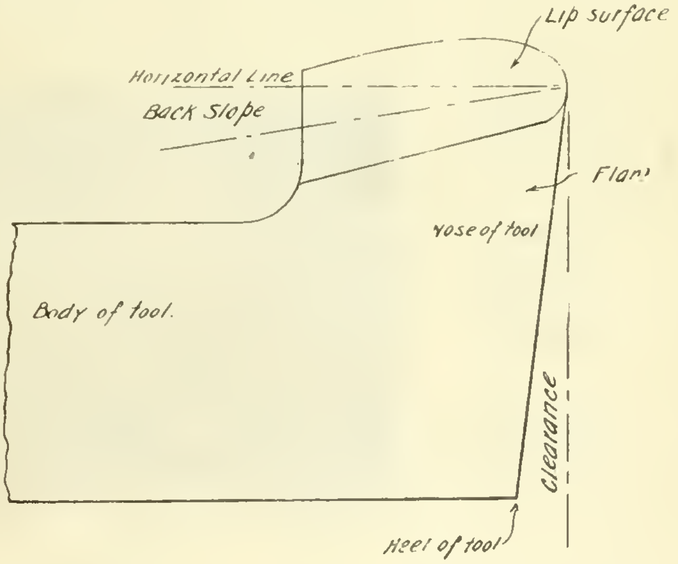

Fig. 10.

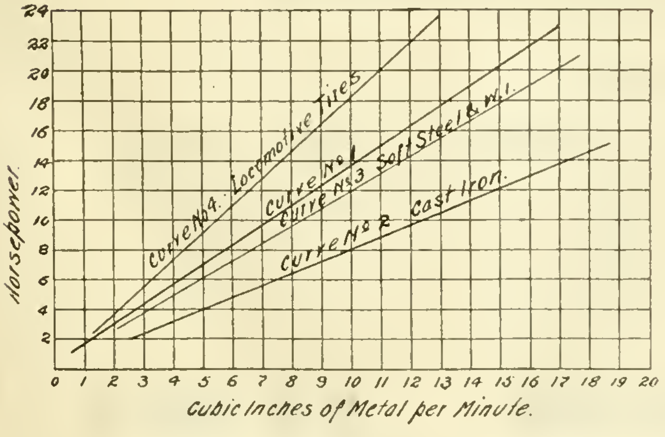

CHART OF HORSEPOWER REQUIRED TO REMOVE METAL

FIG. 14.

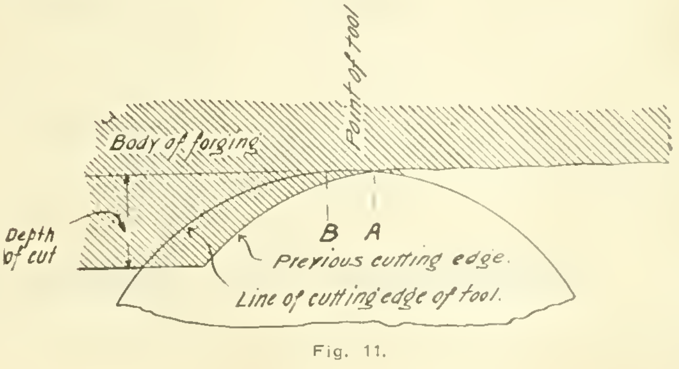

Fig. 11.

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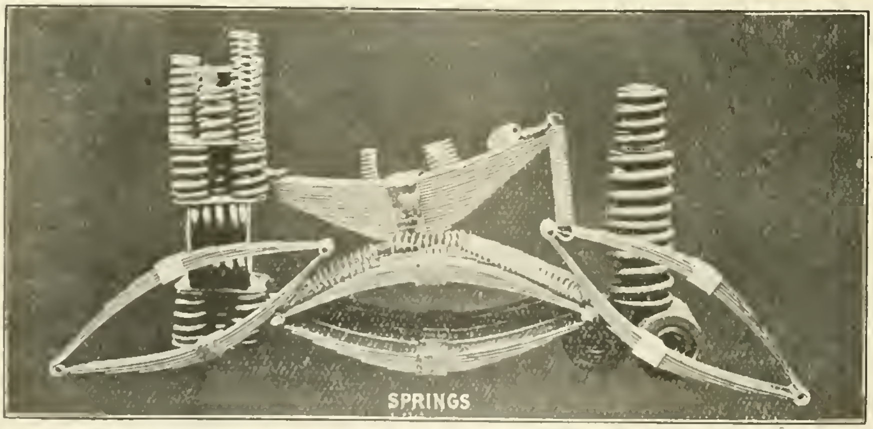

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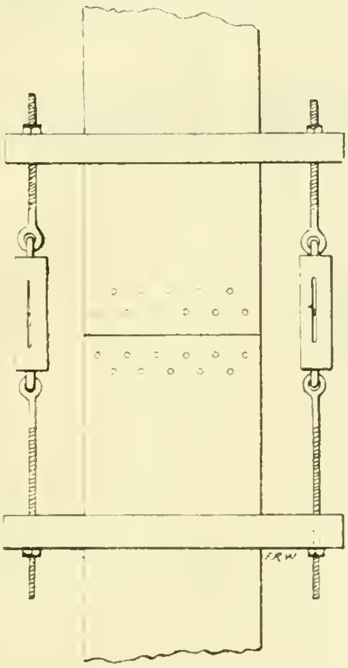

Fig. 2.

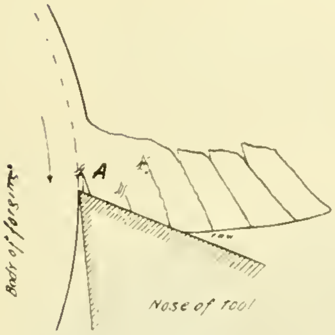

Fig. 3.

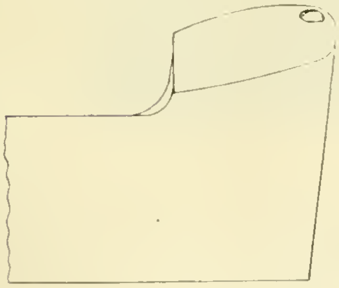

Fig. 5.

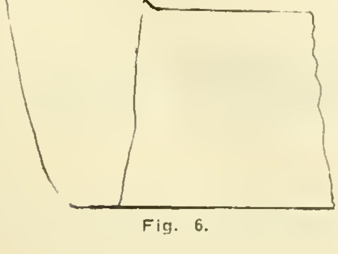

Fig. 6.

these high-speed tools at or just below the cutting edge even at one small place, the friction at this point generates so high a heat as to soften the tool very rapidly. After a comparatively few revolutions, the cutting edge and the flank of the tool beneath it will be completely rubbed and melted away, as shown in fig. 8. A tool which was still in fair condition when removed from the lathe although showing some slight signs of ruining is shown in fig. 9. The above characteristic of holding their cutting edges in practically perfect condition while running at economical speeds up to the ruining point is a valuable property of the high speed tools, since it insures a good finish, and the maintenance throughout the cut of the proper size of the work without the constant watchfulness required on the part of the operator in the case of old slow-speed tools with their rounded and otherwise injured cutting edges, which when run at economical speeds were likely at any minute to damage the finish of the work. But when one of these high speed tools is nearing its ruining point a very trifling nick or break in the line of the cutting edge will be at once noticed by its making a very small but continuous scratch, projecting ridge or bright streak on the forging, that is, upon that part of the forging from which the spiral line of the chip has just been removed, thus warning the operator of the impending breakdown of the tool.

Regarding the proper speed to run high speed steel. There can be no uniform standard for the speed, for the reason that even on the same class of material there is a wide variation in the speed that it can be economically worked and then again a forging of large dimensions can be cut at a greater number of feet per minute than a small one, on account of its capacity for carrying off the heat generated, and the tool is not cutting on the same point on the circumference so often on account of the larger diameter. A cutting speed which will cause a given tool to be ruined at the end of 80 minutes is about 20% slower than the cutting speed of the same tool if it were to last 20 minutes. On the whole, it is not economical to run roughing tools at a cutting speed so slow as to cause them to last for more than one and a half hours without being re-ground. This of course refers to working on ordinary machinery steel.

High speed can be used on forgings up to 110 ft. per minute, but only on short cuts and lighter feeds on such work as bolts, pins, etc., but when working on heavy rigid forgings that require heavy reduction to bring them to the desired size, it is more economical to increase the feed to the limit of the machine capacity and reduce the speed to suit, as it will be found that by reducing the speed 25%, the feed can be increased 50%.

Heavy cuts and heavy feeds have become specially necessary because superintendents of shops have found it more economical to reduce forging to size by the heavy modern tools and high speed steel than under the hammers in the forge shop, and are therefore having much more material to remove than they formerly did.

The following are some tests I have seen from time to time with high speed steel: 1. Locomotive driving axle, speed 75 ft. per minute, reduction in diameter 1-5, 16 in., feed 3-16. 2. Old locomotive steel tires, two tools, depth of cut ½ in., feed 5-16 in., speed 28 ft. per minute, metal removed, 155 lbs. in 12 minutes. 3. Six pairs of old and 2 pairs of new 63 in. locomotive driving tires turned in 5 hours, 50 minutes, average time, 43.75 minutes each; average cutting time, 35.87 minutes each pair; speed, from 14 to 21 ft. per minute; 5-16 feed.

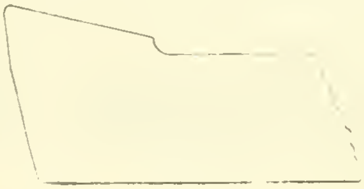

Fig. 7.

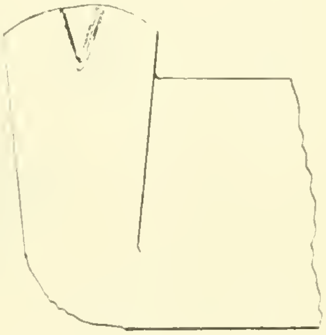

Fig. 8.

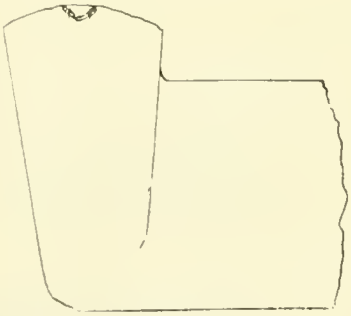

Fig. 9

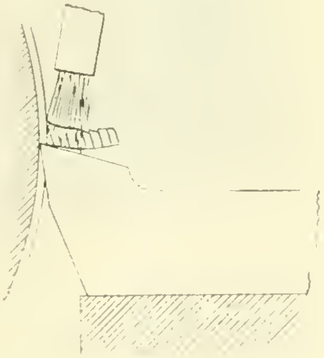

Fig. 12.

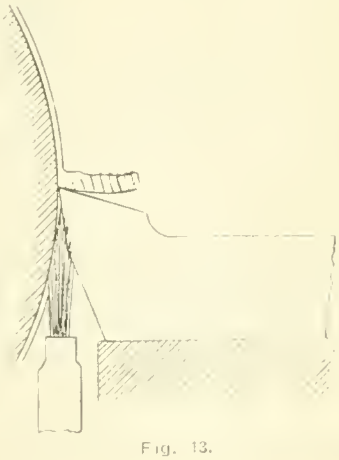

Fig. 13.

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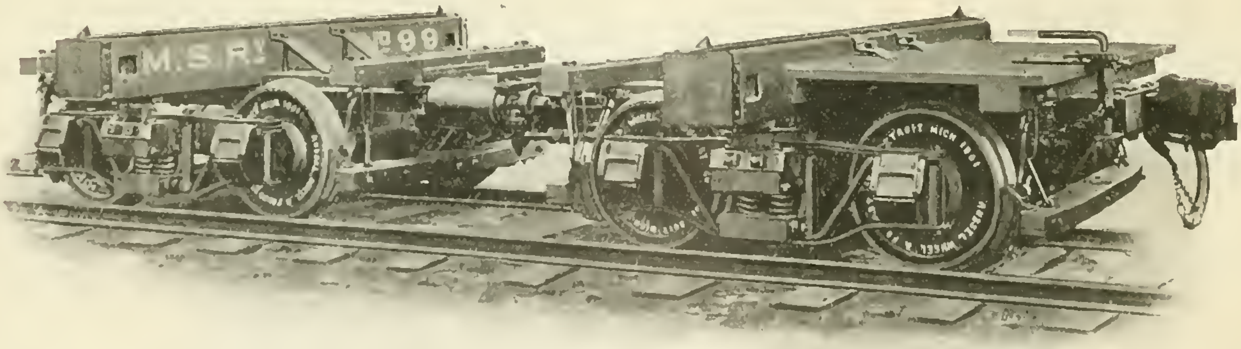

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depth of cut, 3-8 in. 4. Forged steel shaft, 16 in. diameter, 13 ft. long, feed 3-8, depth of cut, 1-1-16 in.; speed, 50 ft. per minute. The tool took this cut the entire length with one slight grinding.

Regarding the shape of turning tools, in this paper I have only referred to standard roughing tools. The shape of tools is of just as much importance as the material they are made of, and must have the following requirements: 1. To have the work true and sufficiently smooth. 2. To remove the metal in the shortest possible time. 3. To do the largest amount of work with the lowest cost of grinding and forging. 4. To be adapted to the largest variety of work. 5. To remove the metal with the lowest horse power. 6. It must be shaped to have the point as strong as possible and cutting edge supported.

One difficulty in practice is to have always a supply of sharp tools for the machinist and it is better to have a few shapes and plenty of tools, than to have many shapes and not enough of any one kind. These should be ground to templets, if they must be done by hand; but an automatic tool grinder will pay even in a moderate-sized shop.

Fig. 10 shows a good standard roughing tool. Note that the lip surface is raised above the body of the tool. This is to increase the life of the tool before being reforged and also to reduce the grinding to a minimum.

The curved-edge cutting tool is best for roughing in all cases for the reason that it removes a shaving which varies in its thickness at all points, and that the part of the cutting edge which finishes the cut is removing so little metal that it remains sharp even though most of the cutting edge has been worn or broken away. The effect of this is shown in fig. 11. This indicates that the accuracy and finish of the work depends on that part of the edge from A to point B, remaining sharp and uninjured. The curved face as shown in fig. 11, also puts the heaviest part of the cutting back from the point and where the tool is heavy and can carry off the generated heat.

Standard tools should have a clearance angle of 6 degrees for all classes of material—a back slope of 8 degrees for all material, and a side slope of 14 degrees for cast iron and hard steel, and 22 degrees for medium and soft steel. The lip angle is determined by making it just blunt enough to stand the cut without crumbling or spalling. A sharp side slope is better than a sharp back slope, because the tool can be ground more often without weakening it, the chips run off better, the strain is more on the base of the tool and it is easier to feed.

It may seem strange that the lip angle for cutting cast iron is not as keen as for the softer steels, but the highest cutting speeds with equal depth of cut and feed can be obtained by using the angles given. The thickness of the shaving has the most important effect of the cutting speed, much more so than the depth of the feed. This is the reason for the advantage of the large curve on the cutting edge, as this decreases the thickness of the shaving as can be seen in fig. 11.

The clearance angle of any tool is the most important. If it is more than 6 degrees it will not properly support the cutting edge which will break and cause a fracture of the tool.

I believe more tools are ruined by careless grinding than by any other means and it is a peculiar fact that while high speed steel can be run at a high temperature in work without injury, it is easily destroyed on an emery wheel, and if the tool is pressed firmly against the wheel and allowed to heat up, small cracks will start in the steel. In a great many shops high speed tools are ground on a dry wheel. I think this is a mistake. Again, when a wet wheel is used there is not a sufficient amount of water used. Experience has shown that not less than four gallons of water per minute should be used. Automatic grinders should be used for heavy grinding on all high speed tools, as the pressure on the wheel is uniform —the shape of the tools is kept uniform, and much better results will be obtained in turning out work.

Water used on high-speed steel increases its capacity in every case and the gain is practically the same for all qualities of steel, and for removing thin or thick chips. With high speed tools a gain is made by using water on cast iron, contrary to most beliefs. A heavy stream of water should be thrown directly on the chip, as shown in fig. 12 and not up under the chip as in fig. 13, even though this might seem the correct way. Experience has shown that throwing it on the chip takes away the heat fastest. A guide to the amount of water to be used is that three gallons a minute is right for tools 2 by 2½ inches, and less for smaller tools. The gain in efficiency by the use of water is given as 40% with modern high speed tools, 30% with old style, self-hardening tools, 20% with carbon tempered tools, 16% in cutting cast iron.

A Veteran Transportation Man's Opinion.

Barlow Cumberland, Vice President Niagara Navigation Co., Ltd., writes from Port Hope, Ont., under date of Dec. 8, as follows:

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In some shops various cutting compounds or lubricants, (as they are called), are used on lathes and planers but there is no extra efficiency using this material on an engine lathe, or planer except that it does not rust the machine. However, these compounds give first class results on drills, screw-cutting machines and turret lathes, but with these both a cooling and lubricating mixture is required, whereas on ordinary turning all that is required is cooling.

With the advent of high speed steel the power required to drive the machines to their maximum increased enormously, for example, a 12 in. lathe increased from 1 to 4 horse power; a 30 in. lathe increased from 5 to 20 horse power; a 72 in. lathe increased from 15 to 50 horse power, and in a test, a 72 in. lathe with a cut 1½ in. deep, ¼ in. feed and 30 ft. per minute, required 75 horse power.

Fig. 14 shows the horse power required to remove metal with roughing tools of the shape mentioned previously. It must be remembered that the shape not only increases the life of the tools and is easier on the machine, but there is also a marked difference in the power required.

For forging high speed steel an ordinary forge fire will serve; though, indeed, better results may be expected if better apparatus is used. The principal thing is to secure the required heat, and to keep air currents away from the tool in heating. For small tools of the simpler sort good results are sometimes obtained from an ordinary open fire. The result is, however, much more likely to be satisfactory if a sort of hood is built over the fire. This serves to prevent the radiation of heat and the circulation of air currents, and is a necessity in heating tools of any size. It also makes it easier to bring up the heat gradually, and to apply it uniformly on all sides of the tool, so that the heat penetrates uniformly. This is an important point. Unless the mass of steel to be wrought is uniformly hot throughout it will work unevenly in forging, with the result that internal strains are set up which may ruin the tool when it is put at work, if not before. Though the heating is to proceed gradually, in the sense that it must be regular, it may go on quite rapidly. In fact, it should be done as rapidly as may be without burning projecting edges or corners. Unless this is done the heat soaks up into the neck or shank, and when hardening takes place, this important part of the tool loses some of its toughness. However, the fire must not be too hot, for in that case the outside is likely to be burned before the interior is thoroughly heated. In any event there is a liklihood that the tool smith may be deceived into thinking the whole mass properly heated, when in fact, only the outside is hot enough for forging. If the interior has not reached a bright red heat or 1800 degrees F., it is not ready for hammering. Of course, it is impossible to know the condition of the interior, except through its behavior under the hammer after removal from the fire, and it is largely a matter of experience to determine the proper time during which a tool is to be heated. The extent to which the heating is to be carried for hardening may vary within narrow limits, just short of melting point. The steel will then be at a dazzling white, and just beginning to flux. Some brands reach this point somewhat short of the extreme white color. Where this is the case care must be taken that sharp edges and angles of the tool are not melted down. As in forging, it is necessary to see that the heating process proceeds uniformly and reaches through the entire mass of metal.

As most of the high speed steels harden by mere exposure to air, little apparatus is absolutely required in addition to the heating furnace, and some very good results have been obtained with none at all. The hardness of the steel depends considerably, however, on the rapidity of the cooling, therefore mere exposure to the air and slow cooling is not always satisfactory—for many purposes, indeed, it is very unsatisfactory. Most makers recommend the air blast for hardening, and as this furnishes a continuous supply of cool air in rapid motion, the result is generally good. Since part of the latent heat in the air is extracted in the process of compression, compressed air is better for the purpose than that from a blower. The convenience and simplicity of this agent, where available, recommends it.

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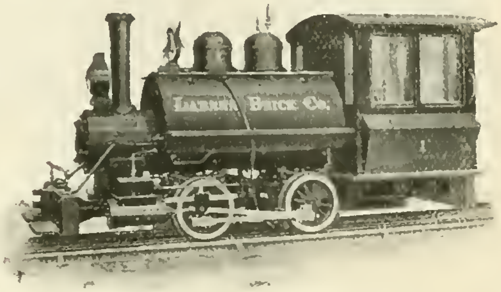

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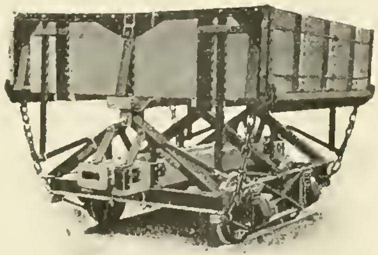

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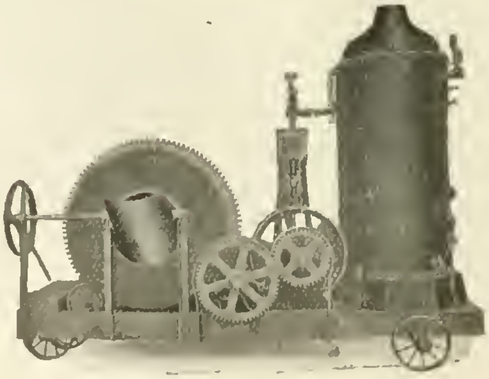

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troduced users were of the opinion that it was only fit for roughing tools. This was a fact at that time, as the edges of the tools would not keep sharp enough for the finer classes of tools. However, since that time the manufacturers of high speed tools have improved it so that at present it can be used, and is used, for milling cutters, reamers, cold saws, and in fact all machine shop tools, with good success, and a great increase of efficiency over carbon steel, and it is also used for the very finest of tools, even razors. High speed steel is also used extensively for twist drills, and good results can be obtained with these, providing they are used on heavy castings or forgings, but if used for light work it must be securely bolted to the drill table, otherwise too many drills will be broken, as high speed twist drills will not stand quick torsion strains. For all classes of rough work I have found that flat drills made from high speed steel give better results than twist drills, as the points can be forged thick and will not break, even with severe usage.

On account of the high price of high speed steel, care should be taken that short ends of tools are not scrapped or mixed up with other pieces of carbon steel, as these short ends can be used up for special cutters or drawn out for smaller sized tools than the original. The best method of marking is by planing or milling a small concave groove the whole length of the tool, then the steel can be distinguished, no matter how short a piece it is.

The foregoing paper was written for presentation before the Central Railway and Engineering Club.

◆

January Birthdays.

Many happy returns of the day to:—

W. U. Appleton, Assistant to Superintendent of Motive Power Intercolonial Ry., Moncton, N.B., born there Jan 29, 1878.

A. H. Bears, Master of Bridges and Buildings C.P.R., Saskatoon, Sask., born at Charlottetown, P.E.I., Jan. 6, 1857.

F. X. Belanger, General Freight and Passenger Agent Temiscouata Ry., Riviere du Loup, Que., born at Chlorydormes, Que., Jan. 20, 1876.

R. H. Bell, Commercial Agent Canadian Northern Ry., Pittsburg, Pa., born at Toronto, Jan. 13, 1865.

G. McL. Brown, European Manager C.P.R., London, Eng., born at Hamilton, Ont., Jan. 29, 1866.

W. H. Burr, Traffic Manager Dominion and Western Express Companies Toronto, born at Bloomington, Ill., Jan. 19, 1864.

C. A. Cotterell, Chief Train Dispatcher District 1, British Columbia Division C.P.R., Revelstoke, B.C., born at Enden, Eng., Jan. 18, 1877.

W. A. Cowan, Resident Engineer C.P.R., Farnham, Que., born at Galt, Ont., Jan. 22, 1877.

J. E. Dalrymple, Assistant Freight Traffic Manager G. T. Pacific Ry., Winnipeg, born at Montreal, Jan. 1, 1869.

Sir Sandford Fleming, K.C.M.G., Director C.P.R., born at Kirkcaldy, Scotland, Jan. 7, 1827.

Gordon Grant, Chief Engineer National Transcontinental Railway Commission, Ottawa, born at Dufftown, Banffshire, Scotland, Jan. 2, 1865.

H. Y. Harris, ex-General Manager Midland Ry. of Nova Scotia, Truro, N.S., now of Toronto, born at Devonport, Devonshire, Eng., Jan. 16, 1857.

G. F. Hichborn, formerly Agent Great Eastern Fast Freight Line, New York City, born at Boston, Mass., Jan. 13, 1875.

Carl Howe, Manager New York Central Fast Freight Lines Buffalo, N.Y., born at Berrien Springs, Mich., Jan. 11, 1870.

W. C. Hunter, ex-Manager New Brunswick Coal and Ry. Co., Sussex, N.B., born at St. John, N.B., Jan. 4, 1865.

W. J. Hunter, Division Freight Agent G.T. Pacific Ry., and Commercial Agent G.T.R., Winnipeg, born in Toronto, Jan. 10, 1864.

H. G. Kelley, Chief Engineer G.T.R., Montreal, born at Philadelphia, Pa. Jan. 12, 1858.

Jas. Kent, Manager C.P.R. Telegraphs, Montreal, born Jan. 15, 1854.

A. Lichtenheim, Galena Signal Oil Co., New York, born there Jan. 15, 1855.

A. J. McGee, Secretary-Treasurer, Temiskaming and Northern Ontario Ry. Commission, Toronto, born at Lachine, Que., Jan. 24, 1876.

G. Pepall, Assistant Foreign Freight Agent G.T.R., and Agent National Despatch—Great Eastern Line, Toronto, born at High Wycombe, Buckinghamshire, Eng., Jan. 15, 1849.

W. Phillips, General Eastern Agent Canadian Northern Ry., and General Freight and Passenger Agent, Canadian Northern Ontario Ry., Toronto, born at Toronto, Jan. 31, 1870.

W. Pratt, Superintendent Sleeping and Dining Cars C.N.R., Winnipeg, born at Sibbertoft, Northamptonshire, Eng., Jan. 18, 1870.

J. Pullen, Assistant Freight Traffic Manager G.T.R., Montreal, born at Shepton Mallet, Somersetshire, Eng., Jan. 23, 1863.

L. J. Rouleau, Travelling Freight Agent G.T.R., and Agent National Despatch—Great Eastern Line, Montreal, born there Jan. 6, 1879.

S. L. Shannon, Comptroller and Treasurer Intercolonial Ry., Moncton, N.B., born at Halifax, N.S., Jan. 18, 1865.

J. R. Steele, Freight Claims Auditor C.P.R., Montreal, born at St. John's Newfoundland, Jan. 14, 1856.

J. G. Sullivan, Assistant Chief Engineer C.P.R., Montreal, born at Bushnell's Basin, N.Y., Jan. 11, 1863.

J. A. Villeneuve, Comptroller and Treasurer Richelieu and Ontario Navigation Co., Montreal, born there Jan. 4, 1864.

O. C. Walker, Inspector Refrigerator Service Western Lines C.P.R., Winnipeg, born at Newport, Mon., Eng., Jan. 31, 1877.

F. J. Watson, Division Freight Agent G.T.R., Montreal, born at Toronto, Jan. 12, 1866.

G. H. Webster, C.E., Vancouver, B.C., born at Creemore, Ont., Jan. 31, 1858.

T. H. White, Chief Engineer in charge of C.N.R. surveys in British Columbia, Vancouver, B.C., born at St. Thomas, Ont., Jan. 27, 1848.

◆

Legislation Affecting Railways.

A bill which was given a second reading in the Senate, Dec. 1, proposes to change the entire procedure for the incorporation of companies having for their object the building of railways. The first section provides that not less than seven persons of full age may form themselves into an association for the purpose of building a railway, and upon complying with the provisions set out in subsequent sections, may obtain letters patent creating them and their successors a corporation with all the powers and privileges, and subject to all the obligations and restrictions contained in the Railway Act, Revised Statutes, chap. 37, and in any other general act relating to railways. The agreement of association shall contain the name of the corporation, the terminal points, route and gauge of the proposed line, the capital, etc., of the company. Notice of incorporation is to be given by advertisement and to clerks of counties and municipalities through which the line is proposed to be built. After these notices have been given and proved, the company may make surveys, and on the completion of the making of the plans, but within 12 months of the publication of the notice of incorporation, the company may apply to the Board of Railway Commissioners for a certificate that the public interest requires that a railway should be constructed as proposed. If the Commissioners do not see fit to issue this certificate, the company may make a further application within a further period of a year. The Commissioners are empowered to determine various matters which are not specifically mentioned in the Railway Act, but set out in sec. 9 of the bill. Sec. 13 provides that no corporation created under it "shall amalgamate with, or enter into any agreement for making a common fund or pooling earnings or receipts with, or leasing any part of its line to, or any other railway owning a parallel or competing line. Every such amalgamation or arrangement shall be null and void," the only exceptions being agreements as to interchange of traffic, running rights and other purposes authorized by sec. 364 of the Railway Act. It is proposed that the bill shall be made to apply to existing companies only in so far as to extensions which have not been authorized by special acts at the time of the passing of this measure.

The object of the bill, introduced in the Commons by E. A. Lancaster and read a first time Nov. 21, is to require all Dominion railways, in case of any person being killed on a train or on the property of the company, to cause an inquest to be held by the nearest coroner forthwith

It is proposed by a bill introduced in the Commons by W. M. Martin and read a first time Nov. 23, to amend sec. 259 of the Railway Act, chap. 37, Revised Statutes of Canada, by adding the words "and all workmen, day laborers, or other persons employed by the company in the operation of its railway" after the words "such construction," in the fourth line; to add a clause providing that wages shall not be withheld; and a section providing that these provisions shall apply to all arrears due at the time of the coming in force of the act.

There was read in the Commons for the first time, Dec. 1, a bill, introduced by A. Meighen, to amend the Railway Act, sub-sec. 3, sec. 254, and subsec. 4, sec. 294. Under the provisions of this section the railway company is made prima facie liable for loss caused by animals getting on the railway right of way, except in case the company is able to prove that the animal got at large through the negligence or wilful act of the owner. This exception was added last session, and this bill proposes to alter the nature of the proof required by compelling the company to prove that the animal got on to the right of way without negligence on its part, and without violation of the provisions of the law. It also provides for an amendment of subsec. 2, by compelling the railway companies to submit the nature, dimensions and construction of their cattle guards to the Board of Railway Commissioners for approval. The effect of the amendment Mr. Meighen explained, would be that if the companies comply with the specific dimensions prescribed by the Board, they will be absolved, and if they fail to comply they will not be able to throw back the liability on some one who was more remotely negligent.

A bill, introduced by F. F. Pardee, was read in the Commons a first time Dec. 5, for the purpose of "providing for the safety of employes and travellers on railways" by providing for the inspection of boilers for locomotives when completed, by an inspector general working under the supervision of the Board of Railway Commissioners.

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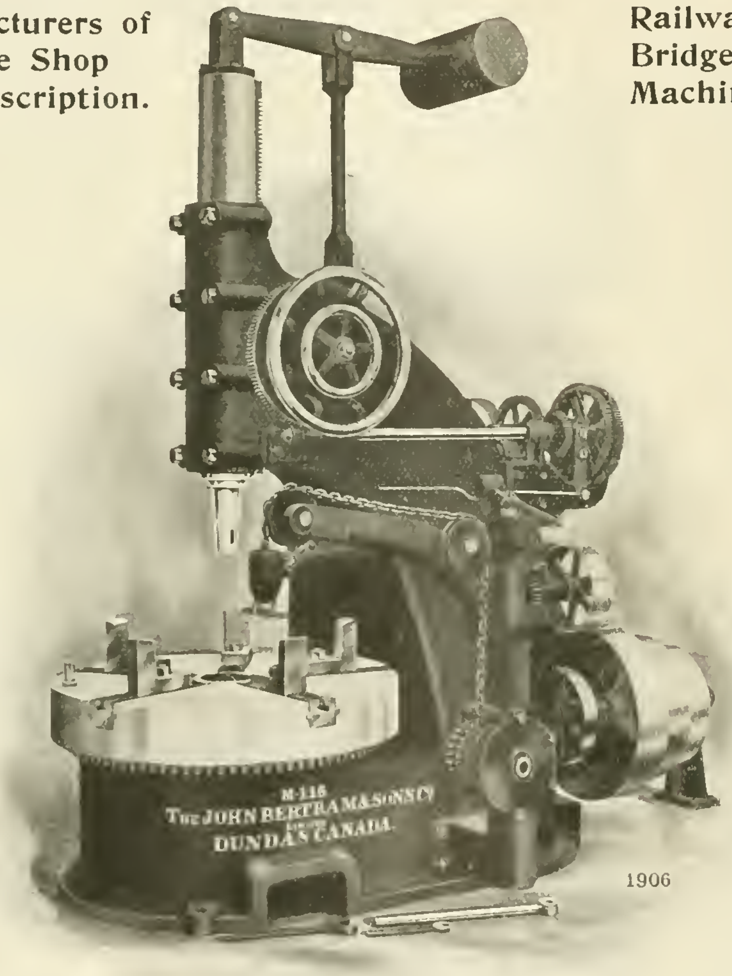
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Driving Spiral Tunnels on the C. P. R.

One of the most interesting of the many grade reduction works that have been undertaken by railways on this continent is that of the C.P.R. between Field and Hector, B.C., in the valley of the Kicking Horse River. The original distance was four miles, with a grade of 4.5% (compensated) for about three miles, and 3.5 to 4% for the remainder of the distance. For safety, three spring switches or catch sidings were introduced, which were normally closed to divert a train on to the spur and opened only when the engineman of a descending train signalled to the switchman that his train was under control. Owing to the increase in traffic and in train loads it became very desirable to eliminate these extreme grades, but it was a difficult matter to find room for the necessary development of length along the steep sides of this valley. The location finally adopted forms three lines in the valley, connected by loops, and the only way in which these loops could be made was by means of tunnels in the mountain side. The grade is reduced to 2.2% (compensated) and the length is increased to 8.2 miles. The compensation for curvature is 0.04% per degree, but this is increased to 0.06% in the tunnels on account of the liability of damp rails reducing the adhesion. The general character of this work was described in The Railway and Marine World in the issues of Sept. 1907, and Sept. and Oct. 1909. It was shown that while on the old line it required four 154-ton consolidation (2-8-0) engines to haul a train load of 710 tons up the grade, it was estimated that one of these engines would handle 980 tons on the new line.

Fig 1 shows the old and new locations, together with the positions of the tunnels, etc. The contract for this stretch of grade reduction work was awarded to Macdonald, Gzowski & Co. of Vancouver, B.C. Their work included the grading of 8.25 miles of line, two spiral tunnels, one short straight tunnel (710 ft.) and four bridges over the Kicking Horse River. The grading was the average heavy rock work. Fig. 3 shows one of the cuts in solid rock, the material being handled out by stone boats on a log track.

The most interesting work was the driving of the spiral tunnels. These are on loop curves of 10 degs. (or 573 ft. radius), with a grade (as reduced by compensation) of 1.6%. Tunnel 1 is 3,200 ft. long, and turns an angle of about 234 degs.; the difference in elevation of its portals is about 48 ft. Tunnel 2 is 2,890 ft. long, turning an angle of about 232 degs., and having a difference in elevation of about 45 ft. at the two portals. Figs. 2 and 5 show both portals of tunnels 1 and 2. Fig 4 is a cross section of the tunnels.

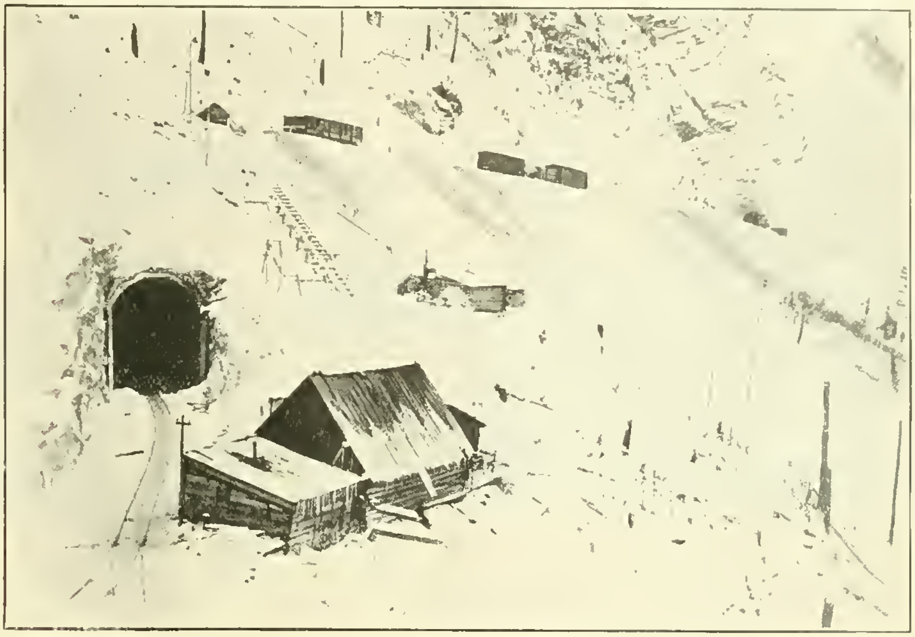


Fig. 2. Upper and lower portals, spiral tunnel No. 1.

For the following information as to the details of the construction work on the two spiral tunnels we are indebted to C. S. Gzowski, of the contracting firm. There was a camp and plant for each tunnel, and the equipment for each plant was practically the same. Table 1 shows the principal equipment of the plant for both tunnels. The location of the plant for camp 1 was put on the old line about 250 ft. in elevation below the portal of tunnel 1, and about 800 ft. distant from it. The plant was located at this point as there was a small bench on the mountain side which enabled the machinery for the compressor, etc., to be handled conveniently from the old railway line. Another reason was that water for operating the plant was obtainable there by digging wells and catching the seepage.

The plant at camp 2 was located on the Kicking Horse River about ¼ mile beyond tunnel 2 and on about the same level as that tunnel, or 150 ft. below the old railway line. The plant for this camp was unloaded off the old line and let down a skidway to its location.

The first operation that of excavating both portals of each tunnel was conducted by hand labor while the machinery at each camp was being installed. By the original plan of operation it was intended to use compressed air drills and do the mucking by hand from a jumbo car. After a short trial of this method it was decided to use power shovels (operated by compressed air) at each working end of both tunnels. This necessitated doubling the capacity of the air compressors as well as the boiler capacity.

Tunnel Driving.

The driving of the tunnels was through crystallized limestone very much distorted and in places (where badly crushed) timbering had to be used. About 25% of the length of each tunnel was permanently timbered and enlarged to a sufficient size to allow of a concrete lining being put inside at some future time. In fact, in the untimbered portion, after the character of the ground had been well determined, it was decided to enlarge this also, to permit of a future concrete lining.

The method of driving the rock section which did not require timbering, was to drive a full top heading, keeping it about 10 or 12 ft. ahead of the bench (which was kept as vertical as possible) and to shoot the heading and bench at the same time. After a shot was completed, the drillers mucked back from the heading sufficient to set up their drill columns, and then set up and started the drilling. In the meantime, the shovel (run by air) was moved up and started mucking out the last shot. This shovel gang would get cleaned up about the time the drillers had the heading

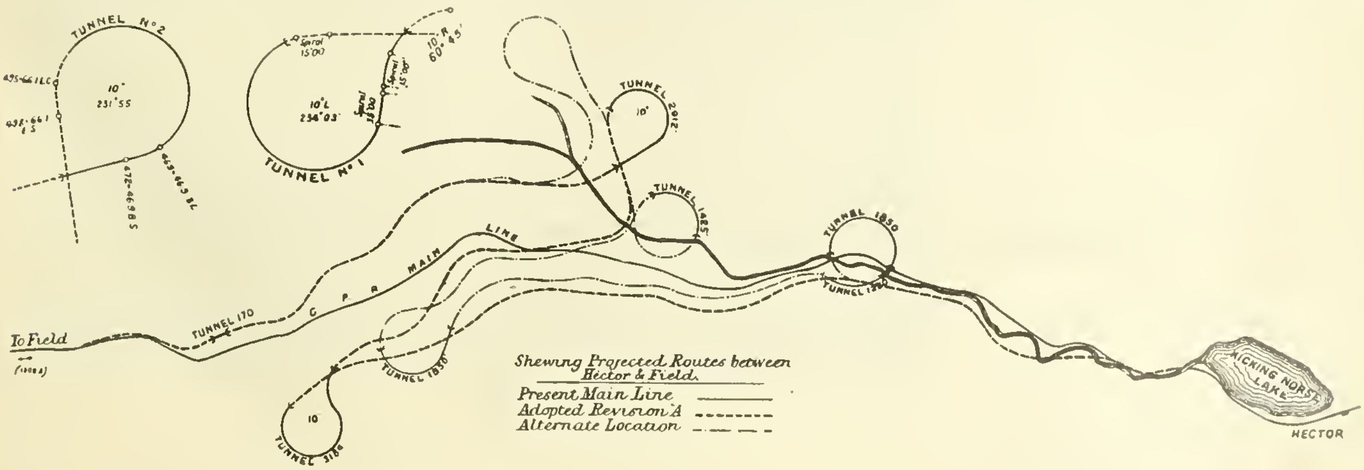
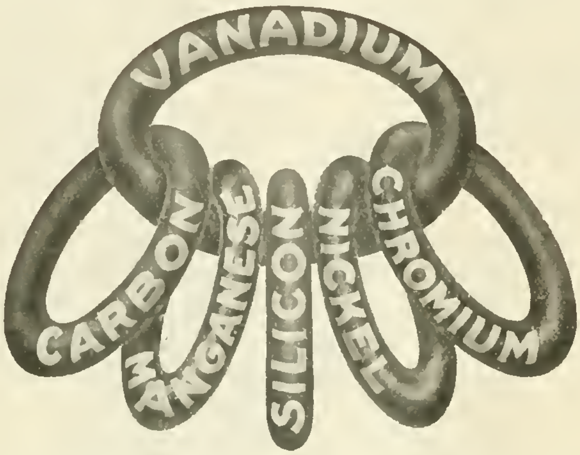


Fig. 1. C.P.R. grade reduction work between Field and Hector, B.C., showing the two spiral tunnels.



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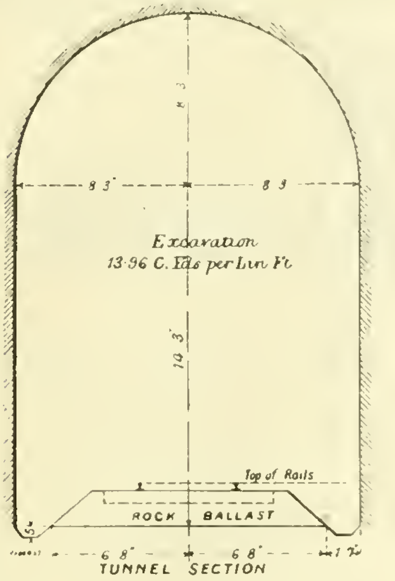

Fig. 4. Cross section of spiral tunnels.

drilled and the down holes of the bench finished. The shovel was then moved back about 150 ft. The drillers then drilled lifter holes in the bench.

When all the drilling was finished, the drills, hose lines and fittings were all moved back. While this was being done, the cut holes in the heading were being loaded for springing. These cut holes were sprung and then fired. Then the side rounds and lifters of the heading, as well as all the bench holes, were shot at one time. This method of keeping the bench close up to the heading allowed the greater part of the muck of each shot of the heading to be thrown back with the bench muck, which was removed directly by shovel. When the timbering had to carried as the heading was driven, the bench was left about 50 ft. back. The heading was shot and then mucked by hand, the material being carried to the bench in cars, and then dumped. The permanent timber plates were put in and each segment trimmed off, and then lagged and wedged up. The bench was always kept as vertical as possible. Before shooting the bench, the wall plate was well supported by blocking up, and the last full-length post protected by old timbers. Just enough bench was shot in each round to allow another full post to be put in, and then this muck together with the muck coming from the heading was cleaned up with the power shovel.

DRILLING.—The arrangement of the drill holes was varied somewhat from time to time as the character of the ground changed. The stratification of the rock as encountered in the different parts of the tunnels varied from nearly horizontal (sometimes dipping up, down or to one side) to practically vertical and parallel to the direction of the tunnel. The formation of the ground at tunnel 1 was somewhat uniform, in regard to its stratification, lying with a plane dipping about 20 degs. to the northeast, but as the tunnel made the best part of a circle this was encountered at all angles in the face. The stratification of the ground at tunnel 2 had not the same general uniformity as that on the other side of the valley. The hardness of the rock, the distortion and other conditions changed every few feet.

The general plan of the drill holes in the heading was to put in two rows of cut holes about 12 ft. deep and sloped so as to nearly meet. The side holes and lifters were about 10 ft. deep. The distance of the side holes from the tunnel line was judged by the character of the ground. These were varied as much as 2 ft. in line. The bench had a row of down holes on the top about 8 ft. back from the edge and about 10 ft. deep; also a row of lifter holes in from the bottom of the face, 12 ft. deep, so pointed as to go 1 ft. below grade. The aim was to break 8 ft. of heading and the same amount of bench each round. It was found necessary to change the number of holes very largely as the rock changed. In tight ground the round of the heading would not break back within sometimes 2 ft. or more of the bottom of the holes, while in other ground it might go practically to the bottom.

The rock was of such character that the drilling throughout almost the entire length of both tunnels was most difficult. The formation being crystallized, it was brittle; and having been distorted by upheaval it was in a semi-fractured state. This condition made small wedge-shaped pieces break off in the holes behind the bits of the drills and jam them. Various shaped drill bits were tried, but none of them overcame the difficulty. The old trick of throwing small bits of iron into the hole was the most effective. The progress of the work was very considerably retarded by the bad conditions for drilling, and although the number of drills was increased to as many as space would permit of working, the desired progress was never attained.

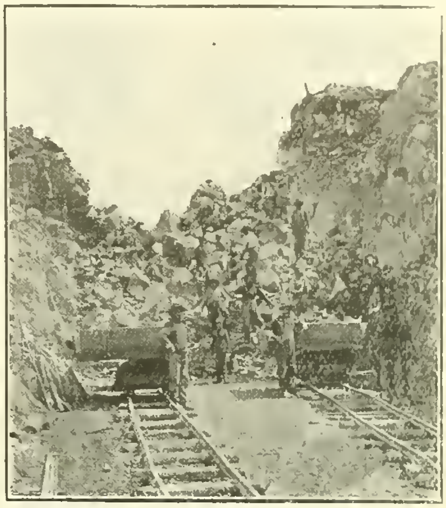

Fig. 3. Solid rock cut, debris being removed by stoneboats on a log track.

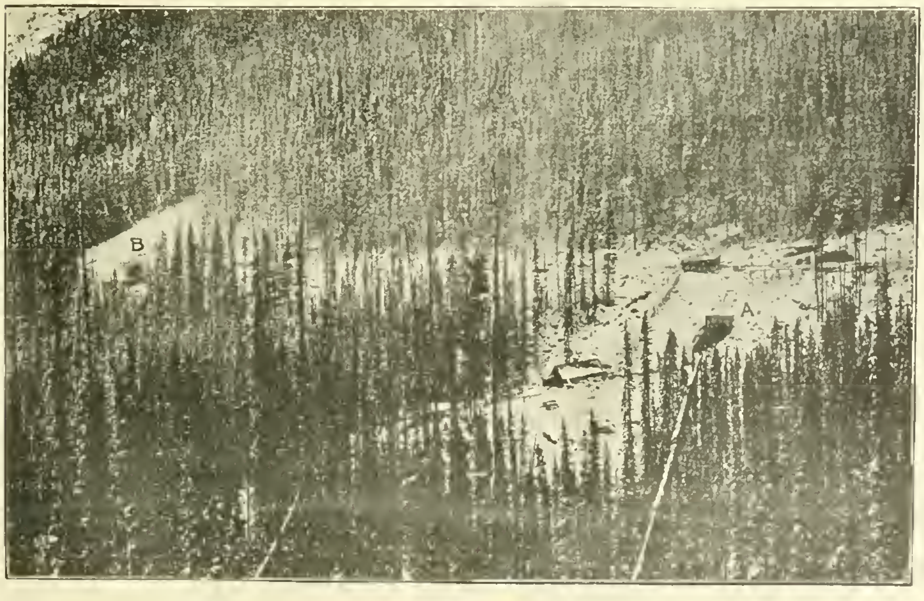

Fig. 5. Upper and lower portals spiral tunnel No. 2.

MUCKING.—The shovels were the standard no. 20 Marion shovels, with special short booms and dipper arms, and rock dippers with Panama teeth. The compressed air was delivered into the boiler, which acted as an additional receiver. The shovels were set as close to one side of the tunnel as possible and had each a special short jack arm to support it on the inner side. There were four shovels, one on each end of both tunnels.

A track of 2-ft. gauge was used for the cars, and a double track was run in the whole length of the tunnel to a switch; which was kept close up to the shovel. The empty cars came in on one track and the loaded cars went out on the other. The cars were built on the ground and held about 4 cu. yds. One car was switched alongside the shovel and loaded then run out and replaced by another. It took only about a minute for a loaded car to be run out and another empty switched in place as the switch was kept as close as possible to the shovel.

The tunnels being on a continuous grade one end was being driven up grade and the other end down. Where driving down grade the loaded cars were hauled out by horses and ran back by gravity. When driving up grade the loaded cars ran out by gravity (manned by brakemen), and were hauled back by horses.

WATER.—In each tunnel there was considerable water from seepage through the crevices, and small springs were struck in different places. With the ends being driven up grade there was no difficulty as a ditch at the side of the tunnel took care of this water. In the end going down grade, all the water naturally drained towards the face of the tunnel. To take care of this a sump hole about 3 ft. square and 3 ft. deep was put in a few feet back from the face. A pump operated by compressed air kept the water down in the sump hole, discharging out of the tunnel through a 4-in. wooden pipe. A new

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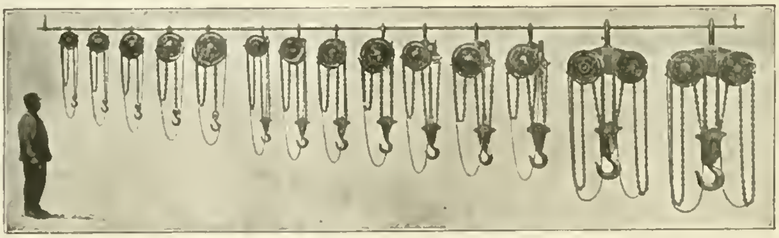

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sump hole was put in from time to time as the face of the tunnel progressed, and occasionally the pump was moved forward as the lift got too great for the suction end.

If anything went wrong with the pump for a short time the tunnel would fill very rapidly with water. In order to avoid the delay due to this, a second pump was installed, making a duplicate system, so that if anything went wrong with one pump the other could be turned on by merely opening the valves. In the winter considerable trouble was experienced with the discharge pipe freezing near the outlet end in the tunnel. This was overcome by covering the pipe with manure.

ELEVATION.—The elevation of the work being about 5,000 ft. above sea level, a certain allowance had to be made in figuring the steam and compressed air plant. A gain was made in generating steam, and on the exhaust end of the steam, but there was a loss on the compression of the air and a gain on the exhaust of the air drills and other machines.

WEATHER.—During very cold weather considerable difficulty was experienced with the freezing up of the air supply pipe lines from the compressor houses to the tunnels. This was due of course, to the freezing of the moisture condensed from the compressed air. Where the pipes leading away from the compressors were going up a considerable grade there was no trouble experienced, because the moisture condensing out of the compressed air would run back to a warmer part of the pipe. Where the pipes were nearly level or running down grade, they were continually freezing in different places during the very severe snaps. Additional air receivers were put on the air lines close to the compressors to further cool off the air and further condense out the moisture and also small blow-off cocks put at intervals along the pipe. These methods somewhat reduced the freezing trouble, but did not altogether overcome it.

METHOD OF GIVING LINE AND GRADE.—A base line was established between the two portals, which intersected with the tangents (or tangents produced) of the curves, on which the tunnel was driven. From this base line all alignment was given by setting out calculated deflections and distances. As a proof of the correctness of these calculations previous to starting the work these lines were run out on the prairie and they checked practically exactly. Centres were given from time to time in the tunnels 20 ft. centres as a rule. A table of offsets from the productions of these short chords was given the foreman, who was thus able to get his centre at any time from the last two centres. The centres were marked in the roof as well as on the bottom. The levels, of course, did not need any particular plan of action, being carried as in ordinary work, but with great care. The final result when the headings met was practically exact, the alignments closing within ¾-in. and the grade within a few hundredths.

PROGRESS RECORDS.—Table 2 shows the monthly progress at each tunnel. At first sight the record does not appear to be very good. As a matter of fact, however, it is considered to show very good progress under the adverse conditions due to difficulties in the drilling, troubles with water, the timbering and the very cold weather in winter.—Engineering News.

TABLE 1.—PLANT FOR DRIVING SPIRAL TUNNELS.

1 American-Rand cross-compound air-compressor capacity, 1,050 cu. ft. of free air per min. Air cylinder 22 and 13 × 16 ins.; steam cylinders, 14 and 24 × 16 ins.

1 Ingersoll-Rand straight-line air compressor; 1,100 cu. ft. per min. Cylinders, 20 and 20 × 30 ins.

1 Ingersoll-Sergeant straight-line air compressor; 1,425 cu. ft. per min. Cylinders, 24 and 20½ × 30 ins.

8 Fairbanks-Morse duplex pumps; 6 × 4 × 6 ins. to 8 × 5 × 12 ins.; 6 ram pattern, 2 piston plunger pattern, 5½ × 3½ × 5 ins.

1 Atlantic pump, 7 × 4½ × 6 ins.

9 boilers; 2 return tubular, 100 h.p.; 4 locomotive type, 80 h.p.; 2 locomotive type, 100 h.p.; 1 100 h.p.

2 engines: (1) 7 × 10 ins., 25 h.p.; (1) 4 × 5 ins.

1 hoist; cylinders 5 × 7 ins.

1 hoisting engine with boiler; 25 h.p.; cylinders, 7 × 10 ins.

1 d.c. generator, 25 kw., 250-volt, 100 amperes.

2 Westinghouse d.c. compound-wound generators, 6 kw., 125-volt, 48 amperes.

4 Marion steam shovels (operated by compressed air).

22 Canadian-Rand Little Giant rock drills.

6 rock drills.

TABLE 2—RECORD OF PROGRESS ON SPIRAL TUNNELS AT FIELD.

Month.	Tunnel 1.		Tunnel 2.	
1908.	Ft.		Ft.	
Jan.	34	started one end.	..	
Feb.	195	started other end.	35	started one end.
Mar.	205		111	only one end.
Apr.	226		122	started other end
May	277		157	trouble with water and bad ground.
June	241		118	
July	180		153	
Aug.	158	trouble with smoke and water.	107	
Sept.	173		219	
Oct.	165		301	
Nov.	158		277	
Dec.	200		252	
1909.				
Jan.	156	trouble with frost	244	trouble with frost
Feb.	150		215	
Mar.	215		251	
Apr.	197		287	
May.	170	finishing	63	
June.	75		..	
	3,184	ft.	2,912	ft.

◆

G. T. P. R. Rotary Snow Plow.

The Grand Trunk Pacific Ry. as mentioned in our last issue ordered from the Montreal Locomotive Works recently a rotary snow plow, 12 ft. cut, scoop wheel. The engine consists of two horizontal cylinders, 18 x 26 inches each, cast with half saddle, and rigidly bolted together and to the frame. Steam is distributed to the cylinders by slide valves actuated by Walschaert valve gear, so arranged that the pistons of the two cylinders operate in opposite directions. Each cylinder is connected to a cross shaft, on the end of which is a bevelled gear pinion which meshes with the bevelled gear on the end of the wheel shaft. The boiler is of the locomotive type, with Belpaire firebox, and carries a pressure of 190 lbs. Steam is conveyed from the dome of the boiler to the steam chests by means of outside wrought iron pipes, one on either side of the boiler. The throttle valve is of the balanced type, so designed that steam enters from the top only.

The wheel of the rotary consists of 10 hollow cylindrical cone shaped scoops, fastened by T-irons to the hub of the wheel, and to the steel plate disc which forms the back of the wheel. Each scoop is open on the front side its entire length, through which the snow is taken in. The openings in the scoop are of ample width to admit the snow cut by the knives, thus preventing choking or clogging of the wheel. The knives, which are of cast steel, are hinged one on each side of the opening, and are so arranged that they automatically adjust themselves into cutting position. Each pair of adjacent scoops is tied together at their outer ends, where the force is greatest, by a rod, making the periphery of the wheel practically one solid piece. The wheel is encased in a drum with a rectangular front or hood. The bottom of the front or hood is cut away in the shape of a V, so that on the sides it projects only slightly in advance of the cutting blades of the wheel; while at the centre, the knives are the first to encounter the snow. In consequence, the hood presents no dead surface to be forced into the snow, but practically the whole front of the rotary is a sharp cutting edge. The top of the hood is provided with a spout fitted with a movable cover. The wheel can be made to rotate in either direction, to throw the snow to one side of the track or the other and the cover of the spout may be turned to suit the direction in which the wheel is rotating. A feature of the rotary is a pneumatic gear for operating the cover of the spout, which has been added to the hand wheel operating device of the older design, and greatly facilitates handling of the plough.

Another feature of the rotary is the hood lifting device. In pulling the rotary back out of a drift, over cleared snow, particularly when the snow is wet or heavy, or at places where the ice cutters could not be operated, such as in yards, where the frogs and switches make this impossible, it sometimes happens that the loose snow will be scraped up and packed up under the hood, lifting the plow. To obviate this difficulty, the hood-lifting device has been applied; by means of which the front end of the shovel can be raised a maximum height of seven inches by means of power operated ball bearing jack screws. Power is derived from the rotary wheel shaft, the device being thown in or out of gear by means of a friction clutch mounted on the wheel shaft, and operated by a lever. The power is transmitted by means of a chain from the wheel shaft to a longitudinal shaft which drives the jack screws through a system of bevelled gears, worms and worm wheels mounted on a transverse shaft. A signal is placed in the pilot house, operated by a lever fulcrumed in the plow frame, which indicates when the high and low stops are reached, and also the intermediate heights of rise in inches between these two points.

The plow is carried on two four wheel plate frame trucks, especially designed to carry a maximum of strength with the minimum of weight. Ice cutters and flangers are applied as a safeguard against derailments. The ice cutters which are composed of two parts, the wing and the cutter, are secured to a wrought iron frame supported by bearings on the front of the frame of the forward truck. When in working position, the wing projects over the rail, and the cutter point projects down below the rail on the inside directly in front of the forward wheels. The flanges are secured to a wrought iron frame supported by bearings on the rear axle of the front truck. A pneumatic operating gear under the control of the pilot is provided, by which the ice cutter and flangers may be simultaneously raised or lowered. The frame is constructed of I beams and channels.

In the design of the cab, care has been taken to provide one of strong construction. It is partitioned off in front of the boiler, the forward part being the pilot house, and the rear the engineer's cab. The rotary is equipped with a Westinghouse E.T. No. 6 brake equipment. Following are the principal dimensions:

Total weight	200,000 lbs.
Total wheel base	22 ft.
Cylinders	18 x 26 ins.
Boiler	Belpaire type
Boiler pressure	190 lbs.

◆

Edmund Wragge, C.E., of Toronto, at one time Local Manager G.T.R. there, was married on Dec. 5 to Miss Maud Kingsmill, second daughter of Nicol Kingsmill, K.C., Canadian Solicitor Michigan Central Rd.

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CHARLES MILLER,

PRESIDENT

D. B. Hanna at Halifax.

The inauguration of the Canadian Northern Steamships, Ltd. winter service between Bristol, Eng., and Halifax, N.S., was marked by a dinner on the s.s. Royal Edward at Halifax, Dec. 6, at which a large number of prominent men from Nova Scotia, New Brunswick and Prince Edward Island were present. D. B. Hanna, Second Vice President C.N.S., who presided, said in part:—

It is a matter for regret that owing to important appointments made before this dinner was arranged, neither Mr. Mackenzie nor Mr. Mann is present with us tonight. It does, however, give me an opportunity of saying some things regarding them and the large enterprises they represent, which could not be as freely mentioned in their presence. I have the unique distinction of being the first appointed officer of the enterprises identified under the general name of Mackenzie and Mann. In 1896 it was my privilege as an officer of the Manitoba and North Western Ry., to frequently meet Mr. Mann in connection with construction for the Lake Manitoba Railway and Canal Company, which was the nucleus of the Canadian Northern Railway. I remember in one of our discussions, Mr. Mann suggesting a change in my position—to withdraw from the M. and N.W.R., now owned by the C.P.R., to take charge of the operations of his 100 miles of road. Subsequently I accepted his offer and became Superintendent. Incidentally I may say I was also train dispatcher, road master, treasurer, auditor, general freight and passenger agent, and any other departmental chief that may occur to a railroad man. In fact, it was essentially a one man's position. That was exactly 14 years ago this week. On Dec. 12, 1896, if my memory serves me, I made the first trip over the road with Mr. Mann. I confess that although I had lived in Western Canada for 10 years, I did not form a very high opinion of the traffic prospects of the line. The country was new and settlement was scarce, for the immigration which afterward flowed in such large numbers had not begun. Mr. Mann intended sailing for Europe the following week, and with that caution and thriftiness which is said to be characteristic of the Scotch, I arranged for a line of credit. I am glad to say, however, I had no occasion to use the credit, and I can say with absolute truthfulness, that from that day until now the gross revenues from our lines west of Port Arthur have always been sufficient to meet operating charges and fixed charges. The development of our system in the past 14 years has often been referred to, and at the risk of too much repetition, I propose to repeat a few of the facts.

Perhaps there is not one fact more illuminating than this, that whilst the company operated 100 miles in 1897, it is today operating, or has in course of construction, 7,135 miles. This does not include the British Columbia section of some 500 miles, or the gap still to be constructed between Sudbury and Port Arthur of 600 miles. But it includes all of our lines in Ontario, Quebec and Nova Scotia, so that by the end of 1914, when we hope to see the various gaps filled in, the Canadian Northern and its allied lines, all in Canada, with the exception of a few miles, will operate not less than 10,000 miles of railway. This, I submit, is a unique achievement that may perhaps never be duplicated by any other two men. A pay roll that in 1896 was $650 a month, reaches over a $1,000,000 a month in 1910. A gross revenue from the 100 miles of road in 1897 of $60,000, has grown to over $18,000,000 in 1910, from the C.N.R. and its allied railways. A staff of 13 men and a boy in 1896 reaches 48,400 in 1910. But it is proper to state in respect to the number of employes, I have included those of the subsidiary undertakings of my principals, which are in many respects identified with the C.N.R. proper. Whether it is in mining of coal, or iron ores, or in lumbering, or in grinding flour, or the making of cement, or salt, or in the electric business, or in iron products, in steamships, in the hotel business, or the grain elevator business, I want to make it perfectly clear that the governing principle of it all is the creation of traffic for the C.N.R.

We have not been content to build railways with the help of the Government; but we have taken all kinds of steps to develop commerce, with the result that not a cent has been called for from any Government under any guarantee that has been given. If my principals had no other object in view but that of making money for themselves, there were ample facilities at their command; but the dominating factor in the development of the C.N.R. has been to give to it every auxiliary, which makes for its own development and for the confidence of those who have invested in it. Thus, Mr. Mackenzie and Mr. Mann might have retained to themselves the land grant, which is valuable today, also the express, telegraph and sleeping car business subsidiary companies for these sources of revenue. They did neither. All the benefits accruing from these subsidiary services belong to the C.N.R. without cost to itself. Whilst the C.N.R. has been developing with such giant strides, the same story is true of Western Canada and the Dominion of Canada as a whole. I think we may claim some share of credit for this, if for no other reason than that in the construction of so much new mileage new continents have been opened up for settlement. At present there are 535 cities, towns and towns in embryo on the C.N.R. Sixty of these towns have a population of over 500, and 85 places have been given transportation facilities within the past 4 months.

In the Province of Alberta alone one new school has opened every school day, and during the year 1900 over 20,000 acres of land were settled upon daily. In opening up so much new territory it became an essential part of our policy to link up the old road with the new. With that directness which always characterized the work of Mackenzie and Mann, steps were taken to secure steamships. To have waited the construction of the type boat we had in view meant at least two years before we could become factors in the ocean travel. Therefore, when an opportunity offered for the purchase of the two boats now known as the Royal Edward and Royal George, we took advantage of it, and our company are now as much at home on the ocean as they are on land. Not many years ago the Dominion Government offered a very substantial subsidy for a 20 knot service. Today Canada is enjoying such a service, and, I regret to say, without the subsidy accruing to us. I need not discuss the appointments of these boats. You can judge for yourselves and we have every reason to hope that, in conjunction with the other Canadian ocean liners, a larger measure of British travel will flow through Canadian ports rather than by way of New York and Boston. In association with the steamship service we have inaugurated a very extensive immigration scheme, and today in the old land there are at least a score of active Canadian men and women on the C.N.R. staff preaching the gospel of emigration to Canada. I believe we have the support of the provinces of Nova Scotia and New Brunswick in these enterprises. I believe, with the facilities which we are able to offer the immigrant and the settler, that we shall enjoy a substantial share of this class of travel, and it will be a great pleasure to us to learn that so long as the steamers have their terminus at Halifax a steady stream of travel will pass through the port.

Why do I tell you these things? The answer, I think, is not far to seek. We believe the Maritime Provinces and the port of Halifax need us as much as we need them. The development of Canada is going on from sea to sea; and if the eastern part of the Dominion is to enjoy its full measure of the western development, and if the western provinces are to enjoy all the advantages of expansion in the East, and particularly its port facilities, such as we have here, there must be a close rail connection between the East and the West. I do not propose to say how this shall be done. You have the Intercolonial Ry., with its terminus in Montreal, but without any hold of its own on business with Ontario and the four great western provinces. I submit to you that there is no question of more vital importance than a frank and full discussion of how the I.C.R. can be linked up with the C.N.R. The C.P.R. has its terminus in St. John, the G.T.P. proposes to have its terminus in the east, and I ask you whether a connection for the C.N.R. into Halifax would not be advantageous to all concerned.

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Great Northern Ry. Lines in Canada.

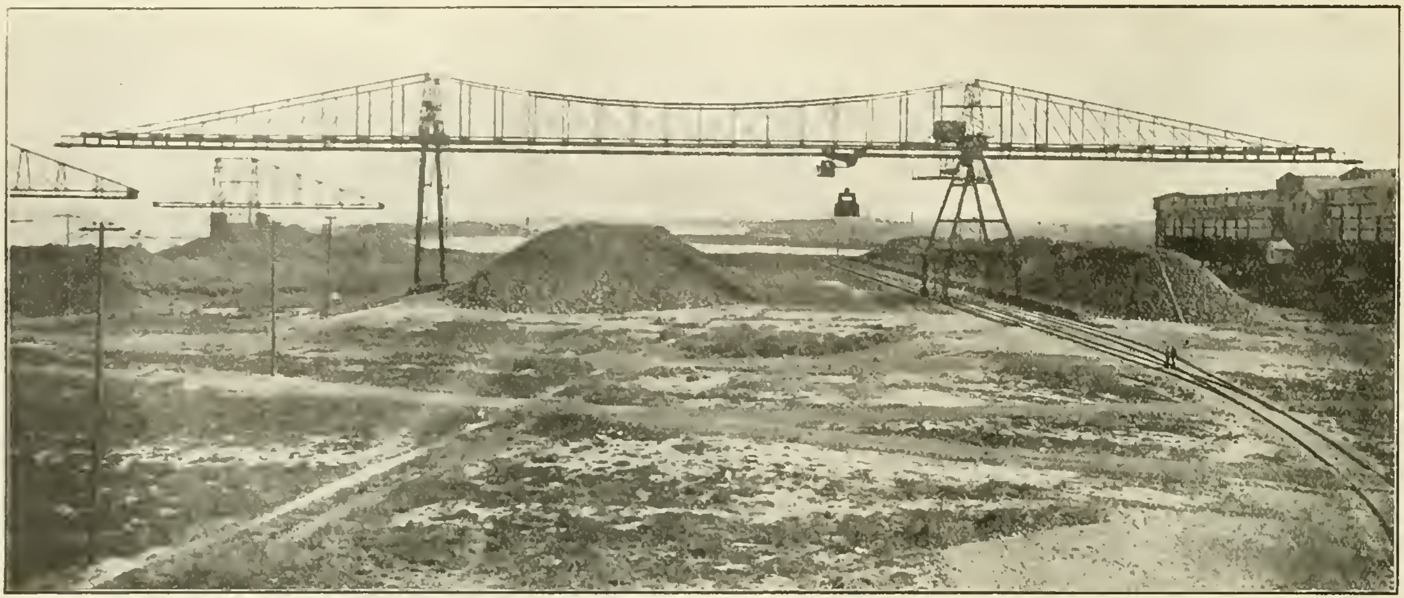
Manitoba Great Northern Ry.—Alderman Douglas, Winnipeg, stated Dec. 10, after an interview with J. Fisher K.C., who is solicitor for the G.N.R. in Winnipeg, that he had been advised from St. Paul, Minn., that no further progress would be made with the company's projects in Winnipeg and Manitoba at present.

Kaslo and Slocan Ry.—A. H. MacNeill, Solicitor for the G.N.R. in Vancouver, had a conference with the Premier of British Columbia, Nov. 29, respecting the question of the restoration of the K. & S. Ry. track and the resumption of train service on the line. A Kaslo dispatch Dec. 3, states that the G.N.R. is not anxious to operate the line at all, and another press dispatch, states that, "what is left of the line" will be "transferred to the C.P.R. and that the line will be rebuilt and operated next year."

Vancouver, Victoria and Eastern Ry. and Navigation Co.—Work has been suspended on the line in the vicinity of Princeton, B.C., for the season. Grading has been completed to Cardiff, and tunnle work at the entrance to Princeton was completed Nov. 30, 1910. It is said work will be resumed in June.

The Board of Railway Commissioners has authorized the building of an industrial track from False Creek to Powell St., Vancouver, paralleling the company's present track on Boundary St. Application is being made to the Board for permission to build two additional industrial tracks in the city.

Plans have been laid before the Board of Works of the Vancouver city council, showing the bridges which the company proposes to erect over the cut in Grandview at Broadview and Lakeview Drive. The plans were disapproved as they did not conform to the stipulations concerning similar structures in the city. The plans which the company is working out contemplate the laying down of two extra tracks in the Grandview cut, which will be widened all the way through the city. Three industrial spur lines are also contemplated in the same vicinity. The plans for the laying out of the land to be reclaimed at False Creek are being prepared, and these show that it is intended to lay at least 20 tracks. (Dec., 1910, pg. 1047.)



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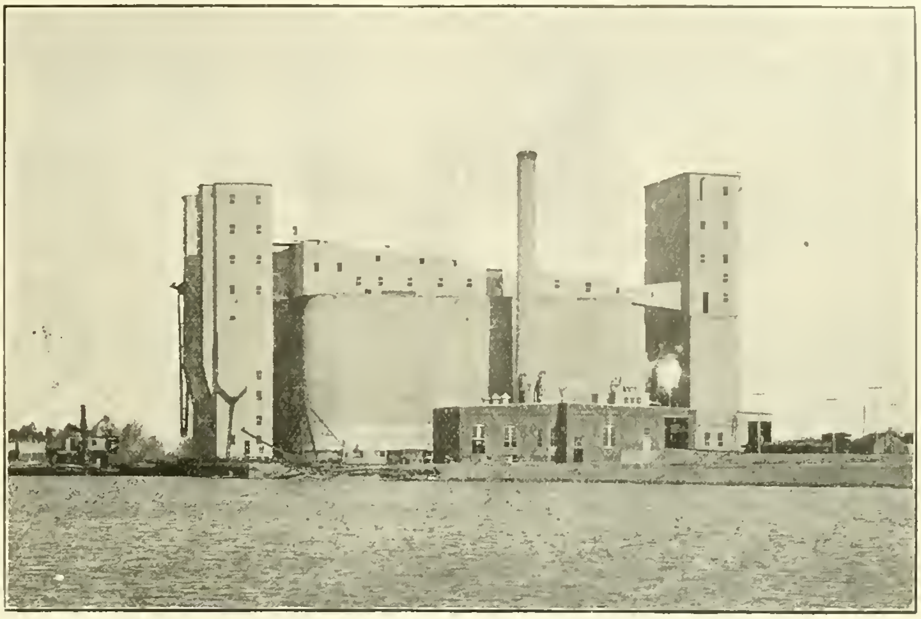
C. P. R. Elevator at Victoria Harbor.



Canadian Pacific Ry. Elevator at Victoria Harbor, Ont.

The Canadian Pacific Railway, which is in possession of large elevators at the head of Lake Superior, found it necessary to provide additional facilities at the eastern end of the lake haul, where its numerous grain vessels could be readily unloaded and the grain either stored or reloaded into railway cars for shipping eastward to Canadian territory. Hence it obtained a site at Victoria Harbor, Ont., at the extreme eastern end of Georgian Bay. With an island for a foundation, the company will have an ideal site for its terminal, after the extensive dredging and filling operations now under way are completed.

The new elevator plant has just been completed, consisting of two marine towers for unloading lake vessels, a 2,000,000 bush. storage house, a working house for loading cars and a 1000 k.w. power plant to supply the necessary power for operating the machinery. Each marine tower is 150 ft. in height, built of structural steel, covered with corrugated iron and mounted on 40 heavy car wheels. Steel stairs are provided from bottom to top and the roof and all the floors are of concrete. Each tower is self-propelling, travelling independently on the double track between the storage house and the slip, and can thus work to its full capacity regardless of the spacing of the hatches and different capacities of the various holds in the boats. The marine legs are specially designed so that they can enter passenger boats as well as freighters. Each marine leg will elevate 20,000 bush. of grain per hour on the dip, and a complete set of air-operated ship shovels and clean-up shovels is provided to bring the grain to the legs as rapidly and economically as possible. The marine legs deliver the grain to 1,000 bush. scales, after which it is elevated to the top of the towers and by an arrangement of spouts and conveyors dropped into any bin of the storage or working-house.

The storage house consists of 32 cylindrical reinforced concrete bins 33 ft. inside diameter and 31 interspace bins, each of which holds about a fourth of the capacity of a cylindrical bin. All the bins have hoppered bottoms, so are self-emptying. The present total capacity of the storage house is 2,000,000 bush. and the plant is so arranged that future extensions may be added to raise the capacity to 10,000,000 bush. With extension of the storage, additional marine towers are also contemplated.

The working house or shipping elevator, is also of concrete to the top of the bins and has a structural steel cupola covered with corrugated iron. All of the floors and roof are of concrete. The storage capacity of the workinghouse is comparatively small, being about 85,000 bush., as this part of the plant is intended principally for weighing and shipping the grain to railway cars. For this purpose are provided two 2,000 bush. scale hoppers, each on a 120,000 lbs. scale. Four car-loading spouts lead to two loading tracks one on each side of the house, each running through a track shed. This house will be able to load 200 cars in a 10 hour day. When necessary the cars can also be unloaded in the working house and boats or barges can be loaded by a special boat-loading spout on one of the towers. All of the machinery in the elevator plant is driven by electric motors. The working house may be readily extended to twice the present size with double the present equipment of legs and scales; so when business increases to require faster loading the shipping house will be enlarged to supply the demand.

To provide power for all this machinery and light for the buildings and yards, a modern power plant has been built. This is equipped with four 250 h.p. Babcock & Wilcox water-tube boilers which supply steam at 160 pounds pressure to two 500 k.w. Westinghouse-Parsons turbo-generators. The smokestack is of reinforced concrete 160 ft. high. A system of 750 incandescent lamps and 12 arc lamps makes the operation of the entire elevator plant as easy at night as in the day time. There are also installed a complete system of telephones, electric signal lights and bells and dust collectors. The entire plant is absolutely fireproof as with the exception of transmission ropes there is nothing combustible in it. Wire glass is used in all of the windows and the electric wiring is all in metal conduit. As an extra precaution for the protection of cars and boats, a fire pump has been provided which supplies water to a number of hydrants around the elevator. A concrete wharf 240 ft. long, carried down to a depth to provide for 25 ft. of water, was built along the front of the elevator.

In addition to the new elevator plant just completed, three-quarters of a mile of wharf, 800 ft. of flour shed, and 700 ft. of freight shed are now under construction. The entire work of elevator plant wharves and sheds, is being done under the direction of J. G. Sullivan, Assistant Chief Engineer, C.P.R., with Resident Engineer G. G. Ommanney in general charge at Victoria Harbor. All of the work is being executed by John S. Metcalf Co., grain elevator engineers, of Montreal and Chicago. The total expenditure for this construction will be in the neighborhood of $1,100,000.

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Demurrage Rules.—The Interstate Commerce Commission, in the matter of the investigation and suspension of certain demurrage schedules, reported recently, recommending that for six months following Dec. 1, 1910, the free time upon lumber and forest products, coal, grain, and grain products be extended from 48 hours to 72 hours, provided, however, that the application of the average rule shall only be allowed upon a 48 hour basis. Before the expiration of that period the Commission will be able to intelligently determine what commodities, if any, should be given a longer free time than the standard 48 hours.

Alberta Railway and Irrigation Co.

The reports for the year ended June 30 show a total revenue from railways, colliery, canals, profits on land sales, etc., after providing for depreciation, of $389,216. After deducting interest on prior lien, and 5% debenture stock, there was a surplus of $269,066, from which a dividend of 5% on the share capital was declared, absorbing $162,500, leaving $106,566 to be carried forward to the current year's accounts. The gross earnings of the railway were $378,128, against $320,936 for the previous year. The coal sales were 239,623 tons, an increase of 12,931 tons over the previous year. The land sales were 74,545 acres, and realized $805,491, the average price being $44.03 an acre for irrigated lands and $6.43 an acre for non-irrigated lands. There was also sold, 1,121 acres, in which the company has an interest with the C.P.R., the company's profit being $3,026 or equal to $2.70 an acre. The profit from sale of town lots was $146,900, the estimated profit from the sales being $611,700, but only profit received during the year from lands free from the trust viz.—$116,400, is included in the revenue account. The amount in reserve in connection with land sales is $1,643,478, and in connection with C.P.R. lands, $108,340. On June 30 the company had 221,425 acres remaining unsold, in addition to some town lots in Lethbridge Raymond Milk River, New Dayton and Chinn.

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Railway Lands Patented.—Letters patent were issued during Oct., 1910, in respect of railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres
Calgary and Edmonton Ry.	493.15
Canadian Northern Ry.	6,174.79
Canadian Pacific Ry. grants	820.31
Canadian Pacific Ry. Souris Branch	510.40
Canadian Pacific Ry. roadbed and station grounds	724.17
Grand Trunk Pacific Ry.	44.61
Qu'Appelle Long Lake and Saskatchewan Rd. and Steamboat Co.	592.32
Total	9,359.75

G. H. Phillips, Superintendent, Ottawa & New York Railway, Ottawa, Ont. in remitting his renewal subscription to the Railway and Marine World, says, "I wish your valued publication continued success."

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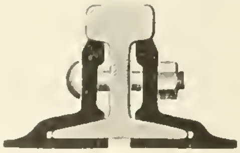

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RAILWAY DEVELOPMENT.

Projected Lines, Surveys, Construction, Betterments, Etc.

Alberta and Great Waterways Ry.—A bill confirming the Provincial guarantee for the bonds issued in 1909 for the building of this projected railway, under the special legislation of 1908, was read a second time by the Legislature, Dec. 4. The principal feature of the bill, however, is that it declares the proceeds of the bond issue, now deposited in three banks, is to "form part of the public revenue fund of the province, free and clear of any claims by the A. and G.W. Ry. Co., its successors or assigns, and the province shall indemnify and save, harmless, the railway company, its assets and its undertakings from any and every claim made under said bonds or any of them."

W. R. Clark, of Kansas City, Mo., President of the company, has appealed to the Dominion Government to look into the matter, and to the U.S. Government to see what steps can be taken to look after the interests of the shareholders, who are almost without exception, citizens of the U.S. The bond issue was made through J. P. Morgan & Co., New York.

The plans for the railway which were submitted to the late government, and which were not to be found when wanted, were discovered behind some shelves in a cupboard in the Speaker's room in the Legislature building at Edmonton, Dec. 11. They were not signed as having been approved by the Premier. (Nov., 1910, pg. 909.)

Algoma Central and Hudson Bay Ry.—In an interview at Toronto, Dec. 3, W. C. Franz, General Manager, Lake Superior Corporation, said the company was pushing construction on the line between its present northerly terminus and the C.P.R. transcontinental line at Hobon, Ont., at four points, and that 30 miles of track had been laid. There were, he said, 2.000 men engaged in the work, and it was expected to have it completed by the end of 1911. As soon as this work was completed it was intended to go on with extending the line from Hobon to a junction with the National Transcontinental Ry., 115 miles. Survey parties were in the field locating a route for this line.

The work at present in hand is the clearing of the right of way graded several years ago, and its completion from the end of steel to Hyde Park Jct., the present terminus of the Michipicoten branch, and the construction of the line from that point to Hobon. The gangs are at work northerly from near Pangassin, the present end of track, north and south from Hyde Park Jct., and southerly from Hobon.

We were advised Dec. 12 that very good progress was being made with the construction of the extension from Hawk Lake Junction to Hobon, on the C.P.R. transcontinental line, and from Hawk Lake Jct., southerly to the present end of steel on the main line. On this latter section of the line, track had been laid to mileage 68 from Sault Ste. Marie, and track has now been laid to the first bridge north of the Batchawana River, about mileage 82. The bridge at this point is being built, after which the track laying will be proceeded with, and it is expected that steel will be laid to the Montreal River by about April. This is a large bridge, the contract for the superstructure of which has been let to the Canadian Bridge Co., Walkerville, Ont. Timber has been delivered at Agawa Bay on Lake Superior, which is opposite mile 100 on the main line, and the construction of the large bridges at this point will be gone on with during the winter, so as to permit of rapid tracklaying in the spring. At the north end of the line track is laid through to the Michipocoten River about 19 miles south of Josephine Jct., and the contractors' forces are now engaged in building the bridge over this river and other small bridges in the vicinity. It is expected to lay track as far south as mileage 144 this winter. North from Hawk Lake Jct. it is expected that the contractor will have finished the grading by June 15, when tracklaying and ballasting will be started. It is hoped to have the line completed to Hobon by the end of the year. The Magpie branch, which starts at mileage 18 on the Josephine branch, and extends north and west for nine miles to Magpie mine, is also well under way. Track has been laid to the crossing of the Magpie River, about 5.50 miles, and the bridge across this river is under construction.

North from Hobon one survey party is in the field running a line to a connection with the National Transcontinental Ry., and it is expected that with the beginning of the year two additional parties will be put in the field to locate the line. It is the company's intention to have this line built as early as practicable.

Atlantic, Quebec and Western Ry.—At a recent meeting in London, Eng., of the depositors in the Charing Cross Bank, which holds the company's bonds, it was stated that if money can be found to complete the line it is highly probable it will become a valuable asset. The line, it was stated, was a very costly one to build, owing to the very large number of bridges across rivers and streams. The country through which the line passed was sparsely inhabited, but large sums had been expended in opening up the timber resources, and it was expected there would be a considerable timber traffic. (Dec., 1910, pg. 1027.)

Burrard Inlet Tunnel and Bridge Co.—Soundings and surveys of the Second Narrows have been completed by the company, and preparations have been made for the making of borings to ascertain what work it will be necessary to do to get a secure foundation for the abutments and piers of the proposed bridge. Cleveland and Cameron, Vancouver, B.C., are the engineers.

A petition is being signed asking the Dominion Parliament to grant a subsidy towards the building of the bridge. It is pointed out in the petition that the company is being financed chiefly by the municipalities interested, that the Provincial Government has granted $250,000, and that a private corporation, to which Parliament granted a subsidy some years ago, has failed to do anything to earn it. It is suggested that not less than $300,000 be granted towards the building of the bridge and $10.000 a mile towards the railway connections. (Dec., 1910, pg. 1013.)

Burrard, Westminster Boundary Ry. and Navigation Co.—Application is being made to the Dominion Parliament to extend the time within which the company may build the lines authorized by chap. 68 of the statutes of 1907, as amended by chap. 50 of the statutes of 1909. Tupper and Griffin, Vancouver, B.C., are solicitors for applicants. (July, 1909, pg. 475.)

Canada and Gulf Terminal Ry.—We are advised that the section of the line from St. Flavie to Matane, Que., has been completed, and that arrangements have been completed for the placing of a train service in operation over it, on receipt of an order from the Quebec Public Utilities Commission. Survey parties are in the field to locate a line from St. Flavie westerly to a junction with the National Transcontinental Ry. near Lake Temiscouata, and easterly from Matane along the valley of the Matane River towards Gaspe Basin. The total length of the line as projected from the N.T.R. to Gaspe Basin will be about 300 miles. The route proposed to be followed is through the rear portions of Temiscouata and Rimouski counties and the centre of Gaspe Peninsula, through rich agricultural and timber lands, the route through the Gaspe Peninsula being practically through a virgin forest. The section of the line completed has been built to the N.T.R. standard, and laid with 80 lb. steel, which standard it is proposed to follow throughout. (Oct., 1910, pg. 825.)

Canadian Inter-Mountain Ry.—Application is being made to the Dominion Parliament to incorporate a company with this title to build the following lines: from Coutts, at the International boundary, northerly to Milk River, thence westerly to Cardston, thence southwesterly to the western boundary of Alberta, at the summit of Kishemench Pass, thence westerly in British Columbia, to the Flathead River, and thence northerly to the C.P.R. Crow's Nest Pass line at Fernie; from Milk River easterly to Estevan, Sask., with branch lines, of which the following are specifically mentioned: from the confluence of Calder Creek and Flathead River to Elko; from Cardston to Lethbridge; from tp. 3, range 1, west 4th meridian, to Lethbridge; from tp. 4, range 19, west 3rd meridian, to Swift Current, Sask.; from tp. 6, range 29, west 2nd meridian, to Moose Jaw, Sask. Taylor, Harvey and Baird, Vancouver, B.C., are solicitors for applicants.

The Canadian Western Ry. Co., we are advised, is applying for an extension of time for construction. For some time nothing has been done in the way of pushing arrangements for building the line owing to the situation created by the enquiry into the Alberta and Great Waterways charter. At the time the question affecting this company came up, the C.W.R. had completed its surveys for a line from Calgary by way of Pincher to the International boundary, and had received a promise from the Alberta Government that the Legislature would be asked to vote a subsidy. (Dec., 1910, pg. 1013.)

Chicago, Milwaukee and Puget Sound Ry.—It is expected that early in the spring a through passenger and freight service will be operated over this line, which is the extension to the Pacific coast at Seattle, Wash., of the Chicago, Milwaukee and St. Paul Ry. The annual report of this latter company reports upon the progress of construction of the main line and branches. Of these branches the one which is of importance so far as Canadian interests are concerned, is that from Warden, Wash., which has been completed for 47.5 miles northeasterly to Hamlin. If this line were continued northeasterly it would reach Metalline, Wash., from which point the Idaho and Washington Northern Ry. proposes to build a line to the International boundary south of the Salmon River, B.C. (See Chicago, Milwaukee and St. Paul Ry., Dec, 1910, pg. 1013. See also Salmon River to Peace River).

Graham Island Ry.—Application is being made to the British Columbia Legislature to incorporate a company with this title to build a railway from Skidegate Inlet on Graham Island through the centre of the eastern portion of the island to Masset village, or the shore of Masset Inlet. H. W. R. Moore, Victoria, is solicitor for applicants. (Sept., 1910, pg. 725. See also Skidegate to Indian Village.)

Halifax and Eastern Ry.—Press reports state that practically all the arrangements have been completed between the company and the Nova Scotia Government for the beginning of con-

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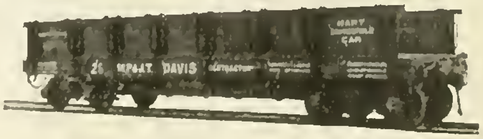

THE HART-OTIS CAR CO., LIMITED
MONTREAL

struction in the spring. (Nov., 1910, pg. 911.)

Imperial Traction Co.—The Dominion Parliament is being asked to incorporate a company with this title, with power to build railways as follows: from Hamilton to Guelph, Guelph to Berlin, Berlin to Stratford, Stratford to St. Marys, St. Marys to London, London to Ingersoll, Ingersoll to Woodstock, Woodstock to Brantford, Brantford to Hamilton, with an extension from the latter line to Niagara Falls, and a branch from the Stratford-St. Marys line to Lake Huron and following the shore to Sarnia. Harding and Owens, Stratford, Ont., are solicitors for applicants.

Indian River Ry.—Application is being made to the Dominion Parliament to extend the time within which the company may build the line authorized by sec. 1, chap. 95 of the statutes of 1907. L. A. Cannon, 139 St. Peter St., Quebec, is the solicitor. (Dec., 1910, pg. 1013.)

International Ry. of New Brunswick.—The line from Campbellton, on the Baie des Chaleurs, across New Brunswick to St. Leonards, 113 miles, has been completed and passed for traffic. A connection with the C.P.R. has been made at St. Leonards, and freight trains have been running for some time. A passenger service was started early in Dec. A connection will be made with the National Transcontinental Ry. near St. Leonards. T. Malcolm, the contractor, stated in Montreal recently, that the station buildings, etc., were being erected, and that next year the road would be in first class shape for handling traffic. Nothing had, it is said, been decided as to connecting the line with U.S lines at Van Buren Me. across the St. John river from St. Leonards, or with the old Atlantic and Lake Superior line, on the Quebec side of the Restigouche River. (Sept., 1910, pg. 727.)

Kettle Valley Lines.—It is reported that the valuators have agreed on a figure of approximately $62,000 as the price which the K.V.R. will pay for the right of way which was graded between Midway and Rock Creek, B.C., by the old Midway and Vernon Ry., and that the amount will be utilized to pay off claims filed against that company so far as it will go. The right of way has been cleared between Midway and Rock Creek, 10 miles, and the track was reported to have been laid on this distance Dec. 10. It was expected to complete the tracklaying on a further distance of about 10 miles by Dec. 31. Grading gangs are working westerly from Rock Creek, and easterly from Merritt, there being about 1,000 men at work. (Dec., 1910, pg. 1015.)

Kootenay and Alberta Ry.—A press report states that this company's immediate project is to build a line from the Beaver Creek coal mines to Pincher Creek, and thence southeasterly to the International boundary and on to Butte, Mont. We are officially advised that the Mont. We are officially advised that tenders will shortly be called for for the building of a line which will start from about a mile west of Pincher station on the C.P.R., on a course 16 miles southwest to Beaver Creek colliery, and that work will be commenced thereon during the current winter. A press report from Pincher Creek, Alta., stated that tenders were received Dec. 10, for the building on the line. The engineering party has moved its headquarters to the Milk River, near Mountain Mill, and is continuing its survey work southerly. L. B. Merriam, C.E., is in charge of construction. The company is controlled by the Western Coal and Coke Co.

Following are the officers and directors for the current year of the Western Coal and Coke Co., which controls the K. & A. R.:—President, E. B. Greenshields, Montreal; Vice Presidents, Hon. R. Mackay, Montreal, and J. B. Ferguson, St. Catharines, Ont.; other directors, H. A. Lovett, J. W. McConnell, Montreal; J. N. Lake, J. E. Woods, Toronto. (Dec., 1910, pg. 1015.)

Lethbridge Collieries Co.—A spur line of about a mile has been located and is being built by the C.P.R., from the C.P.R. Crow's Nest Pass line these collieries.

Following are the officers and directors for the current year:—President, E. B. Greenshields, Montreal; other directors, Hon. R. Mackay, H. A. Lovett, J. W. McConnell, N. Curry, Montreal; J. S. Hough, D. B. Adams, I. Cockburn, C. H. Campbell, Winnipeg. (Nov., 1910, pg. 911.)

Lloydminster to Fort MacMurray.—Application is being made to the Dominion Parliament to incorporate a company to build a line from Lloydminster, Sask., via St. Paul de Metis, and Lac La Biche, to Fort MacMurray, near the junction of the Clearwater and Athabasca rivers. It is also desired to have power to build the following branch lines: from south of the Saskatchewan River, via Brudenheim to Edmonton, Alta.; from Lloydminster southerly via Medicine Hat to the International boundary, near the Milk River, Alta.; from Lloydminster or a point on the last mentioned line, southwesterly via Buffalo Lake to Blackfields and Red Deer, Alta.; from near Lloydminster, southeasterly via Manitou Lake and Scott, to Saskatoon; from Lloydminster, or a point on the main line northerly via Cold Lake to Lac La Loche and the headwaters of the Clearwater River; from Lloydminster via Elbow, near Fort Pitt, via Dore Lac and Lac La Ronge to Hudson Bay, or a point on the railway to Hudson Bay. The notice of application is signed by H. B. Hall and H. C. Lisle.

Manitoulin and North Shore Ry.—Tenders will be received to Jan. 2 for the grading of the roadbed and the erection of all structures on the following sections of the line: from Crean Hill, mileage 22.7 west of Sudbury, to a connection with the present line at Espanola, and from Espanola southerly to mileage 61.

We are advised that excellent progress is being made with the 18 mile section of the line from Little Current, northerly. The section of the line for which tenders are being received to Jan. 2, extends from Crean Hill, to White Fish Bay.

New Brunswick and Prince Edward Island Ry.—A branch line in Sackville, N.B., is being surveyed by Professor Crowell. As far as possible the line will run along the boundary line of the Fawcett property, crossing Main st., by the Fawcett foundry, and up the hill to the quarry. There will be a good deal of curvature on the line, and a heavy gradient to the quarry.

Peace River Great Western Ry.—The provisional directors named in the bill now before the Alberta Legislature for the incorporation of a company with this title are: R. A. Grant, R. H. Percival, W. J. Cook, C. E. Johnston, Winnipeg; G. Cochrane, Moredon, Man. (Dec. 1910, pg. 1015.)

Portland Canal Short Line Ry.—Track is reported to have been laid from Stewart, B.C., to a point about four miles inland, and that about 75% of the whole work on the line to Bear River has been completed. (Nov., 1910, pg. 911.)

Reid Newfoundland Ry.—Grading was reported to have been completed on the Bonavista branch Nov. 30, and track was reported to have been laid to beyond Trinity East. Between Catalina and Bonavista there is a stretch of marsh land extending for about a mile and a half, which will require considerable filling before track can be laid across it. Ballasting was proceeded with until prevented by the frost. (Dec., 1910, pg. 1015.)

St. John Valley Ry.—Recently engineers representing the Mackenzie, Mann & Co. interests and the G.T. Pacific Ry., and F. C. Dunn, a New York engineer, have been in Fredericton, N.B., looking over the plans of the surveys made for this projected railway by the Provincial Government engineering staff. The Provincial authorities decline to say anything as to the purpose of these negotiations. (Dec., 1910, pg. 1017.)

Salmon River to Peace River.—The British Columbia Legislature is being asked to incorporate a company with this title to build a railway from Salmon River, Dean Channel, Bella Coola or other points near, on the western boundary of the province to Sigulta Lake, to Kivalcho Lake, along the Uhalghart River to Entiaco Lake, along the Entiaco River to Natulkus Lake, along the Upper Nechaco River to Fraser Lake, thence easterly to the point where the Peace River crosses the eastern boundary of British Columbia. Elliott, McLean and Shandley, Victoria, are solicitors for applicants.

In connection with this project U.S. papers state that the Idaho and Washington Northern Ry., which at present has its terminus at Metalline, 11 miles south of the International boundary, proposes to extend northerly along the Salmon River Valley. A route is reported to have been surveyed along the valley to Salmo, thence along the Beaver Valley to Trail, and other points in British Columbia. The I. and W.N.R. is reported to be working in conjunction with the Chicago, Milwaukee and St. Paul Ry. (See Chicago, Milwaukee & Puget Sound Ry.)

Simcoe, Grey and Bruce Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Southampton, easterly to Owen Sound, easterly and southeasterly, passing Meaford, Thornbury, Collingwood and Orillia, to the Canadian Northern Ontario Ry., east of Orillia, Ont. Mackay, Telford and Macdonald, Owen Sound, are solicitors for applicants.

Skidegate to Indian Village.—The British Columbia Legislature is being asked to incorporate a company to build a line on Graham Island, Queen Charlotte group, from Skidegate Inlet northerly to opposite Gambus Island across Gambus Island and Masset Inlet, northwesterly, touching the east end of In-Tsua Lake, across Naden River and around the western shore of Naden Harbor to the old Indian Village. Power is also asked to build branch lines, and more particularly one from opposite Gambus Island, parallel with the shore line of Masset Inlet to Masset village, thence northeasterly to between Cape Fife and Rose Point. C. F. Davie, Victoria, B.C., is solicitor for applicants.

Sydney and Louisburg Ry.—The question of the construction of a subway under the tracks at McQuarrie's crossing, Sydney, N.S., is under consideration. The city engineer in his report urges that efforts be made to reduce the gradients of the approaches to the subway, so as to be more favorable for traffic, which was approved. The company has under construction a short spur from McKeegan's point to Dixon's platform, about a mile, and is reconstructing the line between mileage 30 and 31. Surveys are being made for a branch front Balls Creek, for 2.4 miles, to the limestone quarries, and from Morinin station for 2.25 miles to the Birch grove collieries. (June, 1910, pg. 453.)

Temiskaming and Northern Ontario Ry.—An order-in-council was passed by

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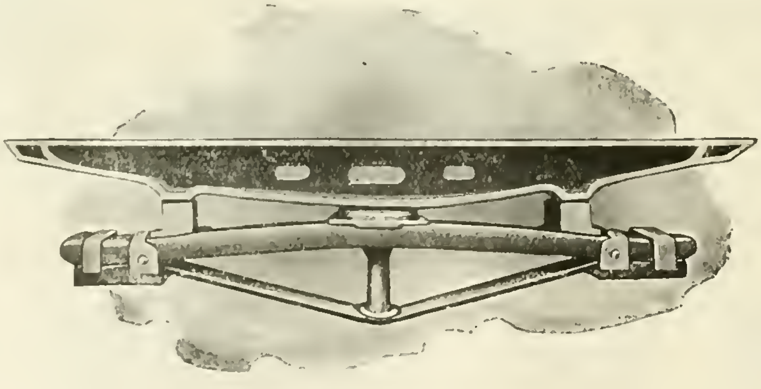

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the Ontario Government Nov. 30, authorizing the building of a branch line from near Kelso to the Porcupine district, about 32 miles, at an estimated cost of $450,000.

The Government early in 1910 made an agreement with a private company to build such a line, it being understood that a charter would be given by the Legislature at the 1911 session. This agreement subsequently passed under the control of interests represented by E. A. Wallberg, Montreal, who is interested in power development plants on the Metagami and other rivers. While surveys have been made no actual construction has been done, and the Government has taken the position that the company has forfeited its right to further consideration. The charter has been cancelled and the order-in-council passed authorizing the building of the line under the general authority for the building of branch lines by the T. and N.O. Ry. Commission. J. L. Englehart, Chairman of the Commission, in an interview subsequently, said: "Our engineers are out on the survey work from Kelso, and work will be begun at once. We expect to have the line in operation by June 1." The line will, it is said, be built across a sandy plain to Night Hawk Lake, which will be crossed by a bridge, and by an easy route to the Porcupine River, which will also be crossed, about 1.5 miles north of the Crombie townsite, thence through the centre of Tisdale tp. to the Metagami River. Steam will be used for hauling trains at first, but press reports state that the line will ultimately be operated by electricity.

We were advised, Dec. 12, that the branch is being built by the Commission direct, and that though actual surveys are not yet completed, everything possible will be done this winter, the intention being to complete the line and have trains running by July 1. J. M. Bourke, C.E., has been appointed Superintendent of Construction. (Dec., 1910, pg. 1015.)

Timagami and Ontario Northern Ry.—Application is being made to the Dominion Parliament to extend the time within which the company may build its projected railway from Sturgeon Falls, Ont., northerly. The notice of application is signed by J. Craig, President, Sturgeon Falls, Ont. (Aug., 1910, pg. 631.)

Toronto, Hamilton and Buffalo Ry.—A press report states that the company has acquired some 23 acres of land close to Cline's Park, Hamilton, for additional yard space. (Dec., 1910, pg. 1017.)

Vancouver to Winnipeg.—A letter has been addressed by the Minister of Public works for British Columbia to the Premiers of Alberta, Saskatchewan and Manitoba, suggesting that the four provinces should unite for the purpose of building a scenic railway from Vancouver to Winnipeg.

◆

Station Location Plans.—The Board of Railway Commissioners has directed that in future whenever it is the intention of a railway company to construct a permanent station, and an application is to be made to the Board for its approval, a copy of the application and plan be served on the municipal authority of the district in which the station is to be erected; or if there is no municipal authority, then on the Government or other authority having control over the district.

T. H. White, Chief Engineer, Canadian Northern Pacific Ry., in writing from Vancouver in answer to an enquiry respecting progress of work says, "I am glad to help with the Railway and Marine World, which we all admire and enjoy."

Canadian Northern Ry. Earnings, Etc.

Gross earnings, working expenses and net profits from July 1, 1910, with increases over, or decreases from, those of 1909-10:

	Earnings.	Expenses.	Net Earnings.	Net Increase
July	$1,225,100	$876,900	$348,200	$118,600
Aug.	1,093,000	830,000	263,	58,600
Sept.	1,279,900	898,700	381,200	69,700
Oct.	1,627,800	1,047,300	580,500	99,800
	$5,225,800	$3,652,900	$1,572,900	$346,700
Inc.	$1,114,200	$ 767,500	$ 346,700	......

Approximate earnings for Nov., $828,300, and for two weeks ended Dec. 14, $621,100, against $807,400 and $580,700 for same periods 1909.

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C.P.R. Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases over 1909-10. from July 1, 1910:

	Earnings.	Expenses.	Net Profits.	Net Increase
July	$8,869,214.32	5,384,594.73	3,484,619.50.	1,004,748.86
Aug.	9,255,331.67	5,563,659.34	3,691,672.33	727,614.46
Sept.	9,315,213.67	5,403,614.03	3,911,599.64	479,710.47
Oct.	10,229,370.77	5,724,210.25	4,505,160 52	118,863.33
	$37,669,130.43	$22,076,078 35	$15,593,052.08	$2,330,937.12
Inc.	$5,034,340.98	$2,703,403.86	$2,330,937.12	......

Approximate earnings for Nov., $4,874,000, and for two weeks ended Dec. 14, $3,572,000 against $4,675,000 and $3,651,000 for same periods 1909.

DULUTH, SOUTH SHORE AND ATLANTIC RY.—Operating revenue for Oct., $280,052.15; expenses, $189.786.49; net revenue, $90,265.66. against $308,233.87 operating revenue; $200,500.67 expenses; $107,733.20 net revenue for Oct., 1909. Aggregate operating revenue for four months ended Oct. 31, $1,227.668.75; expenses, $781.745 12; net revenue, $445 923.63, against $1 212.410.17 aggregate operating revenue; $791.793.98 expenses; $420,616.19 net revenue for same period 1909. Approximate earnings for Nov., $132.093, and for two weeks ended Dec. 14, $11.743, against $127,759 and $101.180 for same periods 1909.

MINERAL RANGE RD.—Operating revenue for Oct., $64 374 13; expenses, $56.913.74; net revenue, $7.46 39, against $73.725.16 operating revenue; $65 842.15 expenses; $7.883.01 net revenue for Oct., 1909. Aggregate operating revenue for four months ended Oct. 31, $252,158.91; expenses, $252 678.57; net expenses, $519.66, against $298.657.05 aggregate operating revenue; $248.482.65 expenses; $50.174.40 net revenue for same period 1909. Approximate earnings for Nov., $31 657, and for two weeks ended Dec. 14, $27.530, against $40.221 and $30,522 for same periods 1909.

MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RY.—Operating revenue for Oct., $1.269 067.55; expenses and taxes $780.513.96; operating income, $488.553.59 against $1,915.981.22 operating revenue; $835 702.09 expenses and taxes; $1.080,279.13 operating income for Oct., 1909. Aggregate operating revenue for four months ended Oct. 31, $4 951 867.94; expenses and taxes, $3.051.224 40; operating income, $1.900 643.54, against $5.934.041.26 aggregate operating revenue; $3,098.764 76 expense and taxes; $2,835 276.50 operating income for same period 1909. Approximate earnings for Nov., $2.004,761, and for two weeks ended Dec. 14 1910, $811,955, against $2,121.624 and $723,247 for same periods 1909.

CHICAGO DIVISION.—Operating revenue for Oct., $819.508.24; expenses and taxes, $627,313.62; operating income, $192.194 62, against $802.660.25 operating revenue; $525.352.08 expenses and taxes; $277.308.17 operating income for Oct., 1909. Aggregate operating revenue for four months ended Oct. 31, 1910, $3.227.484.60; expenses and taxes, $2.328,105.99; operating income, $899.378.61, against $2.983,469 aggregate operating revenue; $1.952.653.47 expenses and taxes; $1.030,815.53 operating income for same period 1909.

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Grand Trunk Ry. Earnings, Expenses, Etc.

The following figures show the earnings, expenses, etc., of the G.T.R., C.A.R., G.T. Western Ry., and D.G.H. & M.R. for Oct., 1910, and 1909, respectively:

GRAND TRUNK RAILWAY.

	1910.	1909.
Earninga	$3.251 700	$3 130,000
Expenses	2,331.300	2,181.000
Net earnings	$ 920.400	$ 949,000

CANADA ATLANTIC RAILWAY.

	1910.	1909.
Earnings	$ 203.800	$ 203,000
Expenses	157,800	149,000
Net earnings	$ 46,000	$ 54,000

GRAND TRUNK WESTERN RAILWAY.

	1910.	1909.
Earnings	$ 542.500	$ 526.000
Expenses	464.300	421,500
Net earnings	$ 78,200	$ 104,500

DETROIT, GRAND HAVEN AND MILWAUKEE RY.

	1910.	1909.
Earnings	$ 201 900	$ 184,700
Expenses	150,300	140,200
Net earnings	$ 51.600	$ 44 500

Approximate earnings for Nov., $2.043.460, and for two weeks ended Dec. 14, 1910, $1,664,238, against $2,013.293 and $1.577,972 for same periods 1909.

TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate from July 1 to Nov. 30:—

	1910.	1909.
Grand Trunk Ry......	£3,095,556	£3,043,937
Canada Atlantic Ry...	173,608	193,362
G.T. Western Ry.	501,754	531,609
D.G.H. & M. Ry.......	178,103	176,856
Total	£3,949,021	£3,945,764

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Quebec Central Railway.

The report for the year ended June 30 shows gross earnings $1,105,867; expenses $759,556; net operating earnings, $346,311; interest earned $5,675; net income $351.986, against $1,021,682 gross earnings; $724,918 expenses; $296,764 net operating earnings; $9,176 interest earned; $305,940 net income for the year ended June 30, 1909. Added to the balance brought forward from 1909 $46,232, there was a balance on hand at June 30, of $398,218, from which is deducted, interest on 4% debenture stock $116.525; interest on 3% debenture stock, $49,348, and interest on 7% income bonds $115.545, leaving a balance of $117.200, of which $15,000 has been transferred to the reserve contingent fund bringing the amount to the credit of this fund to $80,000. Out of the surplus of $102,200, a dividend of 2% for the year was declared, absorbing $55,607, and the balance of $46,593 was carried forward to the current year's accounts. During the year there was an issue of £75,000 of 4% debenture stock for capital purposes raising the amount outstanding at June 30, to £604,837. The general balance sheet shows assets of $10,290,150.92, the liabilities of $10,008,457.90. The rolling stock owned at June 30, is given as follows: 23 locomotives, 13 first class cars, 6 second class cars, 3 baggage cars, seven baggage and mail cars, seven baggage and passenger cars, one official car, two dining cars, 308 box cars, 325 flat cars, 74 stock cars, six refrigerators cars, 20 drop bottom coal cars, five gondola hopper bottom coal cars, 35 Hart convertible cars, seven vans, one ballast spreading car, four snow plows, one steam shovel, one steam shovel tank car and six miscellaneous cars.

At the annual meeting in London, Eng., Oct. 19, E. Dent, President, said that this was the first time that the Board had felt justified in declaring a dividend He also pointed out that the increased train loads necessitated the use of stronger bridges and culverts and the use of heavier ballasting, and stated that the laying of 80 lb. rails was being continued. The extension of the line to St. Justine, was practically completed by June 30, and the returns from operating have been included in the current year's earnings. The report was carried unanimously, and the directors re-elected for the current year, as follows: E. Dent, F. Grundy, A. Bremner, T. Lindley, and F. H. Norman. F. Grundy, Vice-President died since the meeting was held.

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J. H. Corbett and J. M. Floesch, contractors for the construction of the first 50 miles from Moncton, N.B., of the National Transcontinental Ry., were entertained to dinner by the city, Dec. 7, on the completion of their contract.

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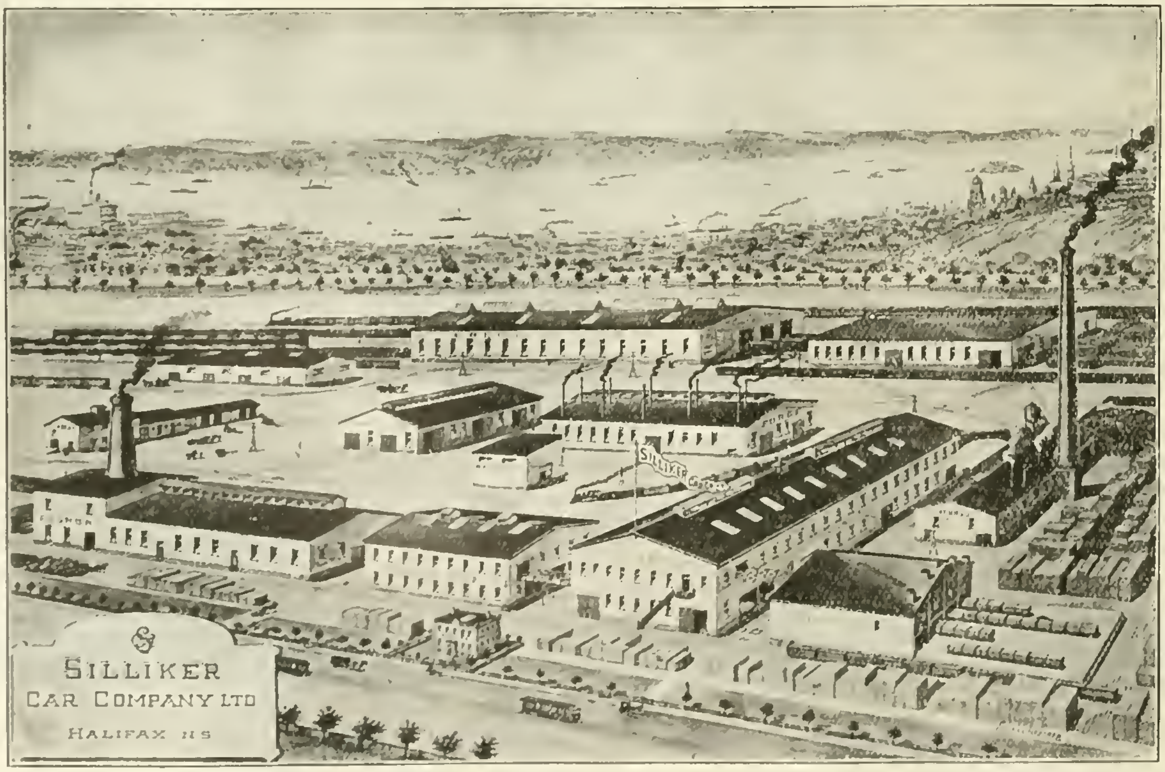


HEAVY FORGINGS AND CASTINGS

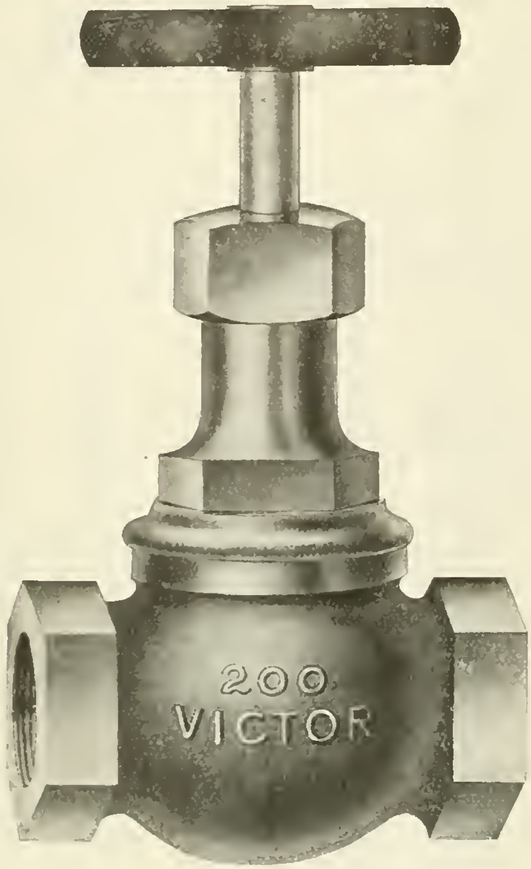
RAILWAY, FREIGHT AND PASSENGER CARS OF ALL KINDS

STEAM RAILWAY STATISTICS FOR YEAR ENDED JUNE 30, 1910

In the following table the column headed gross earnings includes passenger and freight earnings, as well as miscellaneous earnings; the next four columns give the operating expenses classified under their various headings, while the last gives the net earnings, which is arrived at by deducting the totals of the four columns referred to from the figures in the gross earnings column. The minus mark (—) before figures in the net earnings column shows that there was a deficit in the operations of the line to the extent of the figures given. The numbers in brackets—thus (1)—after the name of a railway refer to notes on page 29. The cents have been omitted in all cases, and the figures in the totals show the aggregate earnings, etc., including the cents, omitted from the detailed items.

Name of Railway	Mileage	Passenger Earnings	Freight Earnings	Gross Earnings	Maintenance of Way and Structures	Maintenance of Equipment	Traffic Transportation Expenses	General Expenses	Net Earnings
Alberta Ry. & Irrigation Co.	111.82	$ 111,202	$ 244,292	$ 377,453	$ 74,957	$ 37,508	$ 105,470	$ 22,517	$ 136,999
Algoma Cent. & Hudson Bay (2)	89.64	20,605	233,546	396,079	77,420	41,712	150,826	18,037	108,082
Atlantic, Quebec & Western (3)	35.00	5,663	10,887	16,571	5,906	2,634	13,294	4,608	—9,872
Atlantic & Lake Superior (3)	100.00	33,626	47,806	85,921	27,922	16,653	33,200	7,392	752
Bay of Quinte (4)	89.37	40,088	121,792	167,735	24,138	20,293	76,897	11,357	35.046
Bedlington & Nelson (5)	15.30	160	1,050	1,210	4,464	316	648	546	—4,764
Bessemer & Barrys Bay	5.00	....	3,710	3,710	2,092	432	4,204	264	—3,283
Brandon, Sask. & Hudson Bay	69.45	33,338	41,990	75,465	33,189	8.614	49,537	3,732	—19,610
British Yukon (6)	90.32	78,283	206,547	328,994	40,543	14,048	51,588	11,483	212,329
Brockville, Westport & N.W. (32)	45.00	32,199	27,653	59,863	10,533	2,855	17,876	6,645	21,952
Bruce Mines & Algoma	17.28	....	....	....	....	....	....	....	....
Canada Southern (23)	382.19	2,634,309	6,167,553	8,833,944	1,045,650	1,007,292	3,022,744	137,499	3,720,756
Canadian Gov't Railways—									
Intercolonial (7)	1,450.37	3,234,156	6,181,392	9,515,545	1,755,106	1,867,711	4,985,731	206,718	700,277
Prince Edward Island	269.33	168,175	148,926	318,031	121,811	79,120	212,866	15,415	—111,182
Canadian Northern (8)	3,281.30	2,631,993	10,105,206	13,833,061	2,047,830	1,761,641	5,022,365	362,671	4,638.551
Canadian Northern Ont. (8)	342.20	151,944	341,212	510,989	101,880	73,568	274,672	27,101	33,765
Canadian Northern Que (8)	348.67	283,002	647,448	940,646	233,408	110,697	505,681	37,501	53,357
Canadian Pacific (9).	10,000,00	27,557,231	59,243,881	88,317,122	13,653,938	12,567,493	27,861,838	1,684,269	30,549,581
Carlton & Grenville	13.00	1,287	64	2,143	1,857	1,033	1,769	42	—2,557
Cape Breton	31.00	5,000	2,271	7,293	5,522	1,096	7,797	2,402	—9,524
Caraquet (10)	84.78	18,309	34,961	53,271	19,136	7,422	22,216	4,463	31
Central Ontario (11)	149.73	89,382	209,761	306,796	54,889	16,854	89,198	7,911	137,942
Crows Nest Southern (5)	74.18	23,774	133,340	158,483	89,308	23,276	77,000	6,943	—38,046
Cumberland Ry. & Coal Co. (12)	32.00	16,207	32,729	48,937	12,793	3,365	27,224	....	5,553
Dominion Atlantic (13)	278.87	397,509	437,189	837,377	113,007	61,529	291,995	47,421	323,423
Eastern British Columbia	16.00	4,072	25,526	29,659	10,319	5,407	12,276	1,017	639
Edmonton, Yukon & Pacific (8)	4.50	....	....	....	....	....	....	....	....
Elgin & Havelock	28.00	3,908	6,686	10,594	5,765	371	4,820	802	—1,166
Esquimalt & Nanaimo (9)	78.00	....	....	....	....	....	....	....	....
Grand Trunk (15)	3,094.96	10,772,106	20,244,172	31,342,500	4,292,685	5,985,397	11,485,579	771,834	8,807,004
G.T.R. (Canada Atlantic) (15)	456.26	460,425	1,532,650	2,035,805	382,558	253,289	972,931	56,572	368,372
Grand Trunk Pacific (14)	....	....	....	....	....	....	....	....	....
Halifax & South Western (8)	369.81	209,403	204,491	412,013	87,100	47,913	191,172	19,130	66.696
Hampton & St. Martins	30.00	6,139	12,469	18,838	6,150	1,025	7,414	1,083	3,165
Hereford (16)	52,18	18,205	47,055	66,802	34,102	16,127	43,066	3,608	—30,102
International of N B. (17)	80.00	....	....	....	....	....	....	....	....
Irondale, Bancroft & Ottawa	48.00	7,310	20,449	27,990	12,269	3,255	11,253	3,623	—2,411
Inverness Ry. & Coal Co. (8).	60.91	22,487	168,808	192,602	30,278	22,845	44,203	7,303	87,972
Kaslo & Slocan (5).	23.37	3,026	14,964	17,991	16,248	5,072	12,938	698	—16,967
Kent Northern	34.00	8,303	9,043	17,346	3,625	250	5,625	1,790	6,056
Kettle River Valley	18.50	415	1,839	2,254	2,499	901	1,829	676	—3,652
Kingston & Pembroke (31)	103.40	59,325	130,940	185,922	55,084	24,084	71,253	9,545	25,954
Klondike Mines	31.81	11,553	41,806	54,032	17,217	4,564	20,516	10,767	965
Lake Erie & Detroit River (18)	198.81	155,437	2,295,157	2,457,620	273,589	322,842	853,265	50.885	957,035
Liverpool & Milton	6.00	462	10,179	10,641	1,360	875	4,413	595	3,395
London & Port Stanley	23.66	39,524	83,995	124,228	18,827	17,139	85,351	4,604	—1,695
Lotbiniere & Megantic	30.00	6,159	28,955	35,487	7,793	4,540	10,368	9,773	2,994
Magnetawan River	1.91	....	....	....	....	....	....	....	....
Manitoulin & North Shore (2)	22.70	3,063	76,432	81,012	11,214	8,564	21,667	7,326	32,239
Maritime Ry. & Coal Co. (19)	15.00	7,834	58,017	65,869	7,930	6,131	27,018	2,741	22,047
Massawippi Valley (20)	35.46	68,443	128,667	197,963	31,510	20,468	92,156	4,346	49,482
Midland of Manitoba (5)	91.77	8,439	61,778	70,272	37,216	8,612	35,655	3,620	—14,832
Montreal & Atlantic (9)	163.40	202,626	712,832	933,112	261,453	132,945	399,318	26,479	112,905
Montreal & Province (15)	58.60	54,740	48,667	105,041	28,612	1,002	32,796	1,903	40,726
Montreal & Vermont Jct. (15)	23.60	64,349	39,835	104,276	12,211	889	43,234	4,313	43,627
Moncton & Buctouche	32.00	9,772	18,430	28,202	10,203	1,813	8,519	2,282	5,383
Morrissey, Fernie & Michel (21)	10.85	10,681	99,841	110,522	10,825	14,381	35,413	18,224	31,677
Napierville Jct. (26)	27.06	5,062	57,234	62,381	5,340	6,697	21,126	1,655	27,560
Nelson & Fort Sheppard (5)	55.42	29,540	42,055	74,483	69,716	7,698	39,309	3,478	45,719
New Brunswick Coal & Ry. Co. (22)	58.00	15,425	41,573	65,543	20,166	15,919	32,144	9,610	—12,297
New Brunswick Southern	82.35	23,187	20,939	44,356	33,975	10,278	27,577	4,906	—32,381
New Brunswick & P.E.I.	36.00	9,738	21,046	30,888	9,548	4,890	10,327	1.353	4,768
New Westminster Southern (5)	24.10	14,547	24,922	39,605	12,438	2,925	9.745	1,222	13,273
North Shore (24)	8.63	199	3,269	3,468	949	120	2,220	64	113
Nosbonsing & Nipissing	5.50	....	....	....	....	....	....	....	....
Nova Scotia Steel & Coal Co.	12.50	1,893	3,058	4,951	3,692	1,037	5,765	....	—5,544
Orford Mountain	....	5,739	16,780	22,609	13,415	3,068	14,851	2,523	—11,259
Ottawa & New York (23)	56.90	72,873	76,462	152,150	45,867	17,151	80,837	6,798	1,495
Phillipsburg Ry. & Quarry Co.	6.00	....	5,492	5,492	....	....	....	3,110	2,382
Pontiac & Renfrew (32)	4.25	....	....	....	....	....	....	....	....

(Continued on page 29)



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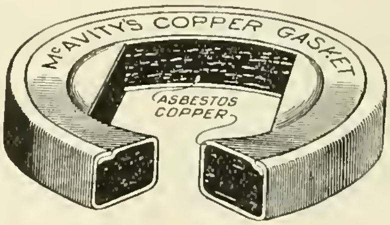

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G. W. VAUX, Gen. Passenger Agent, MONTREAL

Steam Railway Statistics for the Year Ended June 30, 1910—*(Continued from page 27)*

Name of Railway	Mileage	Passenger Earnings	Freight Earnings	Gross Earnings	Maintenance of Way and Structures	Maintenauce of Equipment	Traffic and Transportation Expenses	General Expenses	Net Earnings
Princeton Branch (W.C. Ry.)	5.10	7,429	15,038	22,467	2,808	1,659	5,931	367	11,700
Quebec Central..........................	222.00	367,967	729,873	1,104,682	162,970	133,524	395,146	68,914	345,127
Quebec Ry. Light & Power Co.(25)	27.00	14,041	44,028	62,787	6,092	5,147	26,997	10,061	14,488
Quebec & Lake St. John (8)..........	286.50	237,473	335,550	581,061	118,416	118,536	277,568	32,455	34,144
Quebec, Montreal & Southern (66)	191.91	120,021	158,123	278,471	65,217	52,138	122,186	15,760	23,167
Red Mountain (5)	9.59	3,867	11,014	15,446	16,612	1,747	22,400	1,869	—27,283
Rutland & Noyan (25)..................	3.39	9,421	4,166	13,587	1,358	1,652	5,947	459	4,169
Salisbury & Albert........................	45.00	11,790	22,471	35,476	13,510	5,173	14,189	1,670	932
Schomberg & Aurora (8)	14.40	4,659	5,527	10,186	8,377	753	3,484	348	—2,777
Stanstead, Shefford & Chambly(14)	43.00	36,739	41,098	78,135	22,568	2,575	45,147	1,875	6,169
St. Clair Tunnel (14)	2.25	....	287,004	287,004	42,051	13,586	54,565	3,197	173,804
St. Lawrence & Adirondack (25)	46.12	194,697	320,022	515,101	68,516	34,051	184,321	7,095	221,114
Spokane & British Columbia	3.70	99	3,157	3,274	2,508	776	1,238	639	—1,887
Sydney & Louisburg (27).............	62.86	19,531	293,133	315,101	58,885	87,437	131,410	16,070	21,294
Temiscouata................................	113.00	76,646	151,270	231,625	51,936	26,994	75,286	14,658	62,748
Temiskaming & N. Ontario (28)	266.14	693,657	966,707	1,757,065	337,001	140,746	594,827	69,634	594,855
Thousand Islands.........................	6.33	11,913	23,060	37,561	5,270	2,904	19,185	3,549	6,450
Toronto, Hamilton & Buffalo (29)	80.15	290,014	719,850	1,018,417	122,993	86,485	354,539	24,544	.429,845
Vancouver Copper Co. (32)..........	12.00	....	....	....	....	....	....	....	....
Vancouver, Victoria & Eastern (5)	219.40	196,433	456,237	637,932	265,739	66,276	315,206	17,862	—27,153
Victoria & Sidney (5)	16.26	20,793	25,465	46,565	7,256	1,840	15,356	2,832	19,298
Victoria Term. Ry. & Ferry Co.(5)	1.14	2,034	2,163	4,220	539	135	1,149	400	1,994
Wabash (30)	....	667,447	1,726,648	2,399,685	202,768	474,249	1,026,115	89,455	607,105
Wellington Colliery Co.................	10.75	3,245	70,252	73,498	9,893	36,257	17,347	....	10,000
York & Carleton...........................	10.50	2,419	3,448	5,868	1,455	165	2,195	50	2,003
Totals..................................	24,724.46	52,956,218	117,494,484	173,956,217	27,035,603	26,002,301	63,294,346	4,073,188	53,550,776

Notes to Steam Railway Statistics.

(1) The Alberta Ry. and Irrigation Co.'s lines include the lines of the Alberta Ry. and Coal Co., and the St. Mary's River Ry. It has trackage rights over 1.60 miles of C.P.R. tracks.

(2) The Algoma Central and Hudson Bay Ry. and the Manitoulin and North Shore Ry. are owned by the Lake Superior Corporation.

(3) The Atlantic, Quebec and Western Ry. has under construction an additional 70 miles. It has trackage rights over 1.75 miles of the lines of other companies. The Atlantic and Lake Superior Ry. has been acquired by the Quebec Oriental Ry., a subsidiary of the A. Q. & W. Ry.

(4) The Bay of Quinte Ry. has trackage rights over 19 miles of another company. The Thousand Islands Ry. is also owned by the same interests. Since the date covered by the statistics the B. of Q. Ry. has been acquired by the Mackenzie-Mann interests.

(5) The Great Northern Ry. owns and operates the following lines in Canada: Brandon Saskatchewan and Hudson Bay Ry.; Midland Ry. of Manitoba; Crow's Nest Southern Ry.; Kaslo and Slocan Ry.; Red Mountain Ry.; Nelson and Fort Sheppard Ry.; Vancouver, Victoria and Eastern Ry. and Navigation Co.; New Westminster Southern Ry.; Victoria Terminal Ry. and Ferry Co.; and Victoria and Sidney Ry. The Midland Ry. of Manitoba has trackage rights over 0.99 mile of another company's line. The Bedlington and Nelson Ry. mileage includes 8.67 miles operated under lease. The Nelson and Fort Sheppard Ry. mileage includes 5.42 miles of leased lines. The New Westminster Southern Ry. and the Vancouver, Victoria and Eastern Ry. have each trackage rights 1.48 miles over the Fraser River Bridge owned by the British Columbia Government.

(6) The British Yukon Ry. is the Canadian portion of the line operated as the White Pass and Yukon Route, connecting with steamers on the Yukon River to Dawson in the summer, and with stages in the winter.

(7) The Intercolonial Ry. mileage does not include the Windsor branch 32 miles, operated by the Dominion Atlantic Ry. It has 16 miles of second track. It operates its trains into Montreal over the G.T.R., its trackage rights over foreign lines being 40.36 miles.

(8) Mackenzie, Mann & Co. (Ltd.), interests own or control and operate the following railways: Canadian Northern Ry.; Canadian Northern Ontario Ry.; Canadian Northern Quebec Ry.; Edmonton, Yukon and Pacific Ry.; Halifax and South Western Ry.; Inverness Ry. and Coal Co.; Quebec and Lake St. John Ry. and the Schomberg and Aurora Ry. The Canadian Northern Ry. figures include the statistics relating to traffic over the Manitoba Ry., which it operates under a lease from the Government of Manitoba. The lines included in the Manitoba Ry. are the Northern Pacific and Manitoba Ry., Winnipeg Transfer Ry., Portage and North Western Ry., and Waskada and North Eastern Ry. Its earnings, etc., also include those of the Qu'Appelle, Long Lake and Saskatchewan Ry., and of the Edmonton, Yukon and Pacific Ry., which report mileage separately. The Canadian Northern Quebec Ry. has trackage rights over 58.65 miles of other companies' lines. The Canadian Northern Ontario Ry. has trackage rights over 3.80 miles into the Union Station Toronto. The Halifax and South Western Ry. has 2.30 miles of trackage rights over the Intercolonial Ry. into Halifax.

(9) The Canadian Pacific Ry. mileage includes 2.909.5 miles of main lines owned, 3.020.60 miles of branches and spur lines owned; 2,576.10 miles of lines of proprietary companies; 1,309.80 miles of lines operated under lease; 184 miles of lines operated under contract, and 37.30 miles of lines operated under trackage agreements. It has 397.50 miles of second track, on lines owned, and 155.90 miles on leased lines. The C.P.R. returns include the earnings and expenses of the Esquimalt and Nanaimo Ry. The lines operated by the C.P.R. include the Montreal and Atlantic Ry., which has 6.40 miles of second track, and a leased line—Lake Champlain and St. Lawrence Junction Ry. The C.P.R. also owns with the New York Central and Hudson River Rd., the Toronto, Hamilton and Buffalo Ry.

(10) The Caraquet Ry. operates the Gulf Shore Ry.

(11) The Central Ontario Ry. operates the line owned by the Marmora Ry. and Mining Co., (formerly the Ontario, Belmont and Northern Ry.).

(12) The Cumberland Ry. and Coal Co. also owns the Springhill and Oxford branch, 14 miles which is not being operated.

(13) The Dominion Atlantic Ry. operates under agreement the Windsor branch of the Intercolonial Ry., 32 miles, which is included in the D.A.R. mileage, but not in that of the I.C.R. It has also trackage rights over 14.42 miles of other lines.

(14) Grand Trunk Pacific Ry. is reported to be under construction, although it is being operated between Winnipeg and Edmonton.

(15) The G.T.R. mileage includes the Buffalo and Lake Huron Ry., 161.30 miles, leased and partly owned. The G.T.R. figures include the earnings, etc., of the Magnetawan River Ry. It has 706.48 miles of second track, and has trackage rights over other lines totalling 13.71 miles. It also owns the Canada Atlantic Ry., and the St. Clair Tunnel Co., which report separately, and the G.T. Pacific Ry., which reports 945 miles of track laid, but does not report any earnings or expenses for the year under review. It also controls the Central Vermont Ry., which operates the Montreal and Province Line; the Montreal and Vermont Jct. Ry. and the Stanstead Shefford and Chambly Ry. The Canada Atlantic Ry. mileage includes the Ottawa, Arnprior and Parry Sound, Ry.; it also operates under lease the Central Counties Ry., and the Pembroke Southern Ry., which report mileage separately.

(16) The Hereford Ry. is owned and operated by the Maine Central Rd. which also owns the Princeton branch, Washington County Ry.

(17) The International Ry. of New Brunswick was originally known as the Restigouche and Western Ry. Although 80 miles are reported completed it had not been opened for public traffic.

(18) The London and Port Stanley Ry., practically owned by the City of London, Ont., is leased to the Lake Erie and Detroit River Ry., which is owned

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(From Daily Papers)

"Wednesday night B——— forgot to deliver an order to hold Eastbound Passenger Train No. 6, and only the fact that the Electric Headlight of the oncoming Passenger train was seen at a great distance by the Engineer of the Westbound Freight prevented a head end collision in the ——— Canyon near ———. The warning light was seen in time to enable the freight to get back on to the siding at ———."

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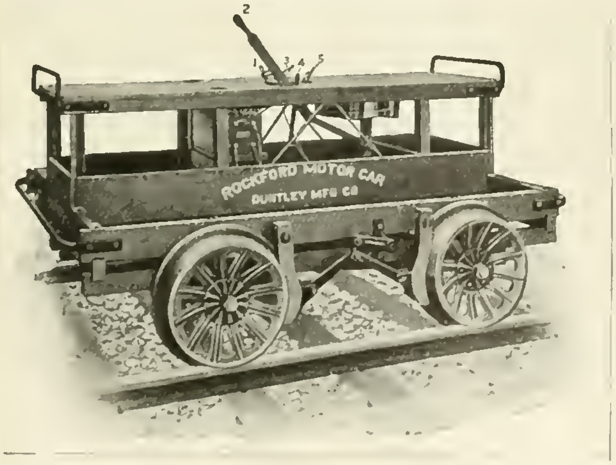

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and operated by the Pere Marquette Rd., a U.S. company. The P.M.R. has trackage rights over 130.57 miles of other Canadian lines

(19) The Maritime Ry., Coal and Power Co., owns the line formerly owned by the Canada Coals and Ry. Co.

(20) The Massawippi Valley Ry. has trackage rights over 2.95 miles of another company's lines. It is operated by the Boston and Maine Rd.

(21) The Morrissey, Fernie and Michel Ry. includes 5.03 miles of leased lines. It is owned by the Crow's Nest Pass Coal Co.

(22) The New Brunswick Ry. and Coal Co. owns and operates the old Central Ry. of New Brunswick. It is operated by a commission appointed by the New Brunswick Government.

(23) The New York Central and Hudson River Rd. owns the Ottawa and New York Ry., and the St. Lawrence and Adirondack Ry. It also controls the Toronto, Hamilton and Buffalo Ry.; the Rutland Rd., which owns the Rutland and Noyan Ry.; and the Michigan Central Rd., which controls the Canada Southern Ry. This line has 226.18 miles of second track on main lines, and 16.80 miles of second track in branches and spurs. The Ottawa and New York Ry. operates 1.90 miles under trackage rights. The St. Lawrence and Adirondack Ry. mileage includes 13.30 miles of leased lines, and it has also trackage rights over 8.92 miles of other companies lines.

(24) The North Shore Ry. owns the line formerly known as the Beersville Coal and Ry. Co.'s line.

(25) The Quebec Montmorency and Charlevoix Ry. reports as to the section of the Quebec Ry., Light and Power Co.'s lines upon which steam trains are operated. There are 6.00 miles of second track and three miles operated under contract.

(26) The Quebec, Montreal and Southern Ry., includes the old East Richelieu Valley Ry., the United Counties Ry. and the South Shore Ry. It is owned by the Delaware and Hudson Co., which also owns the Napierville Jct. Ry.

(27) The Sydney and Louisburg Ry. is owned by the Dominion Coal Co. It operates 1.09 miles of line owned by a proprietary company and has trackage rights over 1.20 miles of other lines.

(28) The Temiskaming and Northern Ontario Ry. is owned by the Province of Ontario and is operated by a Commission.

(29) The Toronto, Hamilton and Buffalo Ry., is owned by the New York Central and Hudson River Rd., and the C.P.R. It has 2.04 miles of second track and has trackage rights over 4.36 of foreign lines.

(30) The Wabash Rd. does not own any track in Canada, but operates over G.T.R. tracks under lease.

(31) The gross earnings of the Kingston and Pembroke Ry. are given as less than the totals of the figures given in the columns for passenger and freight earnings. In the column of the statistical tables for other earnings from operation the figures for the company are preceded by "Cr." and the amount of the figures, $4,342, deducted from the total freight and passenger earnings give the total gross earnings.

(32) The Bruce Mines and Algoma Ry., Pontiac and Renfrew Ry., and Vancouver Copper Co.'s line are not being operated

◆

Norton Griffiths and Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $1,000,000, and office at Winnipeg, to carry on the business of general contractors, for the construction and equipment of tramways, docks, harbors, piers wharves, canals, etc., and to assist in the promotion of companies for their operation.

Railway Commissioners' Traffic Orders.

Summaries of other traffic orders are given on another page under "Orders by Railway Commissioners":—

Rates on Rice from Montreal.

12275. Nov. 17, 1910.—Re application of Mount Royal Milling & Manufacturing Co., of Montreal, complaining (a) that the G.T.R. and C.P.R. unjustly discriminate against rice manufactured in the province of Quebec by giving preferential rates to cleaned rice from Great Britain, arriving at Montreal by ocean steamships, and reshipped from Montreal wharf in competition with product of complainant's mills to the same Canadian destinations; (b) that the rates on cleaned rice from Montreal are unreasonably high in comparison with the rates from Boston to the said destinations in Canada. through Montreal:

It is ordered that rice, not otherwise specified, in packages, in less than carloads, be included in the first supplement to the Canadian Classification no. 15 at fourth class, instead of at third class, as at present classified, on the understanding that the said supplement be submitted for the approval of the Board within two weeks following the issuing of this order.

Rates on British Columbia Lumber.

12290. Sept. 8, 1910.—Re application of Fullerton Lumber & Shingle Company, Ltd., of Vancouver, B.C.: (1), complaining of the rate of 6c. per 100 lbs. charged by the G.N.R. on lumber from Tynehead to Cloverdale, B.C., 7.1 miles, as excessive and unreasonable; (2), asking that order 6612, Feb. 23, 1909, be varied so as to include Winnipeg in the list of places covered by the joint tariff issued by the G.N.R., pursuant to the provisions of the order; and (3), complaining of the practice of the C.P.R. and G.N.R. regarding minimum weight for carloads. It is ordered:

1. That the Great Northern Ry. be directed to adopt, not later than Jan. 1, 1911, the rates and minimum weights of the C.P.R. Special Mileage Tariff, C.R.C. no. W. 1112, effective Feb. 20, 1909, to apply on lumber, etc., on the New Westminster Southern Ry., and also on the other railways owned, controlled or operated by it in B.C., to the extent required by the mileages of the said railways.

2. That the application to vary the order 6612, to include Winnipeg in the list of places covered by the joint tariff issued by the G.N.R. (Vancouver, Westminster & Yukon Ry.), pursuant to the provisions of the said order, be refused.

3. That leave be granted the complainant to file another application with the Board regarding the practice of the C.P.R. and the G.N.R. in connection with minimum weight for carloads.

Export Rates on Lumber.

12391. Sept. 20, 1910.—Re application of Canadian Lumbermen's Association and Montreal Board of Trade Transportation Bureau, complaining that the railway companies in increasing the export rates on lumber which previously existed, have not complied with order 10528, April 19, 1910; and applying for an order directing the railway companies to carry out the provisions of the said order and issue tariffs on lumber, for export, to comply therewith:

It is ordered that the C.P.R., the G.T.R. and the C.N.Q.R. publish and file tariffs, to be made effective not later than Jan. 1, 1911, reducing the export rates to Montreal on lumber from points in the Province of Quebec, north and east of Montreal, so that the same difference shall exist between the present domestic rates on lumber to Montreal and the said rates for export, as existed between the old domestic rates and the old rates for export.

W. E. & L. S. R. Ry. Passenger Fares.

12308. Nov. 16.—Re application of residents of Kingsville, Cottam and Essex, Ont., alleging unjust discrimination in passenger fares by the Windsor, Essex and Lake Shore Rapid Ry.:

It is ordered that the discrimination complained of as to the fares between Cottam and Essex, and Cottam and Kingsville will be removed by advancing the one-way fare between Cottam and Essex from 10c to 15c, and reducing the one-way fare between Cottam and Kingsville from 20c to 15c.

◆

Cumberland Railway and Coal Co.

The control of this company has been acquired by interests connected with the Dominion Steel Corporation, and at a meeting held Dec. 1, J. H. Plummer, President D.S.C., was elected President, and H. McInnes, Vice President of the C. Ry. and Coal Co.

The C. Ry. and Coal Co. owns a number of collieries and a coal handling plant at Springhill, N.S., a railway of 32 miles extending from the collieries to Springhill Junction on the Intercolonial Ry., and a branch of 14 miles from the collieries to Oxford on the I.C.R. Oxford and New Glasgow branch, which has not been used for traffic for some years. It has also 16 miles of yard track and sidings, which, with the main line, is laid with steel rails. There are only a few small bridges and culverts on the line. It owns six locomotives, seven passenger cars, 520 freight cars, and two cars used for the company's service. It has outstanding $1,000,000 of common stock, and received $39,850 subsidy from the Dominion Government and $173,650 from the Nova Scotia Government, there being unearned $4,950 of the Dominion subsidy voted, and $10,800 of the subsidies voted by the Nova Scotia Legislature. The net earnings for the year ended June 30, 1909, the latest figures available, were $53,322.82.

◆

C. P. R. Pitch Tank Cars.

The C.P.R. is having built in the U.S. 60 steel tank cars, specially designed for carrying pitch. They are of 50-ton capacity, with steel underframes and standard trucks.

The tank shell is double rivetted and strong throughout. The pitch will be admitted to the tank through the dome opening in the top, which has a cover without screw heads or parts liable to be clogged with the pitch.

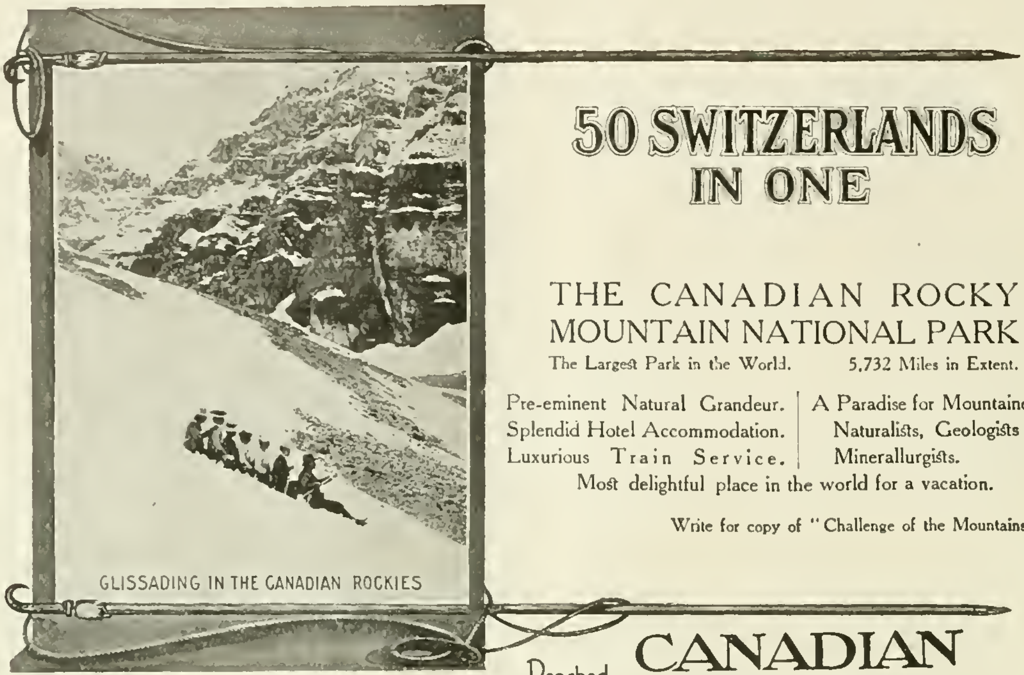
The discharge valve is simply constructed to provide an easy outflow with as little obstruction as possible, and is made to suit a 4 in. pipe connection for carrying away pitch. The discharge valve is also steam jacketed to assist in the rapid outflow of the pitch.

The heating system is designed to heat the pitch very rapidly, and all fittings in connection therewith are located on the outside of the tank, where they can be easily got at without disturbing the contents of the tank.

The tanks have good provision for sealing them against loss of contents. They are fitted with friction draw gear, and hand and air brakes, and should on the whole prove very serviceable for the purpose for which they are designed.

◆

The Imperial Engineering Co., Ltd. has been incorporated under the Dominion Companies Act, with a capital of $100,000, and office at Montreal, to carry on a general engineering business, and to manufacture and deal in machinery, air brakes, tools and machinery supplies.



GLISSADING IN THE CANADIAN ROCKIES

50 SWITZERLANDS IN ONE

THE CANADIAN ROCKY MOUNTAIN NATIONAL PARK

The Largest Park in the World. 5,732 Miles in Extent.

Pre-eminent Natural Grandeur.
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Luxurious Train Service.

A Paradise for Mountaineers Naturalists, Geologists and Mineralurgists.

Most delightful place in the world for a vacation.

Write for copy of "Challenge of the Mountains."

Reached by the **CANADIAN PACIFIC RAILWAY**

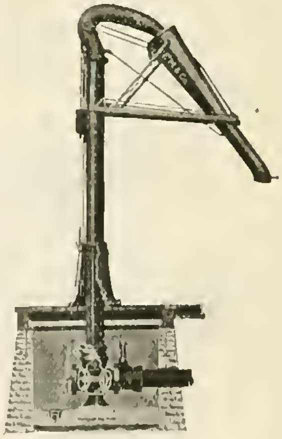
R. L. THOMPSON,
District Passenger Agent,
TORONTO

Or any agent of the company.

Sheffield-Johnson Flexible Spout Standpipe Installed on C.P.R. at St. Clet, P.Q.

SHEFFIELD-JOHNSON

The Ideal Standpipe



Showing Telescopic Spout Lowered.

It meets with the approval of practical railway men and its popularity is assured. It has a range of flexibility of 5 ft. or over as desired and the spout can be introduced directly into the highest as well as the lowest tender. Nothing could be simpler, more easily operated or more convenient than the type of telescopic spout shown. This, in connection with our horizontal main valve and other special features, makes a combination that is far ahead of all other standpipes on the market. Locks automatically and positively parallel with tracks when not in use. Revolves in complete circle. Operated entirely by one man. Self-draining—cannot freeze. Equipped with relief valve.

The Canadian Fairbanks Co., Limited

Fairbanks Scales, Fairbanks-Morse Gas Engines,

MONTREAL TORONTO ST. JOHN, N. B., WINNIPEG SASKATOON CALGARY VANCOUVER

C.P.R. Betterments, Construction, Etc.

Dominion Atlantic Ry.—C.P.R. engineers have completed an inspection of the bridges on the D.A.R. It is proposed to strengthen a number so as to enable heavier trains to be run and to build a new bridge near Digby, on the location made by the old Western Counties Ry. This will enable the company to abandon a portion of the present route which includes two bridges, and will give a shorter and better approach to Digby. A deputation waited on the management at Montreal, Dec. 7, in connection with a proposal to extend the line to Bear River.

St. John Improvements.—C. Murphy, General Superintendent of Transportation, on a recent visit to St. John, N.B., stated that an announcement would shortly be made with respect to the plans for utilizing the property recently acquired on Mill and Main streets.

St. Stephen, N.B.—Press reports from Calais, Me., state that some move is being made in that vicinity towards the extension of the C.P.R. line, now terminating in St. Stephen, N.B., to Calais, and thence to Mattawamkeag, Me. The company's yard accommodation at St. Stephen has been largely increased and the tracks now terminate at the landing place, opposite Calais.

Bridge at St. John's, Que.—Five spans are reported to have been completed by the Dominion Bridge Co., of the new bridge across the Richelieu River at St. Johns, Que. It was expected to have the bridge completed by Dec. 31.

Place Viger Improvements, Mantreal.—The steel work of the viaduct to carry Notre Dame St., across the C.P.R. lines at Place Viger station is being erected. The viaduct will be 1,006 ft. long and 52 ft. wide. Except where the three tracks entering the station will pass the space under the viaduct will be utilized as freight sheds. The station building itself will be four stories, instead of two, as originally proposed. The steel work is to be started at once, and it is expected that the building will be completed by June 1.

Windsor Street Station, Montreal.—Rapid progress is being made with the erection of the additions to this station, and it is expected that the entire work will be completed by the end of 1912. It is reported that over 1,000 tons of steel has been got into position, and that the whole of the steel skeleton will be completed by April 1.

Lachine Bridge.—Replying to a question in the House of Commons, Dec. 6, the Minister of Railways stated that he had discussed with the President of the C.P.R., the question of building a traffic addition to the bridge across the St. Lawrence River, at Lachine, now being rebuilt by the C.P.R. He had been informed that a traffic bridge could be built separately for less cost than would be required to make over the railway bridge as suggested.

Hawkesbury to Cornwall.—It was unanimously decided at a meeting held recently to gather all the necessary information as to routes and traffic possibilities for a line from Cornwall to Hawkesbury, and to ask the C.P.R. to build and operate it.

Ottawa Tunnel Proposals.—The Minister of Railways told a deputation from Kingston, Ont., Dec. 8, that the Government not been asked to consider the proposal to close up a portion of the Rideau Canal in Ottawa, in order that the C.P.R. might utilize it as a tunnel. It would be a pretty large order to ask the Government to do this, and without committing the Government in any way, he would say that there was a history about the old canal that would make him not very ready to interfere with it. If a company came and offered an alternative route it might be a different matter. The Ottawa city council has referred the whole matter back to the Board of Control for consideration.

Campbellford, Lake Ontario and Western Ry.—The route plan approved by the Minister of Railways shows a line starting from west of Cobourg, Ont., and running north of the G.T.R. through Port Hope and practically paralleling until near Newcastle, when a turn is taken northerly touching the north eastern corner of Newcastle townsite, and then continuing easterly, to Bowmanville, then south-westerly through that town, and on to the boundary of Darlington and Whitby townships, where the route again approaches the G.T.R. The route then takes a northerly turn, runs through Oshawa, touches the north east corner of Whitby townsite, and then south-westerly to the boundary of Scarborough and York townships, where a northerly turn is taken to a junction with the Toronto, Montreal line east of the Don River.

The Georgian Bay and Seaboard Ry.—has been built from Victoria Harbor to Coldwater Jct., on the Toronto-Sudbury line, and construction is being proceeded with between Coldwater Jct., and Bethany siding on the C.P.R. Toronto-Montreal line. The original route map approved by the Minister of Railways, showed a line through Orillia and Lindsay to Peterboro, but a revised location has been approved from Lindsay to Bethany Village, and a plan showing the location between Bethany Village and the Toronto-Montreal line has been filed and is awaiting approval. The route plan shows that the Lindsay and Bobcaygeon Ry. will be used in Lindsay town, and south of the G.T.R. tracks, and the route will be south easterly through Ops and Manvers tps., reaching the Toronto-Montreal line just inside the boundary of Cavan tp. The principal bridge on the line will be that across Distillery Creek, Lindsay. The general contract, for the sections of the line now under construction, was let to the Toronto Construction Co., and sub-contracts have been let to Johnson Bros., for the section between Lorneville and Cambray, and to Perry and Stewart, for the section between Cambray and Lindsay.

West Toronto Yard Extensions, etc.—Some preliminary work is being done in preparation for the building of the new bridge across the Weston road at the West Toronto station. Preparations are also being made for rebuilding the station, which is not only inconveniently situated for the public but the accommodation for the company's staff is utterly inadequate. In connection with the yard extensions towards Lambton, the Board of Railway Commissioners has made an order for the building of a 32 ft. subway under Jane St., instead of the 26 ft. one proposed by the company.

Additional Western Lines—The C.P.R. is applying to the Dominion Parliament for authority to build the following lines, from or near Wilkie on its Pheasant Hills branch southerly and southeasterly to a junction with its Moose Jaw branch in tp. 30, r. 16 or 17, w. 3 m. Sask.; from at, or near Kerr Robert on its Moose Jaw branch, northeasterly and easterly to a junction with the line described first mentioned in tp. 38 or 39, r. 19 or 20, w. 3 m., Sask.

Hamiota to Birtle.—The route of this projected line will be north westerly from Hamiota, crossing the Canadian Northern Ry. near Debbar, and on to Birtle, Man., 32.7 miles. We are advised that the company has not yet reached a definite decision as to when this line will be built.

Bulyea Branch.—The Board of Railway Commissioners has approved of the revised location of this branch from mileage 0 on the Pheasant Hills branch to mileage 18.49, in sec 33, tp. 20, range 22, west of the second meridian, Sask.

Edmonton Station, Etc.—We are officially advised that the company's engineering department is considering plans for the yards and station at Edmonton Alta. No construction will be put in hand until after the completion of the bridge across the North Saskatchewan River which it was expected would be completed by the end of 1910.

The company has purchased a building in the city, which, after renovation, will be occupied as offices by the company's ticket, telegraph and city freight departments, as well as by the Dominion Express Co.

Kootenay Central Ry.—The Board of Railway Commissioners is being asked for a recommendation to the Governor-in-council to sanction a lease of the K.C.R., now under construction, to the C.P.R., for 999 years from Jan. 1, 1911. The route plan for this projected line was approved by the Minister of Railways, Dec. 1.

Westminster Jct., B.C.—A press report states that the C.P.R. has acquired an area of 1,800 acres of land at Westminster Jct., B.C., for terminal purposes.

Esquimalt and Nanaimo Ry.—The extension of the line under construction from Wellington to Alberni, has been completed for the first 30 miles and opened for traffic. There are stations at Nanoose Bay, McBride Jct., Coombs and Cameron Lake. For the present one train is run each way on Tuesdays, Thursdays and Saturdays.

Good progress is being made with the grading of the remaining section of the line into Alberni, and it is stated that the contractors expect to have the work completed to Alberni by Jan. 31, that track laying will be gone on with at once, and that the whole line will be ready in April. (Dec., 1910, pg. 1025.)

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Board of Railway Commissioners.

The fifth annual report of the Board of Railway Commissioners, just issued, covers the year ended Mar. 31, 1910. After noticing the amendments made in the Railway Act last session of Parliament, the report states that the Board held 78 public sittings, at which 533 applications were heard. The places at which the Commissioners held public sittings were:—Ottawa, Toronto, Fort William, Sudbury, Bracebridge, Ont.; Montreal, Que.; Winnipeg, Brandon Man.; Regina, Saskatoon, Prince Albert, Sask.; Edmonton, Calgary, Alta.; Vancouver, Victoria, Nelson, B.C. A few of the more important matters which came before the Commissioners are dealt with

The record department reports formal applications, complaints, filings, etc., as follows:—No. of applications made, 3,921; no. of informal complaints, 494; no. of reports of accidents, 892; no. of reports of crossings, 331; no. of reports on condition of stations, 487; no. of files made during the year, 6,125, against 3,479 in 1908-09; no. of filings during year, 30,900, against 27,383 in 1908-09; no. of orders issued during year, 3,310, against 2,249 in 1908-09. The report of the Chief Engineer showed that 397 inspections had been made in various parts of the Dominion; that of the Chief Operating Officer, that 282 cases of accident had been investigated and reported upon.

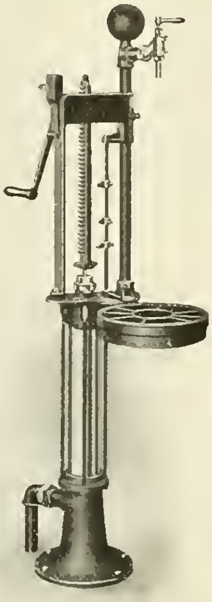
The Board's staff includes:—

TRAFFIC DEPARTMENT.—Traffic expert, J. Hardwell; chief clerk, G. A. Brown; nine clerks. Total salaries, $14,950.

ENGINEERING DEPARTMENT. — Engineer, G. A. Mountain; Assistant Engineers, T.

Oil Storage in a Signal Tower

is not hampered by space limitations when the Bowser Outfit No. 126 is used. A floor space of less than two square feet is sufficient for the pump, and the tank is kept outside, buried underground near the track where it can be conveniently filled direct from supply cars. This outfit exemplifies the thoroughness with which every detail in



Bowser Oil Storage Systems

(adopted by nearly 150 railroads)

has been thought out and applied to conditions such as they exist. The pump can be adjusted to fill exactly different sized lamps, at a single stroke of the pump. An accurate half-gallon, quart or pint can also be discharged at each stroke, as may be desired.

Drop a postal for our Booklet No. 18, on railroad oil storage.

S. F. Bowser & Co. Ltd., 66-68 Fraser Ave., Toronto

TURRET LATHES

"WARNER & SWASEY"

They are the simplest, most efficient Turret Lathes on the market—modern in every detail. We sell all sizes from the small 5-8 in. up to the 3 5-8 in. For railroad shop use the Hollow Hexagon Turret Lathes have all the facilities known to modern practice. This type is a most efficient machine for Bar Stock or Forging work. There are three sizes of Hollow Hexagon Turret Lathes each capable of handling a wide range of work. ∴ ∴

SIZES

No. 1—Turns Diameters 1½ ins., Lengths 18 ins.

No. 2—Turns Diameters 2¼ ins., Lengths 24 ins.

No. 3—Turns Diameters 3½ ins., Length 36 ins.

Send for Catalog illustrating full line of
Turret Lathes
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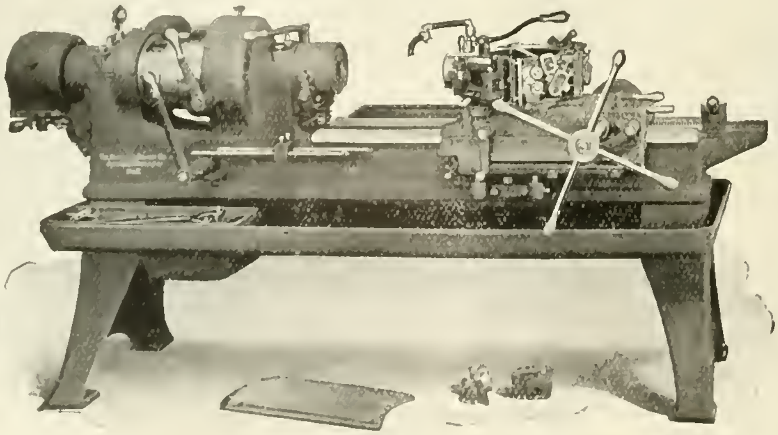

No. 2 Hollow Hexagon Turret Lathe

Complete Outfits for Railway and Machine Shops Planing Mills Saw Mills Pulp and Paper Mills, Etc., Etc.

WILLIAMS & WILSON, MONTREAL

L. Simmons, H. A. K. Drury, N. Canelion; Electrical Engineer, J. Murphy; one clerk and one stenographer. Total salaries, $15,750.

Record Department.—Record officer, E. W. McNeill; seven clerks. Total salaries, $7,750.

Secretary's Department. — Assistant Secretary, E. A. Primeau; Chief Clerk, A. E. Ecclestone; chief clerk and accountant, A. Lapointe; seven clerks and stenographers. Total salaries $9,900. The salary of the Secretary, A. D. Cartwright, is not included in this, being provided separately.

Operating Department.—Chief operating officer, A. J. Nixon; Assistant chief operating officer, A. F. Dillinger; Inspectors, E. C. Lalonde, Jas. Ogilvie, M. J. McCaul, W. S. Blyth, Jas. Clark, J. H. Shinnick. One clerk and one stenographer. Total salaries, $18,350.

Law Department.—Law Clerk, A. G. Blair; stenographer and librarian, Miss Larose. Total salaries, $3,400.

The staff also includes R. Richardson, private secretary to the Chief Commissioner, $2,000; four stenographers, whose salaries total $2,650; three messengers with salaries totalling $1,950, and a cook for the private car Acadian. During the last fiscal year eight clerks and stenographers were employed temporarily, the total amount paid them being $770.

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P. E. I. Railway Round House.

The Prince Edward Island Railway shops at Charlottetown were described in our issue of July 1910. The 20-stall round house with turntable, which was completed last year, occupies the whole of the area between Water St., on the north, the car shops to the south, Prince st., on the west, and the general block of shops on the east, taking in practically the whole area of the old house, with a larger area to the south and east. In order that there might be no interference with the housing and cleaning of locomotives one-third of the south side of the old engine house was removed, so enabling one half of the new building to be put up before the rest of the old building was torn down. The old turntable was only removed on the completion of the new building and new turntable so far as to enable the northern half to be used. The foundations of the building are of concrete, piles, capped with concrete, being used for the turntable. This is 57 ft. and the engine pits are each 52 ft. long, and 3 ft. wide inside, and are all provided with drainage pipes, catch basins, piping for hot air heating, etc. The walls are 17 ft. high at the outside and 21 ft. high to the turntable. The roof is of tar and gravel laid on grooved spruce planks, with 4 by 14 in. joists laid to two, three and four foot centres; standard cast iron sunken jacks are fitted over each pit. Office and store room accommodation, and a room for the enginemen are provided. The building is heated with direct steam heat, and lighted by electricity. The installation consists of 63 incandescent lamps of 16 c.p. each, with 19 extension cords inside and five 32 c.p. incandescent lamps outside, with all necessary switches. The building was erected from plans prepared by W. B. Mackenzie, Chief Engineer Government Railways.

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The Canadian Renard Road Train Co., Ltd., of Vancouver, B.C., is said to be establishing a road train service on the Cariboo route from Ashcroft to Barkerville. The train consists of an automobile with motor of 100 h.p., and four trailer cars, each with a capacity of 10 tons. The speed will be about six miles an hour, and the cost of the train is said to be $35,000.

G.T.R. Betterments, Construction, Etc.

New England Southern Ry.—The extensions of this line, which is a subsidiary of the Central Vermont Ry., which in turn is controlled by the G.T.R., intended to provide an outlet to the ocean at Providence, R.I., will, it is said, be put under contract in the spring. All the surveys are reported to have been completed in Rhode Island, Massachusetts and Vermont. Application is being made by the New York, New Haven and Hartford Rd., for authority to build a line between South Vernon and Brattleboro, paralleling the C V.R., "to condemn and take over such C.V. stations and terminals" and utilize such portions of the C.V.Ry. right of way as may be required.

Level Crossings, Montreal to Lachine.—The Board of Railway Commissioners had under consideration Dec. 1, the question of the level crossings between Montreal and Lachine. The Board directed the filing of plans by Montreal West, Lachine, and St. Pierre, showing all crosings of highways and railways together with any suggestions with regard to the elimination of the crossings or protecting the same. The matter will come up for consideration again early in the new year.

Ottawa Station Chimney.—A special system of lightning protection is being installed at the new station in Ottawa. The cable is of pure copper braided 28 strand wires, with a capacity of about 220-900 c.m. cross section and ½in. in diameter, made of seven strands. Large arrow points are to be placed equidistant apart on the conductor encircling the top of the chimney and extending 3 ft. about it. Each point is of specially prepared copper, gold plated, hand burnished, with pores filled. At the terminal of each down lead, two large ground reservoirs are to be set. All fasteners are of 94% pure copper and all connections are interwoven or braided in splices. M. M. Campbell C.E., is the inspector.

Ottawa, Rideau Valley and Brockville Ry.—Press reports state that C.W. Morse, and some other engineers are working in the vicinity of Smiths Falls, Ont., in connection with surveys for this projected line. The surveys being maue in that vicinity are with a view of reaching some deposits of iron ore to the north.

Guelph Station.—At a conference between the company's representatives and the city council, Dec. 9, it was decided that the company pay $9,000 for Jubilee Park, and provide a foot passageway under the tracks at Neeve St. The park property is being acquired for a site for a new station, and for additional yard space.

Holmedale Switch, Brantford.—The agreement between the company and the city council of Brantford, Ont., with respect to the building of the Holmedale switch, has been signed. The plans which have been filed show that the line will leave the G.T.R. main line just east of the overhead bridge at the Institute for the Blind, proceed diagonally across the grounds, curving across the tennis ground, then by a straight line to Chestnut Ave., the route will then enter city property at the old Buck farm, and continue direct across the water works property, passing the water works a little to the west and continuing straight to the river. The company will bridge the river some distance north of D'Aubigny Creek and will cross the Burford road connecting near the pork factory with the present Brantford and Tillsonburg branch. The Ontario Government has signified its willingness to grant the right of way through the Institute for the Blind grounds upon certain terms which the mayor says the council will accept. U. E. Gillen Superintendent Middle Division, was in the city Dec. 3, when he said the construction of the line would not be started until the spring. (Dec, 1910, pg. 1035.)

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Canadian Car and Foundry Co., Ltd.

Following is the financial statement for the first fiscal year ended Sept. 30. 1910:—

Assets.

Capital Assets:		
Real estate, buildings, plant, machinery, patents and goodwill	$10,534,207.19	
Less—Proportion of surplus of merged companies set up at organization applied in reduction thereof	612,645.74	
		$9,921,561.45
Investments (at cost)		50,153.90
Current Assets:		
Inventories of manufactured products, materials and supplies, at or below cost	$2,465,245.66	
Accounts receivable	1,976,450.23	
Car trust notes (less reserve for unearned interest)	158,028.47	
Bills receivable	17,082.08	
Deposits on Government contracts	43,663.33	
Cash in banks and on hand	89,053.00	
		$4,749,522.77
Deferred Charges to Operations:		
Rental, taxes and insurance paid in advance		31,882.91
		$14,753,121.03

Liabilities.

Capital Stock:		
Authorized—125,000 shares of $100 each	$12,500,000.00	
Issued and outstanding:		
Preferred—7% cumulative	5,000,000.00	
Common	3,500,000.00	
		$8,500,000.00
First mortgage 30 year 6% sinking fund gold bonds, due 1939:		
Authorized—$7,500,000.00		
Issued		3,500,000.00
Purchase money notes		500,000.00
Current liabilities:		
Bank advances	$626,743.90	
Bills payable	10,096.75	
Accounts payable and pay rolls	801,917.13	
Rentals, taxes, and interest accrued	82,282.03	
Reserve for preferred dividend (declared Oct. 1, 1910)	87,500.00	
		1,608,539.81
Reserve funds:		
Depreciation funds	$88,437.83	
Contingent and miscellaneous operating funds	44,446.73	
		132,884.56
Proportion of surplus of merged companies set up at organization	$612,645.74	
Less—Applied in reduction of capital assets	612,645.74	
Profit and loss account:		
Profit for 11 months ended Sept. 30, 1910, after deducting bond interest	$832,529.99	
Deduct—Dividends on preferred stock	320,833.33	
		511,696.66
		$14,753,121.03

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Sir Thos. G. Shaughnessy, President C.P.R., and Lord Strathcona, R. B. Angus and C. R. Hosmer, directors C.P.R., have been re-elected directors Bank of Montreal.

The Government claim against the C.P.R. for alleged unpaid customs duties, is again before the Exchequer Court at Montreal. The claim, which was originally for $320,000, now stands at $60,000, and recalls the case where D. Hobbs, in the C.P.R. service, was sentenced some few years ago for fraud in connection with these customs payments by the C.P.R. The Government does not claim that the company attempted to avoid payment, but that the amounts were not received by the Customs authorities.

Pintsch Light Steam Heat

Most brilliant illumination made possible by the Pintsch System using perfected Mantle Lamps and Safety Axle Driven Dynamo Electric System a product of sixteen years experience and now operating successfully on leading roads

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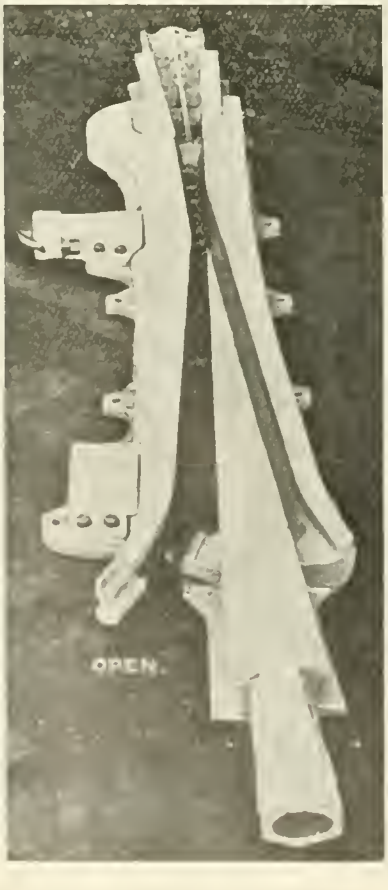

Railway Spring Frog

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for the Canadian Railways

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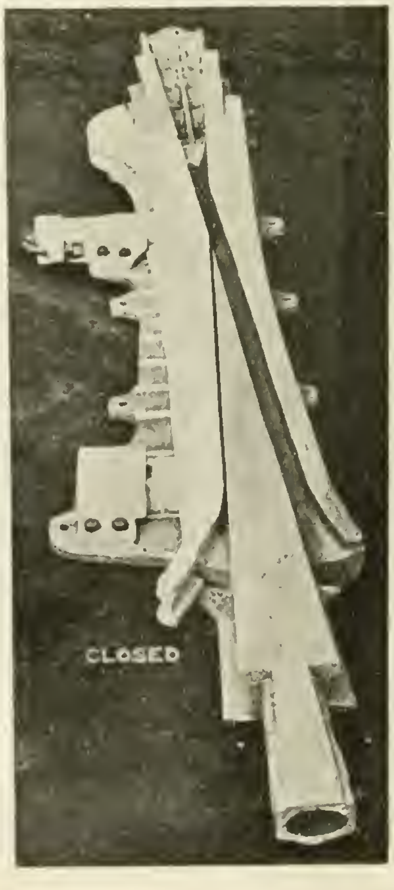

National Transcontinental Railway.

The report of the Commissioners for the construction of the line from Moncton to Winnipeg, covering the year ended Mar. 31, 1910, contains some additional particulars to those given in the report of the Department of Railways as quoted in our last issue. The total contracts for steel superstructures, bridges and viaducts awarded to Mar. 31, 1910, amounted to 38,984 tons, of which the bridges completed equalled 12,975 tons, leaving 26,009 tons of steel in bridges then under construction. There are 23 steel bridges on the line in New Brunswick, five of which were completed, 17 in process of construction and one—the crossing of the Salmon River at Chipman,—which had not been started at the date of the report. All the bridge work in the district is now reported to be completed. In District B., which takes in 507.22 miles, east and west of the Quebec River there are 44 steel bridges, of which 25 had been completed, 11 were in progress and 8 had not been started at Mar. 31, 1910. Eight steel bridges were in progress and four were to be built on District D. The 16 bridges on District F, have all been completed since the date of the report. No contracts have been let for steel bridges in Districts C., and E.

C. O. Foss, District Engineer District A., is reported to have stated Nov. 30, that the big viaduct over the Salmon River at Chipman was about two-thirds completed and that it was expected to have the steel work completed by Dec. 30. The Commissioners recently completed an inspection of the sections of the line completed west of Quebec. Tracklaying has been completed for about 100 miles west of Cochrane Ont. the point of junction with the Temiskaming and Northern Ontario Ry. West of the end of this track there has been laid 10 miles on the O'Brien contract, which carries the line to the Metagami River. Thirty miles of grading has been completed beyond the river.

Replying to questions in the House of Commons, Dec. 1, the Minister of Railways said that during the summer of 1909, borings were made at the site of the Quebec Bridge, 10 holes being drilled on the south side, and nine on the north side, down to the solid rock. The north main pier is founded on solid rock, and the south main pier is on a solid foundation 79 ft. below ordinary water level. The Board of Engineers had not made any tests of the velocity of the wind at the site of the bridge, but the designs of the structure are based on calculations, including strains due to wind having a velocity of 100 miles an hour in any direction. Answering a further question Dec. 2, the Minister said the matter of the Quebec Bridge and terminals had been discussed in an informal way with the various railway companies interested, but further action at the present time was considered premature. The Minister had a conference with the Board of Engineers in New York, Nov. 26, when matters connected with the substructure were under discussion. Nothing has been announced as to the letting of a contract for the superstructure and it is not expected that any definite announcement will be made until after Jan. 30.

S. N. Parent, Chairman of the Commissioners in an interview Dec. 8, said the plans and specifications for the terminals and union station in Quebec were being prepared. The station would be over 300 ft. long and 100 ft. wide, and would cost about $500,000. The shops would in all probability be located at Cap Rouge, in the vicinity of the Quebec bridge.

The Minister of Railways replying to questions in the House of Commons, Dec. 12, said the percentage of the contracts completed, the amounts paid contractors, and the amounts reserved on Oct. 31, 1910, were as follows:

Contractor.	Through mileage.	Estimated cost at date of contract.	Percent. of work done, Oct. 31, 1910.	Amount paid to Oct. 31, 1910.	Amount reserved, Oct. 31, 1910
Grand Trunk Pac. Con. Co.	0.00— 50.00	$989,895.90	99.05	$1,791,480.80	$99,053.42
J. W. McManus & Co., Ltd.	50.00— 58.00	289,090.62	91.49	452,702.60	44,405.83
Grand Trunk Pac. Con. Co.	58.00— 96.42	767,434.95	98.50	910,404.07	51,156.01
Grand Trunk Pac. Con. Co.	96.42— 163.80	1,898,124.21	96.45	2,311,891.62	106,876.85
W. Kitchen Co., Ltd.	163.80— 195.58	1,646,253.65	86.91	2,424,114.03	269,346.00
Lyons & White	195.58— 256.61	1,385,941.09	90.21	1,868,836.24	107,648.47
M. P. & J. T. Davis	256.61— 310.22	2,377,409.00	62.81	1,886,336.14	209,592.90
M. P. & J. T. Davis (East)	310.22— 460.45	5,011,346.00	75.70	5,071,612.71	263,512.52
M. P. & J. T. Davis (West)	460.45— 510.31	5,297,257.46	85.52	2,063,809.47	90,317.95
Macdonnell & O'Brien	510.31— 610.41	....	89.17	8,295,031.84	132,345.39
Grand Trunk Pac. Con. Co.	610.41— 656.83	1,691,073.41	80.00	2,671,083.30	121,787.03
Macdonnell & O'Brien	656.83— 763.83	4,559,284.50	19.30	1,501,236.60	166,804.06
Macdonnell & O'Brien	763.83— 878.80	3,815,279.10	....	Nil.	Nil.
Grand Trunk Pac. Con. Co.	878.80— 956.74	3,986,901.42	59.20	3,226,743.13	358,527.02
	956.74—1028.80				
E. F. & G. E. Fauquier	1028.80—1128.77	3,936,566.00	70.50	2,505,367.29	289,485.25
M. P. & J. T. Davis	1128.77—1172.85				
	1172.85—1232.85	2,308,048.25	10.18	458,093.65	50,899.29
M. P. & J. T. Davis	1232.85—1332.85	2,019,908.25	....	Nil.	Nil.
E. F. & G. E. Fauquier	1332.85—1407.85	2,101,499.88	59.70	1,461,297.38	162,699.71
O'Brien, Fowler & MacDougall Bros.	1407.85—1428.04	5,967,208.75	50.21	2,676,252.77	297,361.42
	1428.04—1534.04				
O'Brien, Fowler & MacDougall Bros.	1534.04—1557.80	1,158,258.25	84.70	1,488,876.22	165,430.69
J. D. McArthur	1557.80—1804.13	13,010,398.92	95.50	15,689,828.28	709,868.55
Haney, Quinlan & Robertson	1804.13—1804.33	300,000.00	89.6	313,686.10	14,854.01

Tenders will be received to Jan. 24, for the supply of 61,200 gross tons of 80-lb steel rails with the fastenings for same.

GRAND TRUNK PACIFIC RAILWAY.

The construction of branch lines from the Winnipeg-Edmonton line is being pushed. The first line being built is at Melville, Sask., one section running northerly to Yorkton, and during last season it was extended to Canora, where it will terminate for the present.

We are advised in connection with recent press reports respecting the company's plans for a line to Hudson Bay, that there has been no change in its intention, as reported in our Oct. issue, that when connection is made with the projected Dominion Government line to Hudson Bay, it will be by an extension of its line from Melville, Sask.

To the south of Melville the branch has been built to Balcarres and the extension into Regina is under construction. Negotiations for the entrance into Regina have been completed and it has been agreed between E. J. Chamberlin, V.P. and G.M., and the city authorities, that the station will be located at the corner of 16th Ave. and Albert St., and the freight sheds east of the fair grounds, on lands given by the city. It was stated at a meeting of the city council Nov. 23, that a line would be built from Regina northerly and westerly to Edmonton. The laying out of the yards and the building of the station and freight sheds will be gone on with as quickly as possible. Southerly from Regina a line is being built to the International boundary on which considerable progress has been made.

The next line being built is the Battleford branch, which will have a length of 48 miles and on which approximately 45% of the grading has been completed.

The third branch starts from west of Watrous, Sask., and will extend to Prince Albert. On this line about 85% of the grading is done, and track laying has been begun.

The fourth branch starts at Tofield, Alta., and runs southerly to Calgary. Track has been laid to mileage 47, and grading has been completed to Red Deer, while clearing and other preliminary work has been done between Red Deer and Calgary.

The company is asking the Minister of Railways to approve plans for a line from Moose Jaw to the elbow of the Saskatchewan River, but as several towns want to have the route changed so that they may be served the consideration of the matter has been adjourned to see what could be done.

The company is reported to have acquired land on McDougall Ave. south of Jasper St., Edmonton, on which it is proposed to erect a large hotel.

The members of the Alberta Legislature were taken over the line west of Edmonton on a special train Dec. 4. Track has been laid for some distance beyond Edson and the grading to the Yellowhead Pass is reported to be well forward. B. B. Kelliher, Chief Engineer, is quoted as stating that if the present rate of progress is maintained a contract will be let in the spring for the section between Tete Jaune Cache and Aldermere, the only section of the line not under contract. It is expected to have track laid to the Yellowhead Pass by Jan. 31. Some of the construction gangs closed down their camps for the season, Nov. 30, but those engaged on the heavy earth work and the rock work will remain out all winter. The construction engineering department has moved its headquarters from Edmonton to Fitzhugh.

With respect to the situation at Fort George, B.C., the company has filed its plans with the Provincial Government locating the station grounds on the Indian Reservation there. This is the point from which a branch line is to run to Vancouver, and for which surveys are about completed. Three parties are in the field and will remain until the work is completed.

Track has been laid easterly from Prince Rupert to Newtown, B.C., mileage 100. Steam shovels are at work at Kitsumkalum taking out ballast, for the line. In the Kitselas Canyon three tunnels are being driven through the rock, and these are expected to be completed in the spring, which will enable track to be laid as far east as Hazleton.

In Prince Rupert, work is well forward on the preparation of the site for the yards and sidings. The work has included the removal of 400,000 cubic yards of solid rock, which has been used to fill up at other points, thus making an embankment along the water front between the present wharf and Morse Creek, a distance of 0.75 mile. The total mass of rock cleared away was 1100 ft. long, 180 ft. wide, and reaching in places to a height of 68 ft. The work has been in hand for two years and a half, the contract having been sublet by Foley, Welch and Stewart, to Ross and McColl.

Application is being made to the Dominion Parliament for an act extending the time within which the Pacific Northern and Omineca Ry. company may build the lines authorized by chap. 90 of the statutes of 1902 as amended by Chap. 141 of the statutes of 1906.

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An unconfirmed press report says the C.P.R. may shorten its Toronto-Winnipeg line by building a new line from Nepigon, 70 miles east of Fort William, to Savanne, 71 miles northwest of Fort William.

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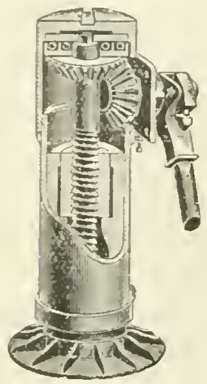
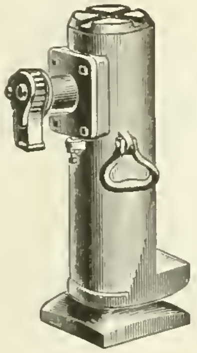
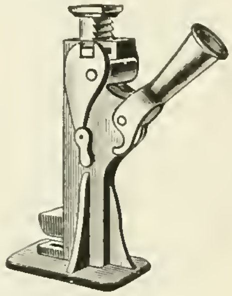


Sectional View



Foot Lift Jack



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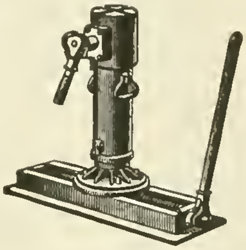

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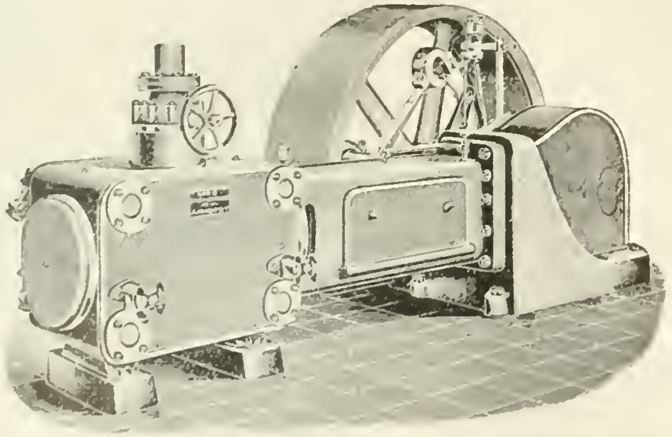

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A Railway to Hudson Bay.

The question of whether Hudson Bay is sufficiently free from ice to permit of safe navigation, is one of the things which will determine the success of the railway to Hudson Bay, as a factor in trade between Western Canada and Europe. That vessels of large burden have entered the bay with cargoes, and having discharged them have returned safely to ports in Canada and in Europe, is conceded, but the question to be decided is the length of the season of navigation and the safety of the channels to the port, which will be reached by the railway. During the summer of 1910 six vessels passed into the bay, and of these the Adventurer, which arrived at the southern extremity of James Bay, Ont., Julv 27, reports that she did not meet much ice. The Stanley's experience was similar, at a little later period, while the Earl Grey did not meet with any ice. The Chrissie Thomas got stuck in the ice, and was towed to Fort Nelson by the Stanley. The Adventure and the Stanley encountered considerable ice on their return trips in Sept. The Discovery and the Pelican are Hudson's Bay Co.'s vessels, and reports as to their experience is not available. A number of navigators state that navigation can only be carried on for about six weeks, while the Adventure's officers say that there is safe navigation only between July 15 and September 30.

Replying to questions in the House of Commons, Dec. 5, the Minister of the Interior stated that no land has been sold on special account of Hudson Bay railway construction. Under the authorization of 1908, there have been sold as homesteads and pre-emptions, to Oct 10, aproximately 6,375,200 acres. on which there had been received $627,738.26, on homesteads and $667,412.52 on pre-emptions. The approximate amounts due were $1,100,317.74 on homesteads, and $21,678,717.48 on pre-emptions. The revenue collected on this account had been deposited to the credit of the Consolidated Fund on account of Dominion Lands Revenue.

Replying to questions in the House of Commons, Dec. 1, the Minister of Railways said the contract for the substructure of the bridge over the Saskatchewan River at Pas Mission, had been let to Mackenzie, Mann & Co., at schedule prices, the estimated amount being $104,870. A contract had also been let for the superstructure of the bridge to a bridge building company at schedule prices, the estimated amount being $171,500. The Government had not entered into any negotiations or contracts with any person or persons with a view of leasing the line to any person or company upon completion, neither had any decision been arrived at as to the policy on which the line will be operated upon completion.

Press reports state that tenders will be asked early in the year for the section of the line from the Pas to Split Lake 150 miles. Representatives of several contracting firms have recently gone over the route.

A very large deputation of farmers, principally from the western provinces, with some from Ontario, waited on the Government at Ottawa, Dec. 16, and presented resolutions upon various matters In reference to this projected railway the resolution was to the effect that the railway and all terminal facilities should be owned and operated in perpetuity by the Dominion Government under an independent commission. The Premier said the Government was in a position to undertake construction at once, and that the matters referred to in the resolution would receive attention.

A press dispatch from Prince Albert, Sask., Dec. 15, states that Mackenzie, Mann & Co., who have the contract for the substructure for the bridge at the Pas, Sask., have failed to find a satisfactory bottom for the bridge piers after having bored for a depth of 250 ft., and that they have abandoned the work.

A Saskatoon, Sask., dispatch of Dec. 20 contradicts the Prince Albert report, and says the contractors have not abandoned work on the bridge. and that a good foundation was found at 50 ft.

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Dominion Atlantic Railway.

Following are extracts from the report for the year ended June 30, 1910:—

1909.		1910.
	GROSS REVENUE.	
£162,765	Passengers, mails, etc.	£162,210 0 8
104,258	Mercandise, etc.	111,433 7 8
£267,023		£273,643 8 4
	EXPENDITURE.	
£37,661	Maintenance charges	35,863 12 11
82,380	Operating and general charges	88,564 17 11
92,378	Steamer expenditure	90,950 11 5
212,419		215,379 2 3
£54,604	Net revenue	£58,264 6 1

Passenger business on both railways and steamers has yielded a slight increase during the year, and the effect of the depression which followed so severely on the financial crisis in the U.S. during the previous year is now passing away. A good apple crop contributed largely to the freight earnings, and, in spite of the fact that a very mild winter prevented the usual prosecution of the timber industry, the earnings under this head are some £6,689 above the previous record. The falling off in miscellaneous receipts is due to the absence of charters for any of the steamships during the year. Gross receipts for the year show an increase of £6,620, while expenditure has also increased by £2,960, resulting in an increased net revenue of £3,660. There is an available balance for the year, including £1,388 5s. 10d. brought forward from the previous year, of £59,652 11s. 11d. From this there falls to be deducted £45,055 1s. 4d. for interest charges, leaving a balance of £14,597 10s. 7d. The suspense account, which is a provision for the depreciation of steamers, and which stood at £22,803 2s. 8d. on June 30, 1909, is being increased by £13,000, making it £35,803 2s. 8d., leaving £1,597 10s. 7d. to be carried forward. The proportion of working expenses to gross receipts during the year has been 78.7%, compared with 79.5% the previous year, a decrease of 00.8%. There has been no capital expenditure during the year. Temporary loans, which on June 30, 1909, stood at £117,000, were reduced during the year to £99,000, and have since been reduced to £90,000.

Under date of May 12, 1910, a circular was addressed by the Bank of Montreal to all stockholders then on the register, making an offer for the purchase of the preference and ordinary stocks. As announced in the recently published report of the Canadian Pacific Ry. Co., almost all the preference and ordinary stocks of the Dominion Atlantic Co. have been acquired by friends of the former company in accordance with the terms of the circular of May 12. Under the arrangement then made the former directors retired, and T. Skinner, H. W. Birks and F. W. Taylor have been elected.

After many years' devoted service in the company's interests, R. L. Campbell has retired from the office of Secretary under a special pension. O. F. Walford, who has long been in the service of the company, has been appointed his successor.

◆

Thomas Tait's Resignation.

We are officially advised that, on the attention of the Premier of Victoria, Australia, being called to the press dispatch cabled from Melbourne, and which was published in some Canadian papers on September 22, alleging that Thomas Tait had resigned on account of accidents on the Victorian railways; the Premier immediately requested the Reuter agency to send the following dispatch: "Hon. Mr. Murray, Premier of Victoria, emphatically contradicts certain villifying press reports from Australia published in some Canadian papers Sept. 22, regarding resignation of Thos. Tait, Chairman Victorian Railway Commissioners, and Mr. Murray states resignation not only entirely voluntary but greatly regretted by Government."

D. H. Ross, Canadian Trade Commissioner, wrote from Melbourne, Nov. 21, to The Toronto Globe as follows: "In a number of Canadian papers, issued on Sept. 22nd last, there appeared a cable from Australia in which the resignation of Thos. Tait, Chief Commissioner of the Victorian Railways, was attributed as the outcome of recent railway accidents near Melbourne. Months before the Richmond accident occurred (through the errors of signalmen), Mr. Tait confidentially informed the State Government that, owing to private reasons, it was imperative for him to leave Australia before the end of this year. When his resignation was announced in Parliament, the Premier and many members eulogized the services rendered to the State by Mr. Tait, and regret was expressed at his departure. The railways have proved a profitable investment under his administration, when previously they were worked under a heavy annual loss. The Victorian passenger trains are now the best in Australia, and would be creditable to any country. Concurrent with the splendid profits recently earned, the rolling stock, track equipment and station buildings have been greatly improved. It is a regrettable incident that such aspersions on Mr. Tait's Australian career should have been cabled to Canada. His resignation was purely voluntary and is deeply regretted by the Government and throughout the State."

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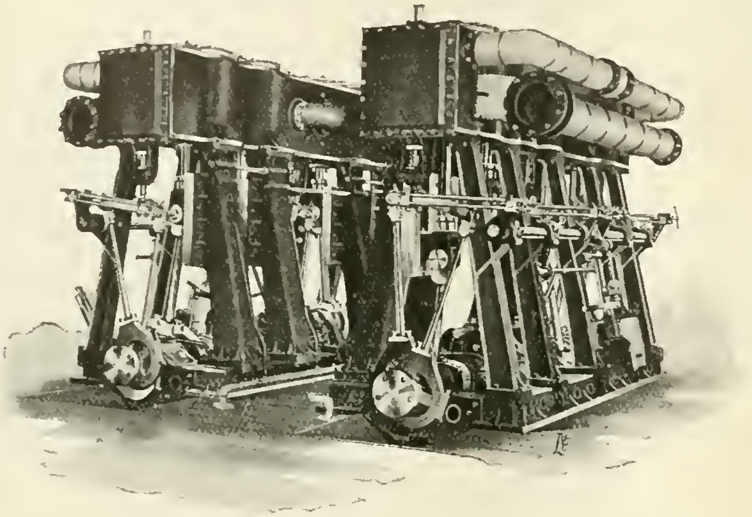
Railway Bylaws, Rules and Regulations.—The Secretary of the Board of Railway Commissioners has issued the following circular:—"I am directed by the Board to call your attention to the requirements of sec. 310 of the Railway Act, as follows:—'All bylaws, rules and regulations, except such as relate to tolls and such as are of a private or domestic nature and do not affect the public generally, shall be submitted to the Governor in Council for approval.' The Board directs that you inform it, as soon as possible after the receipt of this circular, whether your company has complied with the requirements of said section and, if not, your company should take immediate steps to do so. If any application is filed for approval it should be accompanied by not less than five copies of the rules and regulations in question."

Marine Engines



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Railway Rolling Stock Notes.

The Canadian Northern Ry. has ordered 20 consolidation locomotives.

Haney, Quinlan and Robertson have received a four-wheeled locomotive from the Montreal Locomotive Works.

The G.T.R. has recently added to its rolling stock, 245 box cars, built by the Canadian Car and Foundry Co., Montreal.

The Black Lake Consolidated Asbestos Co. has received a four-wheeled locomotive from the Montreal Locomotive Works.

The Michigan Central Rd. has received eight consolidation and two Pacific locomotives from the Montreal Locomotive Works, details of which we have already published.

In referring to the receipt, by the G.T.P.R. of four ten-wheeled locomotives, nos. 620 to 623, in our Dec., 1910, issue, we inadvertently mentioned the builders as the Montreal Locomotive Works instead of the Canadian Locomotive Co., Kingston, Ont.

The Ha Ha Bay Ry., has added two electric motors to its rolling stock, which at present consists of two locomotives, one steam shovel, 52 flatcars, 13 construction dump cars, six box cars, two passenger coaches, one snow plow, and two electric track motors.

The G.T.P.R., has received three dining cars, nos 4,000 to 4,002; nine refrigerator cars, nos. 340,237 to 340,246, and 62 flat cars, nos. 361,376 to 361, 437, from the Canadian Car and Foundry Co., Montreal, and six 10-wheel locomotives, completing order for 10, from the Canadian Locomotive Co., Kingston, Ont.

The Intercolonial Ry., between Nov. 17 and Dec. 17 placed orders at its Moncton shops for one Pintsch ggas car, four stock cars, one refrigerator car, and one official car (replace), and received three colonist cars from the Silliker Car Co., Halifax, N.S.

The Canadian Northern Ry., between Nov. 15 and Dec. 15, 1910, received the following additions to rolling stock: two baggage cars and three first class coaches, from the Canadian Car and Foundry Co., Montreal; 20 refrigerator cars and 75 box cars, from the Crossen Car Manufacturing Co., Cobourg, Ont., and 25 box cars from the Silliker Car Co., Halifax, N.S.

The C.P.R., between Nov. 15 and Dec. 15, received the following additions to rolling stock: three first class cars, one second class car, 33 horse cars, and six D.10 locomotives, also 20 flat cars and two vans for the Esquimalt and Nanaimo Ry., from its Angus shops, Montreal; 35 steel coal cars and five ore cars, from the Canadian Car and Foundry Co., Montreal.

The C.P.R., between Nov. 15 and Dec. 15, ordered the following rolling stock: 88 box cars, 10 flat cars, 13 stock cars, 51 freight refrigerator cars, 51 passenger refrigerator cars, one steel coal car, 53 vans, 10 switching locomotives, one hump switching locomotive and six D.10 locomotives from its Angus shops, Montreal; 2,000 steel frame box cars from the Canadian Car and Foundry Co., Montreal; 10 consolidation locomotives from the Montreal Locomotive Works, and 20 consolidation locomotives from the Canadian Locomotive Co., Kingston, Ont.

The Powell River Lumber Co. has ordered one Columbia type locomotive from the Montreal Locomotive Works, of which the following are the chief details:—

Weight in working order	80,000 lbs.
Weight on drivers	58,000 lbs.
Weight on trailers	13,000 lbs.
Weight on engine truck	9,000 lbs.
Wheel base, driving	7 ft.
Wheel base, engine	22 ft. 6 ins.
Cylinders	14x22 ins.
Boiler, type	Straight top.
Boiler pressure	165 lbs.
Tubes, number and diameter	106, 2 ins.
Tubes, length	11 ft. 8 ins.
Brakes	Westinghouse.
Tank capacity	1,200 U.S. gals.

The Quebec Contracting Co. has ordered one mogul locomotive from the Montreal Locomotive Works, of which the following are the chief particulars:

Weight in working order	131,000 lbs.
Weight on drivers	113,500 lbs.
Weight on engine truck	17,500 lbs.
Weight on tender	102,500 lbs.
Wheel base, driving	12 ft. 6 ins.
Wheel base, engine	20 ft. 6½ ins.
Wheel base, engine and tender	50 ft.
Cylinders	19x26 ins.
Boiler, type	Extended wagon top.
Boiler pressure	180 lbs.
Tubes, number and diameter	275, 2 ins.
Tubes, length	10 ft. 5¼ ins.
Brakes	Westinghouse American.
Tank capacity	5,000 imp. gals.

Following are the chief details of the 2,000 steel frame box cars which the C.P.R. is having built by the Canadian Car and Foundry Co., Montreal:—

Length inside	36 ft. 0 in.
Length, centre to centre of trucks	26 ft. 10 in.
Length over buffer blocks	38 ft. 1¼ in.
Width inside	8 ft. 6½ in.
Height inside	8 ft. 0 in.
Height top of rail to eaves	12 ft. 7 9-16 in.
Height, top of rail to top of running board	13 ft. 4¾ in.
Journal boxes	McCord
Journal bearings	Canadian Bronze Co.
Bolsters and brakebeams	Simplex
Side bearings	Susemihl
Axles	Steel
Axles, tender	5½ in. by 10 in.
Axles, engine truck	6 in. by 10 in.
Axles, radial truck	7 in. by 14 in.
Wheels	Cast iron, C.P.R. standard
Air brakes	Westinghouse
Couplers	Simplex

As Viewed by a Railway Superintendent.

Morley Donaldson, Superintendent Ottawa Division Grand Trunk Ry., who has been a subscriber for many years, writes:—

"I have always read the Railway & Marine World with pleasure, and believe it to be a necessity in our Canadian railway life. I find the news accurate and complete in details we all want to know. If continued in its present form, its future success is assured."

The Canadian Northern Ry. has ordered 200 latest type Hart convertible cars from the Hart-Otis Car Co., Montreal, which will be built at the Canadian Car and Foundry Co.'s Turcot Works. Following are chief dimensions:—

Capacity	80,000 lbs.
Width over side sills	8 ft. 10 ins.
Length inside as hopper	20 ft. 10 ins.
Length inside as gondola	34 ft. 8 ins.
Width inside	8 ft. 8 ins.
Width over all	10 ft. 2½ ins.
Width at top	9 ft. 10 ins.
Height from rail to floor	4 ft. 4⅛ ins.
Height from rail to top of car	8 ft. 1⅜ ins.
Height inside	3 ft. 9¼ ins.
Truck centres	26 ft. 8 ins.
Wheel base of truck	5 ft. 4 ins.
Length of hopper door opening	16 ft. 8½ ins.
Width of hopper door opening	2 ft.

Following are the chief details of the 12 G.1 and G.2 locomotives, which the C.P.R. is having built at the Montreal Locomotive Works, as mentioned in our last issue:—

Weight on drivers	135,999 lbs
Total weight	215,000 lbs. (G 1) 214,800 lbs. (G 2)
Weight of tender loaded	134,000 lbs.
Capacity, water	5,000 imp. gals.
Capacity, coal	10 tons
Heating surface, firebox	183 sq. ft.
Heating surface, tubes	2,777 sq. ft.
Heating surface, total	2,960 sq. ft.
Heating surface, superheater	539 sq. ft.
Grate area	45.6 sq. ft.
Tubes, no. and diar.	193 2¼ in., 22 5 in.
Wheel base, driving	13 ft. 0 in.
Wheel base, total engine	33 ft. 7 in.
Wheel base, engine and tender	59 ft. 6¾ in.
Boiler, type	Extended wagon top, radial and cross stayed
Boiler pressure	200 lbs.
Superheater	Vaughan and Horsey
Cylinders	21 in. by 28 in.
Driving wheels, diar.	69 in.
Valve gear	Walschaert
Valve, type	Piston 11 in.
Axles, main	9½ in. by 12 in.
Axles, others	9 in. by 12 in.

Following are the chief details of the 20 consolidation locomotives which the C.P.R. is having built by the Canadian Locomotive Co., Kingston, Ont.:—

Weight on drivers	195,000 lbs.
Weight, total	220,000 lbs.
Wheel base, rigid	16 ft. 6 ins.
Wheel base, total engine	25 ft. 5 ins.
Wheel base, engine and tender	55 ft. 8 ins.
Length over all, engine and tender	66 ft. 4 ins.
Width over all, engine and tender	10 ft. 1 in.
Height over all	15 ft. 2 ins.
Heating surface, firebox	180 sq. ft.
Heating surface, tubes	2,631 sq. ft.
Heating surface, total	2,811 sq. ft.
Driving wheels, diameter	63 ins.
Driving wheel centres	Cast steel.
Driving journals—Main 10x14, others	9½x14 ins.
Cylinders	24x32 ins.
Boiler, type	Extended wagon top.
Boiler pressure	180 lbs.
Tubes, number and diameter—270 2 in., 24 5 in.	
Tubes, length	15 ft. 2¾ ins.
Brakes	Westinghouse ET.6.
Grate area	49 sq. ft.
Superheater	Vaughan and Horsey.
Superheater, heating surface	450 sq ft.
Tender, weight loaded	134,000 lbs.
Capacity, water	5,000 imp. gals.
Capacity, coal	12 tons.
Tank, type	Water bottom.
Truck, type	Outside equalized
Truck wheel, diameter	36¼ ins.
Wheel, type...Cast steel centres with retaining rings.	
Journals	5½x10 ins.
Brake beams	Simplex high speed.

Victorian State Railway.

The report of the Victorian, Australia, State Railways for the year ended June 30, issued recently, is the last complete year for which the Commission of which Thomas Tait was chairman, is responsible. The gross revenue was $21,626,059, and the working expenses, including special payments, into railway accident and fire insurance fund of $364,987, and the rolling stock replacement fund of $827,305 were $13,195,734, leaving a net revenue of $8,430,325. The net revenue of the St. Kilda and Brighton Electric St. Ry. was $9,855, making the total net revenue $8,440,180. The interest charges and expenses were $7,167,946, and the pensions and gratuities $517,455, which, deducted from the total net revenue, left a surplus for the year of $754,779. As compared with the figures for the year ended June 30, 1909, the surplus shows a decrease of $388,537. A general comparison of the results of the operation of the lines for the seven years since June 30, 1903, and the seven years preceding that date shows an increase in gross revenue of £31,339,296: in working expenditures of £13,366,732, and in net revenue of £17,972,564: There was an increase of £2,617,009 in the amounts for special expenditures and charges in liquidation of extraordinary liabilities, in the interest charges and expenses (charges for pensions and gratuities, appear in the years 1908-9 and 1909-10 only) of £1,491,996. The general results show that in the seven years prior to June 30, 1903, there was a total deficit of £9,304,982; in the seven years ended June 30, 1910 there was a total profit of £4,558,577.

The total capital expenditure on the line has been £43,200,941, an increase of £600,564 during the year. Of lines constructed, 47.96 miles, costing £392,741, have been abandoned, and there has been expended upon lines not constructed £342,898. The interest on these two amounts is being charged against the railways.

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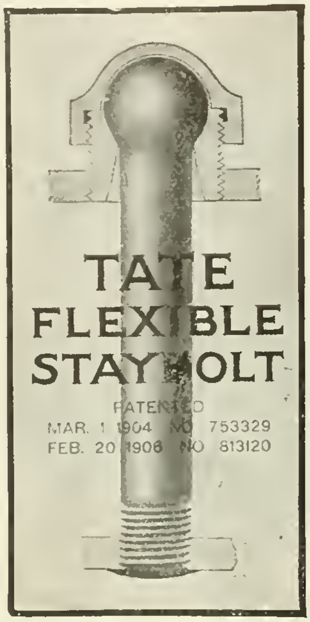

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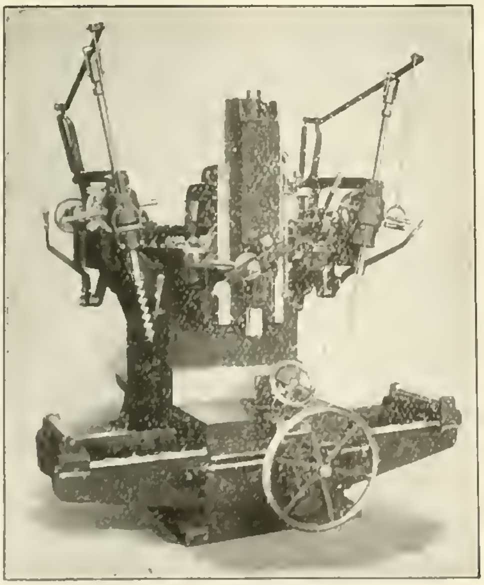

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Canadian Northern Ry. Construction, Etc

Canadian Northern Quebec Ry.—The Board of Railway Commissioners has authorized the opening for traffic of the branch from Hedleyville Jct., to the Montmorency Lumber Co.'s pulp mill, 7.62 miles.

James Bay and Eastern Ry.—The Board of Railway Commissioners has authorized the company to build across the public road between lots 19 and 20, range one, Ashuapmouchouan tp., Lake St. John County, Que.

Canadian Northern Ontario Ry.—Orders have been issued by the Board of Railway Commissioners to cross and divert public road in lots 275 and 276, St. Benoit parish, to divert and cross by a bridge the public road at station 656-56 St. Andrew's parish; and to build across the public road between lots 15 and 16, Junction Gore, Gloucester tp.

At a session of the Board of Railway Commissioners held at Ottawa, Dec. 6, the matter of the proposed temporary entrance of the C.N.O.R. into Ottawa across Hurdman road, was further adjourned until the city council had time to consider the matter. The Chief Commissioner said the understanding was that the tracks, if laid across the road, are to be used for freight purposes only for two years, and that if used for any other purposes, the Board will compel their removal.

The work on the line between Toronto and Ottawa so far as it has been put under contract, is reported to be well forward. The grading as far as Trenton is practically complete, tracklaying is well advanced and some ballasting has been done. The station buildings are being erected, and the work of connecting up the different sections will be completed as soon as the steel work on the several bridges under construction is completed.

Plans showing a portion of the company's proposed line in North Toronto have been filed with the Minister of Railways. The section for which approval is asked extends from Poplar Plains Road to west of Leaside Jct., the line paralleling the C.P.R.

The location plans for the line to connect up the Toronto-Sudbury line with the C.N.R. at Port Arthur, between mileage 500 and mileage 525, came before the Board of Railway Commissioners, Dec. 7. Owing to difficulties it is necessary to secure permission to use portions of the C.P.R. right of way, and the consideration of the plans was postponed in order to enable the C.P.R. to be consulted.

Canadian Northern Ry.—The contract for the erection of the train shed at the C.N.R.-G.T. Pacific-National Transcontinental Ry. station in Winnipeg, has been let, and work will be gone on with at once. The shed will be 800 ft. long, covering six tracks, but arranged so that it may be extended to cover an additional six tracks. It is expected that the building will be completed by the fall.

Press reports state that 176 miles of the branch line from Vegreville towards Calgary, Alta., have been completed, and that it has been decided not to operate a train service on the section recently completed until the spring. It is proposed to complete the erection of some steel bridges on the line during the winter.

In connection with the branch from this line starting from Stettler and proceeding by way of Red Deer to Rocky Mountain House and the Brazeau River district, the company's representatives, Dec. 7, withdrew the plans from the consideration of the Board of Railway Commissioners. A considerable amount of grading has been done on this line, but it was laid down by the Board that location plans will not be approved for any portion of a railway where grading has been done before approval has been obtained. The Alberta Central Ry. also opposed the company's application to the Alberta Legislature for authority to build this and other lines, having a total estimated length of about 700 miles, but the bill was approved by the Railway Committee and read a second time. The title of the company proposed to be formed in Alberta is the Canadian Northern Western Ry. The lines authorized to be built are: from Edmonton or Strathcona to the boundary between Alberta and British Columbia, near the Pine or Peace River Pass: from some point on the line between Edmonton and Calgary to Rocky Mountain House, thence to the Brazeau and Macleod Rivers, and on to a junction with the C.N.R. west of Edmonton, with power to build branch lines. We are advised that the Alberta Legislature has passed an act providing a subsidy by way of guarantee of bonds for the building of the first 50 miles of a line into the Peace River and Grand Prairie districts. The company has its engineers in the field but the work has not progressed sufficiently to enable any definite decision to be made as to the route which will be followed. A press report states that the Northern Construction Co. is preparing to begin grading on the line to Peace River in the spring.

In a recent interview at Edmonton, D. D. Mann, Vice-President, is reported to have said he was able to give the Premier of the Province a definite assurance that the line to Athabasca Landing will be completed in 1911 and that 300 miles of steel will be laid on the lines guaranteed by the province; that the line into Calgary will be finished and about 75 miles of grading done south of Calgary; that 200 miles of grading would be done on the line west towards the Pacific coast: and that progress would be made on the line to connect up Edmonton with Pas Mission via Lac la Biche, Battleford and Prince Albert.

Canadian Northern Pacific Ry.—We are officially advised that the original contract of the Northern Construction Co. for building 60 miles on the Lower Fraser River, has been extended to cover an additional mileage, to Hope, about 15 miles above Chilliwack Village. The clearing is finished on the first contract, and the bridging and grading about half done. Ties are being delivered, and it is expected that the first lot of rails for the line will be delivered about Mar. 1. The wharf at Port Mann is under construction, and will be sufficiently far advanced to permit the landing of the rails in March. The rock work on the line is being rapidly proceeded with, but the weather prevents much of the other work being done to advantage.

Speaking in New Westminster Nov. 29, D. D. Mann, Vice President, is reported to have said that the establishment of terminal facilities at Port Mann would in no way interfere with the announced plans for freight and passenger terminals in New Westminster. Mr. H. McLeod, General Manager and Chief Engineer, Canadian Northern Ry., accompanied Mr. Mann, and together they went over the route of the line in New Westminster and on to Port Mann.

Two survey parties have just come out of the field from the Thompson River district, on account of the ice and snow making the work impracticable, and three other parties are expected to give up work almost immediately. It is expected that contracts will be let for some of the heavier work in the Fraser Canyon in the near future.

Vancouver Island.—A line has been located for 100 miles from the gorge at Victoria to Barkley Sound and has been approved for the first 10 miles. The gradient is 1½% compensated; the curvature is fairly heavy and in some cases has been sacrificed in order to obtain this gradient. The highest summit is 800 ft.

A Victoria dispatch, Dec. 19, says tenders have been asked for the first section of the Vancouver Island line, the work to be completed in 1911. (Dec., 1910, pg. 1031.)

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers to distinctly understand that we are not paid for the publication of any of this matter and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

The Tallman Brass and Metal Co., Hamilton, Ont., has got out an Arctic Metal watch fob.

The Montreal Steel Works, Ltd., is paying 10% dividend on its common stock for 1910, the highest previous dividend being 7%.

The Dominion Wire Rope Co., Ltd., Montreal, incorporated under the Canada Joint Stock Companies Act, has been licensed to carry on its business in Manitoba, with S. C. Dunn, Winnipeg, as its agent.

The Canadian Westinghouse Co., has issued circular 1098, describing and illustrating various types of switchboard indicating meters, direct current indicating meters, alternating current indicating meters and type K indicating meters for direct and alternating current, etc

Taylor & Arnold, Ltd., railway material and supplies, Montreal, have opened an office in the Scott Block, Main Street, Winnipeg, with G. C. Walker in charge, to look after all the company's western interests.

The Westinghouse companies have issued a neat pocket diary for 1911, containing interesting data and formulae relating to electrical and other engineering matters, and giving, amongst others, a condensed description of the electric locomotives supplied for the G.T.R. St Clair tunnel.

A. W. Wheatley, heretofore Manager Montreal Locomotive Works, having been appointed Manager of the American Locomotive Co.'s plant at Dunkirk, N.Y., Percy Webb, heretofore Engineer of Construction, has been appointed Manager Montreal Locomotive Works, and D. W. Fraser, heretofore Superintendent, has been appointed Works Manager.

Robert W. Hunt and Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $50,000 and office at Montreal, to carry on the business, in all its branches, of civil mechanical, mining and electrical engineers, analysts, metallurgists, surveyors, assayers, examiners and inspectors, to take over the Canadian business of Robt. W. Hunt and Co., and also to acquire the business and carry out the contracts of the Standard Inspection Bureau Ltd., incorporated under the Ontario Companies Act.

The C.P.R. has taken offices in the newly built Liver Building, situated on the water front, opposite the Princes Landing stage, Liverpool, Eng., and we are officially advised that all its Liverpool offices will be concentrated there about May 1.

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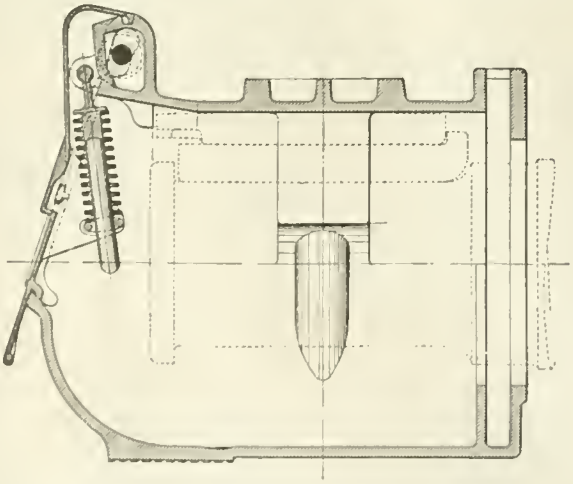

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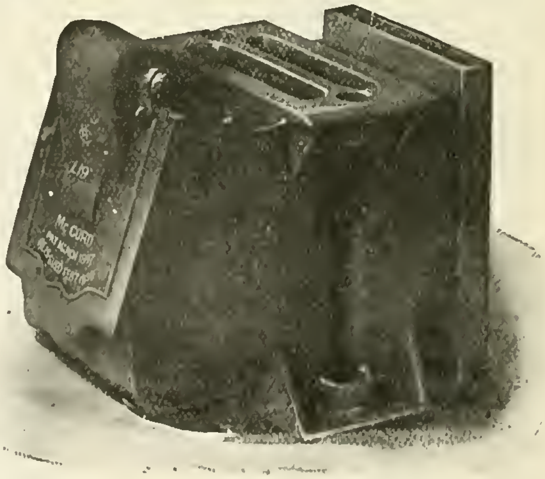

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How the Foreman Can Promote Shop Efficiency.

By E. T. Spidy, Instruction Card Inspector C. P. R. Angus Shops, Montreal.

The shop foreman's success in this direction depends, to a large extent, on the limits to which he can exercise his power to make alterations in the shop and its methods of working, and the amount of co-operation he receives from his superiors, as well as from the men under his charge. A foreman is in reality the pivot upon which the smooth running of the shop depends. He has to bear the load laid on him by his superiors in his responsibility for efficient output, and he has also to keep his men "well oiled" in order to ensure the smooth running of the inner working of the shop. This double responsibility must always be kept in view. The situation is governed by two words which are the keynotes of all efficient shop management. They are system and co-operation. Bear in mind that when you have a system that ensures the co-operative efforts of the men, and gives them confidence in your acting right towards them, so surely will your output be increased.

The following discussion is intended to be helpful to the foreman who intelligently desires to make the most of the machinery in his care. The questions and suggestions are based on an average machine shop, where all the machinery may not be of latest type, but where the best possible efficiency is desired. The questions are not arranged in order of importance, for it would be difficult to decide which was the most important.

"Is my piecework system in good condition—can I improve it in any way?" The foreman is often called upon to set a price for a piece of work. Considering the multifarious duties he has to perform, it is almost beyond reason to expect that all the prices he makes are good, either from the employer's or employe's point of view, and his knowledge as to what a job is worth is often left to the workman's honesty on the first piece, or to his own judgment in comparing it with similar jobs. A foreman does not get the time to study each job sufficiently. The time has come when uncertain methods like this have to be abandoned and more accurate information on the subject obtained. The situation may be improved by the setting apart of a man, whose duty it should be to study the work, the machine, the man, and the conditions under which he works, and also to set the price. This man will be responsible for any information the foreman should require with reference to the work and must be on hand when the foreman approves of the price submitted. Not only will this man relieve the foreman of a vast amount of work, but in a short time he will be of great value to him. He will be able to not only supply the foreman with details as to the condition of the machines, but also to suggest new tools, jigs, etc. He will become an expert in this line. In selecting him the best possible judgment must be used, for the success of the system will depend largely on him. He must be a man of average experience, fairly well educated and a good workman, a man of activity and energy, and one not afraid of the feeling he will at first arouse. More than likely the workmen will be prejudiced against him at first, but he must work to gain their confidence, so that finally with their co-operation the best results or maximum efficiency will be attained. His success in obtaining the co-operation of the men will do more toward efficiency than any driving system that exists or ever did exist.

"Have I machines that are overburdened or doing a class of work for which they are not suited?" It may not be possible to rearrange the machines in the shop, but as it is the foreman's duty to assign the work to them he should be careful that it is proportioned equitably and not to have a light machine doing a class of work beyond the range it was designed for. He should be on the lookout to avoid congestion. More machine failures are to be traced to the unsuitability of the work operated on than from any other cause, and this may often be obviated by a little discretion in assigning the work to the machines.

"In what condition are the machines? Are they in a state of good repair?" This is a point too often neglected and often a couple of men may be seen around the shop continually "patching up" the machines. To maintain efficiency it is necessary to keep up a high standard of repair, and when anything goes wrong to have it repaired properly rather than to "patch it up for the time being," for it pays in the long run in the life of the machine.

"Do any machines require re-speeding?" The progress made during the past few years in high-speed steel, and the cutting speeds possible with it, as compared with ordinary carbon steel, have made it necessary to revise the speed of the machines in order to take full advantage of its properties. There is little gain in using high-speed steel tools unless they are operated at their maximum cutting speed. Certain machines may have a large enough range to cover this, but many will be found deficient. Drilling machines require attention especially in shops where they are not of modern type. While in the case of lathes, boring mills, etc., feed and depth of cut may be easily increased, a fast feed on a drill necessitates a high cutting speed for efficient work, and a machine is required to run up to 300 r.p.m. to keep in tune with modern high-speed drills.

"Am I using the best steel obtainable? Do I know what the best steel is?" This is a question well worth studying and will pay well, for a large item on the expense account depends on it. It is admittedly more the work of a specialist, but the foreman should know, as so many new and different steels are at present on the market, all of which claim to be the best. No doubt many have special features worth consideration, and they should be tested to find which one is best suited to each class of work and the machines. No definite rule can be laid down as conditions vary greatly, so experiment is the only satisfactory method of obtaining any reliable information.

"Are my tool standards correct?" All shops nowadays have tool standards in some condition or other, and it will not be necessary to emphasize having a standard shape for grinding cutting tools to. Standardization may be carried too far, however, because good practice shows that work of large diameter requires different cutting lip angles on the tools from that required by average work. Much information on this point may be obtained from grinding machine manufacturers and although too much reliance must not be placed on it, yet modified by results of experiments, a considerable saving may be effected.

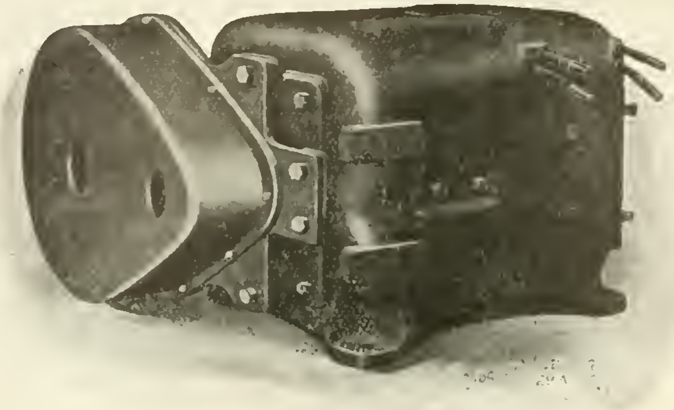
"Do the men receive their tools in a satisfactory way?" This question of distribution is important, for in order that a machine may pay the best dividends it must be in constant use. Therefore when tools require replacing they should be collected from the men and new tools delivered to them, thus avoiding the necessity of their walking to the tool stores to wait about or otherwise waste time. A man may be permitted to grind his tool when it only requires touching up, but when he has any amount of metal to grind away it should be sent to the tool grinding department. A sufficient nuber of grindstones should be in the shop and should be well placed to avoid the men congregating at them.

"How is the tool room stocked? Are there sufficient tools ready for delivery?" Nothing will tend to drag back a shop more than a deficiency in the number of tools. Having decided what steel is best, have a quantity of tools made so that the workman will not have to slow down his machine because he is obliged to use an inferior tool. Firms are naturally slow about buying a lot of high-speed steel on account of its high price, but first decide if it is worth it, and, if it is, get enough tools made to be of use to you and not enough to go on with. The expense of the more elaborate tools, such as milling cutters, jigs, etc., requires that a system of checking be adopted that the tool may be traced if needed urgently anywhere else. Small metal checks with the men's number on will answer admirably, the man giving a check for each tool he receives, the check being placed where the tool was taken from. Obviously there must be a systematic arrangement of tools in the tool room to operate this system successfully.

"Do the men have trouble in getting their work?" It is the foreman's duty to see that the men are supplied with work, but apart from seeing that the work is suitable to the machine, he must employ a method by means of which the men know what is to be done next, and not to have them waiting on him or any of the gang bosses for information. It is not possible without an extensive system of instruction to entirely eliminate this difficulty, but much may be done by careful forethought. This matter is receiving much attention from some of the more progressive concerns, and card systems of instruction to the men are being developed to a high degree.

"What kind of hoist service have the men at their machines for individual use?" The individual hoist service a man has at his command has much to do with his output. The position of the machine and the roof construction of the shop are the main factors in determining the overhead rail arrangement applicable. Compressed air hoists of the cylindrical type are being gradually recognized as superior for this purpose, although not always applicable by reason of their length, but a power hoist of some description should be used in preference to hand blocks. Where machines are arranged in lines, end to end, a continuous overhead rail is economical as it will not be necessary to supply a hoist to each machine. This system is also good in connection with heavy bench work, where the work may be transported from the vise to the shop trucks or anywhere required. When machines are separated a radial crane track is very serviceable, or, where this type is undesirable, a semicircular rail suspended from the girders and serving two or three machines is often good. The foreman should have little difficulty in finding the type best suited to his requirements.

In Conclusion.—Many foremen may say that they have not the time to study these questions in the detail, but let them remember that unless they do give thought to these details they will progress little beyond their present state. It is in considering the details that progress is to be obtained, for it is the little parts that make the whole. Much may even be attained by the judicious placing of apprentices. See that the men are provided with sufficient light. See that there is an adequate supply of water or cutting compound; a system of overhead supply to each machine with a return flow to the pump beneath the floor is worth considering. Belts should be looked after and an indicator system should be employed to enable the workman to locate the belt-lacer when required. This indicator system may also be employed for other officials, if considered necessary. If the foreman has not the time to look to these details, then it is up to the management to give him such assistance that he may be in the position to con-



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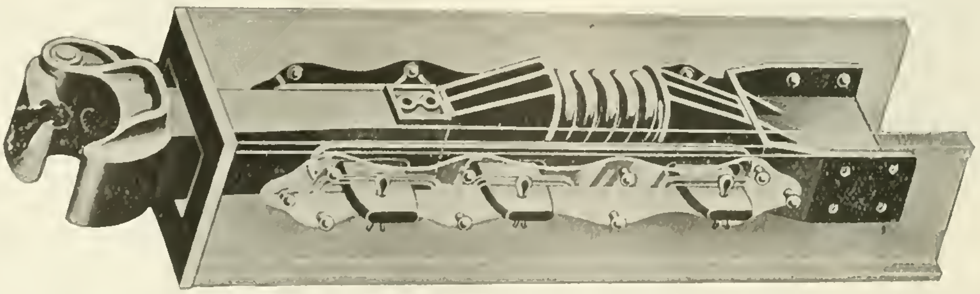

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sider them. There must be harmony in the management and, although somewhat difficult to obtain, the co-operation of the workmen. When combined with systematic organization, no doubt remains as to ultimate results.—Railway Age Gazette.

◆

Railway Finance, Meetings, Etc.

Alberta Ry. and Irrigation Co.—Approximate net profits from all sources, exclusive of land sales, for Oct. 1910, $35,712, against $52,722 for Oct. 1909. Cumulative net profits for four months ended Oct. 31, 1910, $108,493. Approximate railway receipts for Nov. 1910, $35,333, against $40,860 for Nov. 1909.

Atlantic and Lake Superior Ry.—Judgment has been given in the Quebec courts against the company, in favor of Z. Perrault and E. Gervais, contractors, for $33,219.23 and interest for work done in building the line.

Canadian Pacific Ry.—A Montreal dispatch says that of the 24,000-odd shareholders in the C.P.R., Sir Thos. G. Shaughnessy recently stated that about 2,500 were Canadians.

Dominion Atlantic Ry.—Gross earnings for Oct., 1910, $115,400, against $136,615 for Oct., 1909. Aggregate gross earnings for four months ended Oct. 31, 1910, $588,800, against $611,817 for same period 1909.

Esquimalt and Nanaimo Ry.—A meeting of shareholders was held at Victoria, B.C., Dec. 29, to sanction the creation and issue of bonds, and authorize and approve the form of mortgage to be given to secure the payment of them.

Guelph Junction Ry.—The directors have authorized the issue of bonds for the increased stock which the city of Guelph now holds, since the private shareholders were relieved of their shares. The company has issued $150,000 of stock, which is all held by the city.

Lake Superior Corporation.—A press dispatch from Philadelphia, Pa., states that the directors are considering an issue of 4% bonds for the purpose, among other things, of retiring the present income bonds.

New Brunswick Southern Ry.—The Board of Railway Commissioners is being asked to recommend the Governor-in-council to sanction the lease of this line to the C.P.R. for 999 years, from Jan. 1.

Quebec and Lake St. John Ry.—Total earnings for Nov. 1910, $55,124.86, against $53,251.05 for Nov., 1909. The mileage open during the two periods mentioned, was 285.4, earning an average of $193.11 per mile, and 285, earning $186.84, respectively. Aggregate total earnings for 11 months ended Nov. 30, 1910, $560,454.36, mileage operated 285.4, earnings per mile, $1,975.09, against $550,984.11 aggregate total earnings; 285 miles operated, and $1,939.82 earnings per mile, for same period, 1909.

Quebec Central Ry.—Gross earnings for Sept., $105,400.74; expenses, $68,732.97; net earnings, $36,667.77, against $102,442.35 gross earnings: $64,910.83 expenses; $37,531.52 net earnings for expenses; $114,922.31 net earnings for September, 1909. Gross earnings, for Oct., 1910, $100,405.87; expenses, $66,136.36; net earnings, $34,269.51, against $101,485.82 gross earnings; $68,917.43 expenses; $32,568.39 net earnings for Oct., 1909. Aggregate gross earnings for four months ended Oct. 31, 1910, $461,684.05; expenses, $292,495.69; net earnings. $169,188.36, against $413,161.42 aggregate gross earnings; $265,670.72 expenses; $147,490.70 net earnings for same period 1909.

St. Maurice Valley Ry.—The Board of Railway Commissioners is being asked to make a recommendation to the Governor-in-council to sanction the leasing of this line to the C.P.R. for 999 years from Jan. 1.

St. Mary's and Western Ontario Ry.—A meeting of the bondholders was held at Embro, Dec. 6, at the request of the town of St. Mary's, to consider what steps should be taken in view of the fact that the interest on about $80,000 of bonds, held by a number of townships through which the railway passes, is over two years in arrears. The bonds are secured by a second mortgage on the property, and representatives of the company, stated that the revenue was not sufficient to meet the interest on the first mortgage, so that there was nothing available for the second mortgage, and that there was no prospect of any substantial increase of revenue, unless some further extension of the road were made.

Temiscouata Ry.—Profits on operation for Sept., 1910, $3,736, and for nine months ended Sept. 30, 1910, $34,768.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—Following are the officers and directors for the current year:—President, L. M. Hill, St. Paul, Minn.; Vice President, F. B. Brown, Seattle, Wash.; Chief Engineer, A. H. Hogeland, St. Paul; Assistant Chief Engineers, A. Stuart, Seattle, Wash., and J. H. Kennedy, Grand Forks, B.C.; other directors, A. H. MacNell, K.C., W. H. Parker, Vancouver, B.C.; A. M. Thomas, F. M. Studley, Seattle.

◆

Dipper Dredge for Railway Embankment.

By F. N. Smith, Resident Engineer B. C. Electric Railway, Abbotsford, B. C.

It may be of interest to some of your readers to learn of the building of a large embankment from side-borrow on the B.C. Electric Ry.'s Fraser Valley branch, across Sumas Prairie in the southern part of British Columbia. The Fraser Valley branch is a 60-mile electric line in the valley of the Fraser River, connecting New Westminster and Chilliwack and touching the international boundary at Huntingdon. There is nothing out of the ordinary in any of the construction, with the exception of the three miles across Sumas Prairie, about 15 miles from Chilliwack. This prairie is flooded every year by the back water from the Fraser during the June freshets, so it was necessary to build an embankment three miles long and 17 ft. high to be above this flood water.

The contract was let Aug., 1909. The contractors used 3 cu. yd. drag scrapers operated from towers, the material being dumped between the towers and the borrow pit. While about 50% of the material was put in place this way the contractors were unable to complete the dump owing to the soft condition of the clay soil when mixed with water. The contract was relet in April, 1910, to Ironside, Rannie, Campbell & Pike, of Vancouver, and they have successfully completed the work, using floating dredges, thereby handling the material as dry as possible. The accompanying illustration shows one of the dredges at work, where the top of the dump is 22 ft. above the water. The boom is 75 ft. long and the dipper has a capacity of 2½ cu. yds. This dredge has put up 2,000 cu. yds. per day of two 8-hr. shifts, using four men to a shift. It was built by J. N. Pike, of the contracting firm, and the machinery was furnished by the Marion Steam Shovel Co.

◆

White Pass and Yukon Railway

The balance sheet for the year ended June 30, 1910, shows that there was a balance brought forward from the previous year, of £57,932, from which were paid, to sinking fund, £18,162; dividends, £27,500, leaving £12,270, which, with the profit for the year added, £40,894, leaves a balance to be dealt with this year of £53,164, against £57,913 for the previous year. During the year the number of passengers carried was 14,846; freight, 22,969 tons, against 12,192 passengers, and 24,617 tons of freight in the previous year.

S. H. Graves, President of the local companies, in speaking on the report at the recent annual meeting in London, Eng., said that the year had been a trying one. The chief feature was the shipment of heavy machinery, and although these plants had displaced a large population of hand miners, and in consequence reduced the traffic from passengers and the importation of foodstuffs, he looked forward to history repeating itself, which showed that in the long run the substitution of machinery for hand power tended to increase rather than diminish employment. Another feature was the damage to property, and dislocation to service on both the railway and the river occasioned by the abnormal climatic conditions. The year had, however, been one of substantial progress as regards the development of the Yukon. In the Klondike new and important installations had been completed and others inaugurated, which gave promise of continued activity in the future. One of the dredges built this year in the Klondike was the largest in the world, some of the single pieces of its machinery weighing nearly 30 tons. Work upon various quartz properties in the Klondike had been prosecuted during the year, with varying results, and some of the owners appear confident as to the future. In the White Horse district the ore branch of the railway had been extended some five miles, and ore shipments commenced in September. But the delay in the completion of the ore branch, caused by the floods already mentioned, coupled with the shortage of labor which prevailed this year on the Pacific coast, so retarded mining operations that further development was still necessary before ore shipments could be steadily maintained on the contemplated scale. Meanwhile, until a steady tonnage was assured, the cost of keeping the ore branch open through a Yukon winter would hardly be justified, and for this winter it was thought better not to incur the expense. In the Windy Arm district work had been prosecuted with renewed activity on some of the most promising of the properties, and ore shipments from them were increasing. The Atlin district had also been active throughout the season and increased its output. None of the mining districts which are served by the line had failed to show material progress during the year.

◆

The Boston and Maine Rd. is said to be trying to buy the Quebec Central Ry.

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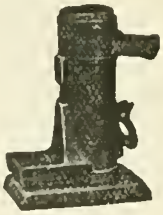
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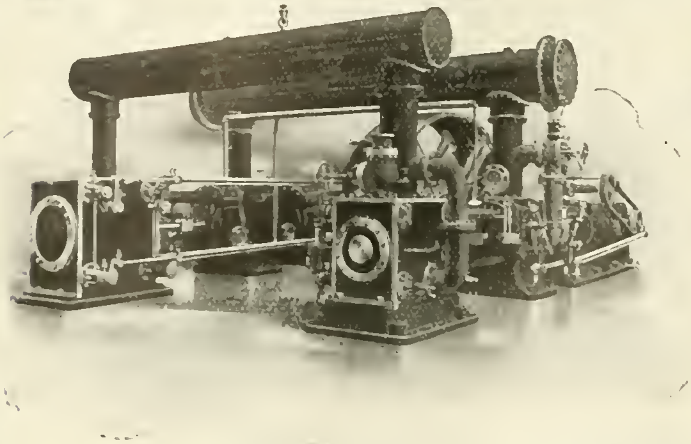

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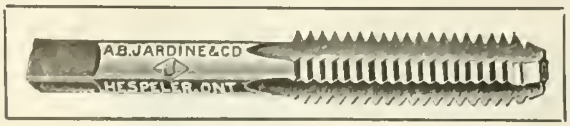

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Orders by the Railway Commissioners.

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The dates given of orders, immediately following the numbers, are those on which the hearing took place and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the [illegible]

12383. Nov. 25.—Authorizing Tillsonburg, Lake Erie and Pacific Ry. to build spur for Ingersoll Nut Co., Ingersoll, Ont.

12384. Nov 24.—Approving proposed work in connection with drain to be built along and under C.N.O.R. right of way, in L'Orignal.

12385. Nov. 26.—Authorizing C.N.Q R. to open for traffic its Montmorency branch from Hedleyville Jct., to the Montmorency Lumber Co.'s pulp mill 7.62 miles.

12386. Nov. 26.—Authorizing Montreal and Southern Counties Ry. to open for traffic, the portion of its line from St. Denis St., St. Lambert, to Longueuil, Que., 3½ miles.

12387, 12388. Nov. 25.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across Woodstock, Thames Valley and Ingersoll Ry, in Woodstock, and across Bell Telephone Co.'s wires at lot 1, con. 14, London tp.

12389. Nov. 25.—Authorizing Western Canada Power Co. to erect wires across C.P.R. between Pitt River and Westminster Jct., B C.

12390. Nov. 21.—Approving Edmonton, Yukon and Pacific Ry. right of way plan through west half of block 13 of Hudson's Bay Co.'s reserve, Edmonton, Alta., reducing the width from 49½ ft. on north side of centre line to 25 ft.

12391. Oct. 13—Authorizing C.P.R. to operate trains over G.T.R. spur to Horse shoe Quarry Co.'s premises, St. Marys, Ont., and to build spur for Horseshoe Quarry Co., to connect with G.T.R spur, to be completed within three months.

12392. Nov. 28—Authorizing Western Canada Power Co. to erect wires across C.P.R. New Westminster Branch, B C.

12393. Nov. 26.—Authorizing C.N.O.R. to build between lots 15 and 16, Junction Gore, Gloucester tp

12394. Oct. 26.—Approving location and detail plans of proposed G.T.R. station building at corner of McGill and Youville Sts., Montreal.

12395.—Nov. 28—Authorizing C.P.R. to build temporary spur for Algoma Steel Bridge Co. across Winnipeg Electric Ry. and to join same at Louise Bridge, and ordering that all C.P.R. trains before making crossing be brought to a stop and flagged over crossing, the spur to be built within three months.

12396. Nov. 28—Authorizing C.N.O.R. to divert and cross by a bridge, public road in St. Andrew's parish.

12397.—Nov. 28.—Authorizing C.P.R. to build within three months, an industrial spur for Boyd and Fordham, Vancouver, B.C

12398. Nov. 28.—Authorizing C.P.R. to build spur for W. H. Wortman, between Saskatchewan and Dublin Aves., Winnipeg.

12399. Nov. 28.—Ordering C.P.R. within 90 days to install improved electric bell at crossing of Princess Ave., Lachute, Que.

12400. Nov. 28.—Authorizing city of Woodstock, Ont., to lay water pipes under C.P.R. at Tecumseh St.

12401. Nov. 26.—Authorizing Canadian Light and Power Co. to erect wires across Bell Telephone Co.'s wires at Melocheville, Que.

12402. Nov. 14.—Ordering Vancouver, Fraser Valley and Southern Ry. to insert diamond where it crosses Vancouver, Victoria and Eastern Ry., and that crossing be protected by interlocking plant, derails, and home and distant signals on both lines on each side of crossing.

TURN RULE

12403. Sept. 6.—Authorizing V.V. & E. Ry. & Nav. Co. to carry spur over B.C. Electric Ry. and certain streets in Vancouver B.C.

12404. Nov. 28.—Authorizing town of Oshawa Ont., to lay sewer across lands and under G.T.R. at lot 7, east Whitby tp.

12405. Nov. 28.—Ordering Central Ontario Ry. to provide farm crossing for E. Lynch, Maynooth, under railway bridge where line crosses his farm.

12406.—Nov. 14.—Authorizing C.N.O.R. to cross and divert public road in lots 275 and 276, St. Benoit parish.

12407. Nov. 26.—Authorizing James Bay and Eastern Ry. to build between lots 19 and 20, r. 1, Ashuapmouchouan tp., Que.

12408. Nov. 29.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across Tillsonburg, Lake Erie and Pacific Ry. (C.P.R.), in North Oxford tp.

12409.—Nov. 29.—Authorizing C.P.R. to build spur for Provincial Reformatory, Guelph tp., Ont.

12410. Nov. 28.—Authorizing G.T.R. to build siding and spur to premises of Railway Signal Co. of Canada, Ltd., Lachine parish, Que.

12411. Nov. 30.—Approving revised location of C.P.R. Bulyea branch from mileage 0 to 18.49 on Pheasant Hills branch, Sask.

12412. Nov. 28.—Authorizing C.N.Q.R. to build spur to Montreal Steel Works, Ltd., Montreal.

12413. May 12.—Declaring, in complaint of G. Taylor, of Winnipeg, that rate properly chargeable by C.N.R. on grain from Buchanan, Sask., to Headingly, Man., was 17c. per 100 lbs. We were officially advised, Dec. 19, that this order had been recalled, and would probably be cancelled.

12414. Nov. 30.—Authorizing Tillsonburg. John Morrow Screw Co., Ingersoll, Ont.

12415. Nov. 30.—Adding Quebec, Montreal and Southern Ry. as party to application of W. A. Stewart, Napierville, Que., and village of St. Cyprien, complaining of inadequate accommodation and unsatisfactory train service furnished by Napierville Jct. Ry.

12416. Dec. 1.—Extending to June 1, period during which North American Telegraph Co. may charge telephone tolls which it was previous to July 13, 1906, authorized to charge.

12417, 12418. Dec. 1.—Extending to June time within which contract forms of National, American, Canadian and Dominion Ex. Co.'s are approved.

12419. Dec. 1.—Extending to June 1 time within which forms of money and freight receipts of Maritime Ex. Co. are approved.

12420. Dec. 1.—Extending to June 1 period during which Bell Telephone Co. may charge tolls which it was authorized to charge previous to July 13, 1906.

12421. Dec. 1.—Extending to June 1 time within which contract forms of United States and Great Northern Ex. Cos. are approved.

12422. Dec. 1.—Authorizing C.P.R. to build temporary bridge to carry Notre Dame St. over tracks leading to its Place Viger terminal, Montreal, pending completion of permanent bridge.

12423, 12424. Dec. 1.—Extending to June 1 time within which C.P R. and G.N.W. Telegraph Cos. may be allowed to charge tolls authorized under 7-8 Ed. 7, chap. 61.

12425. Dec. 1.—Extending to June 1 time within which White Pass & Yukon Ry. may be allowed to charge tolls authorized under 7-8 Ed. 7, chap. 61.

12426. Dec. 1.—Authorizing Montreal Terminal Ry. to build siding across Victoria Ave., Montreal East.

12427. Dec. 1.—Amending order 12249, Oct. 12, 1910, authorizing T.H. & B.R. to build spurs from Grant Ave. to Wentworth St., Sherman Ave. and Prospect St., Hamilton, Ont.

12428, 12429. Dec. 1.—Authorizing Canadian Niagara Power Co. to erect wires across Bell Telephone Co.'s wires at two points in Bridgeburg, Ont.

12430. Dec. 2.—Approving proposed change in location of Georgian Bay and Seaboard Ry. (C.P.R.) in Orillia, Ont.

12431. Sept. 26.—Authorizing C.P.R. to build spur and four sub-spurs in Brandon, Man.

12432, 12433. Nov. 30, Oct. 10.—Authorizing G.T.P.R. to build on Main, Walsh, Harold and Hardisty Sts., Fort William, Ont.

12434. Dec. 2.—Adding city of Montreal as party re highway crossing on C.P.R. known as Pacific Ave., St. Louis du Mile End, and ordering C.P.R. to place day and night watchman there.

12435. Oct. 14.—Dismissing application of Michigan Sugar Co. for order against Chatham, Wallaceburg & Lake Erie Ry. re rate on sugar beets.

12436. Dec. 3.—Authorizing G.T.R. to build siding from its Lachine canal bank branch on Lachine canal reserve to a point opposite Canadian Light & Power Co.'s property.

12437. Dec. 3.—Authorizing G.T.R. to build branch to Canadian Bag Co.'s premises, Toronto.

12438. Sept. 17.—Authorizing C.P.R. Co. to build spur to Great West Lumber Co's premises Red Deer, Alta.

12439. Sept. 21.—Dismissing C.N.R. application for authority to build a temporary spur and branches in Regina, Sask.

12440. Dec. 2.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across Bell Telephone Co.'s wires in Brantford tp.

12441. Dec. 3.—Authorizing C.P.R. to build spur for Weldman & Co., Winnipeg.

12442. Dec. 6.—Authorizing Shawinigan Water and Power Co. to erect wires across Farmer Lumber Co.'s switch from C.P.R. loop, Wabasso branch, Three Rivers, Que.

12443. Dec. 1.—Adding town of Lachine, Lachine parish, and Montreal West as parties to application on behalf of town of St. Pierre, Que., complaining of closing by G.T.R. of Simplex St., Lachine.

12444. Dec. 1.—Dismissing application of W. Raymond, Ste. Agathe des Monts, Que., for order directing C.P.R. to build farm crossing on lot 36, r. 10, Morin Canton, Terrebonne co.

12445. Dec. 1.—Dismissing application of A. Heroux, St. Maurice de Champlain, Que., for order directing C.P.R. to build farm crossing lot 417.

12446. Dec. 1.—Extending to July 1 time for completion of work in connection with deviation of water main under Central Vermont Ry., St. Alexandre parish, Que.

12447. Dec. 1.—Ordering C.P.R. to file before Jan. 15, plans for erection of gates, giving details of location and layout, to be installed at Westminster Ave., Montreal West; gates to be installed and work completed before June 15.

12448. Dec. 1.—Ordering Maine Central Rd. to place snowfence, at present obstructing view on west side of crossing at Main Road, Eton parish, Que., in such location and condition as the Board's Engineer may direct, and erect and maintain electric bell, to be approved by the Board.

12449. Dec. 1.—Adding Canada Paper Co. as party to application re G.T.R. crossing of public road leading to St. Francis River bridge, Windsor Mills, Que.

12450. Dec. 1.—Adding city of Montreal as party to application of town of Notre Dame de Grace, Que., for order amending order 8208, Sept. 14, 1909.

12451. Dec. 1.—Ordering C.N.Q.R. to build farm crossings for A. Paquette, St. Sauveur parish, Que., before May 15, 1911.

12452. Dec. 2.—Dismissing application of St. Maurice & Champlain Telephone Co. for order directing Portneuf Telephone Co. to abide by provisions of agreement dated Mar. 6, 1907.

12453. Dec. 1.—Extending to May 15 time within which city of Montreal may build tunnel under C.P.R. at St. Lawrence Boulevard crossing.

12454. Sept. 16.—Authorizing city of Calgary, Alta., to build subway at Eighth St. west; work to be completed Sept. 1, 1911.

12455. Dec. 1.—Ordering that G T.R. cease from interfering with siding on its property adjoining that of D. McManamy, Sherbrooke, Que., and to leave a passage-way 10 ft. wide for entrance to his building, also to leave grain-carrier for carrying grain to his building.

12456. Dec. 2.—Ordering C.N.Q.R. to fence its property and tracks at Hochelaga terminals, Montreal, equip ends of house-tracks with modern stop-blocks, install gates at Moreau and Prefontaine Sts., with tower near Moreau St., and install gates at St. Germain St., with day and night watchman.

12457. Dec. 6.—Authorizing town of Wiarton Ont., to lay sewer under G.T.R. where its two switches leading to Crown Portland Cement Co., cross Brown St.

12458 to 12461. Dec. 6.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across T H. & B. Ry. and Hamilton Radial Electric Ry. at two points in Hamilton and across Bell Telephone Co.'s wires in Downie tp.

12462 to 12465. Dec. 6.—Authorizing Shawinigan Water & Power Co. to erect wires across St. Maurice Valley Ry., Wabasso branch at four points in Three Rivers, Que.

12466. Dec. 7.—Authorizing Quebec Ry., Light, Heat & Power Co., to erect wires across C.N.Q.R. on Charlesbourg Road, near Quebec.

12467 to 12468. Dec. 6.—Authorizing Water Commissioners for London, Ont., to erect wires across Bell Telephone Co.'s wires at two points.

12469. Dec. 7.—Extending to June 1, 1911, time for approval of Canadian Northern Telegraph Co. tolls, and allowing it to charge tolls authorized under 7-8 Ed. 7, chap. 61.

12470. Dec. 7.—Authorizing C.P.R. to build branch joining its Portal and Stoughton to Weyburn branches, across road allowance on west boundary of n.w. ¼ sec. 15 and road allowance on west boundary of s. w. ¼ sec. 22, tp. 8, r. 14, w. 2, m., Weyburn, Sask.

12471. Dec. 7.—Authorizing C.P.R. to build spur for Contractors' Supply Co. of Toronto, at mileage 20, on its Owen Sound sub-division, Caledon tp., Ont.

12472. Dec. 7.—Authorizing C.P.R. to build spur for Gibson, McCormack, Irvin Co. West Toronto, Ont.

12473. Dec. 7.—Authorizing C.P.R. to build spur for Redcliffe Manufacturing Co., Redcliffe.

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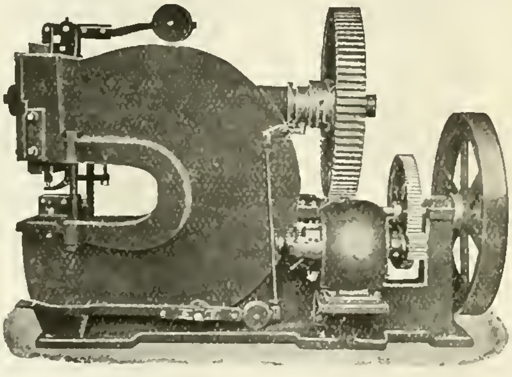

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THE LESSON

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12474. Dec. 6.—Rescinding order 12209, Nov. 7 1910, made upon application of C.P.R. to build spur for the Gres Falls Co., at mileage 2.22 from Piles Jct., Que.

12475. Dec. 6.—Authorizing C.P.R. to build spur for Canadian Tube & Iron Co., Montreal.

12476, 12477. Dec. 7.—Authorizing James Bay & Eastern Ry. to cross and divert public road in Indian Reserve, Loke St. John County.

12478. Dec. 7.—Authorizing C.P.R. to reconstruct bridge 11.9, over Assiniboine River at Headingly, Man.

12479. Dec. 7.—Extending to June 1, 1911, time for approval of G.T.P. Telegraph Co.'s tolls.

12480. Dec. 7.—Authorizing C.N.O.R. to cross and divert Broken Front St., Sidney, tp.

12481. Dec. 7.—Approving road diversion in s.e. ¼ sec. 14, tp. 53, r. 5, w. 5, m. North Alberta District.

12482. Dec. 7.—Dismissing application of city of Grand Forks, B.C., for order directing Kettle River Valley Ry. to carry out terms and conditions of agreement, and forthwith to build its railway so as to afford proper and adequate facilities for traffic from Grand Forks fo 50 miles up north fork of Kettle River.

12483, 12484. Dec. 7.—Authorizing C.P.R. to build spurs for Canadian Fairbanks Co., Saskatoon, and Outlook, Saskatchewan Flour Mills Co., Outlook, Sask.

12485. Dec. 7.—Authorizing Ontario Hydro-Electric Power Commission to use its transmission wires at 47 points.

12486, 12487. Dec. 6.—Dismissing application of Nepean tp., Ont., for leave to build crossing at Magee Ave., across Ottawa Electric Ry., and authorizing it to build highway crossing over Ottawa Electric Ry, at Strathcona Ave.

12488. Dec. 6.—Ordering C.N.Q.R. to place interlocking plant where it crosses Montreal St. Ry. near Valois Ave. and Ontario St. in proper shape within 10 days.

12489. Dec. 9.—Authorizing C.P.R to build two spurs for city of Calgary, Alta., in Victoria Park.

12490. Dec. 9.—Authorizing C.N.O.R to build across side road in lot 35, con. 1, Sidney tp.

12491. Dec. 9.—Authorizing North Bay Light, Heat and Power Co., to erect wires across C P.R. at Ninth St., North Bay Ont.

12492 Dec. 9.—Authorizing Dufferin Light and Power Co. to erect wires across C.P.R. at Centre St., Orangeville, Ont.

12493. Dec. 9.—Authorizing Gres Falls Co. to erect wires across C.P.R. at Three Rivers, Que.

12494. Dec. 9.—Authorizing Dufferin Light & Power Co. to erect wires across C.P.R. one mile west of Orangeville, Ont.

12495. Dec. 9.—Authorizing Stratford Light and Heat Commission to erect wires across G.T.R. at Ontario St., Stratford Ont.

12496, 12497. Dec. 10.—Authorizing Ontario Water Co., of Niagara Falls, to erect wires across Niagara, St. Catharines and Toronto Ry at two points in St. Catharines.

12498. Dec. 10.—Authorizing city of Winnipeg to lay water main under C.P.R. at Alfred Ave.

12499. Dec. 10.—Authorizing C.P.R. to build spur for Great West Felt Co., Elmira, Ont.

12500. Dec. 10.—Authorizing C.P.R. to build spur for University of Saskatchewan, at Sutherland.

12501. June 22.—Dismissing application of C.P.R. and Montreal Terminal Ry. for order interpreting certain provisions of order 4988, July 8 1908.

12502. Dec. 10.—Authorizing C.N.O.R. to connect with G.T.R. at Cobourg

12503. Sept. 21.—Dismissing application of Prudential Exchange Co., Lang, Sask., alleging discrimination by C.P.R. in rates on coal from Fort William and Port Arthur to Lang, as against Moose Jaw and Regina.

◆

Passenger Meetings at Rochester.—The Niagara Frontier Summer Rate Committee will meet at the Seneca Hotel, Rochester, N.Y., on Jan. 17, 18 and 19. The rate clerks will meet on Jan. 17 and 18 at 9 a.m., and the general meeting will be held on Jan. 19, at 11 a.m. The Great Lakes and St. Lawrence River Rate Committee will meet at the same place on Jan. 19, immediately after the adjournment of the Niagara Frontier Committee meeting.

The International Water Lines Passenger Association will meet at the same place, on Jan. 19, at 9 a.m.

MAINLY ABOUT PEOPLE.

John Galt, consulting engineer, formerly of Toronto, died at Vernon, B.C., Dec. 18.

H. D. Reid, Vice President Reid Newfoundland Co., arrived in Montreal from St. John's, Nfld., Dec. 7.

Hugh A. Allan, of the Allan Line, was in Montreal early in Dec., for a few days, and later returned to England.

Mrs. Yates, widow of the late Henry Yates, railway contractor, died at Brantford, Ont., Dec. 22, aged 82.

H. P. Dwight, President Great North Western Telegraph Co., celebrated his eighty second birthday in Toronto, Dec. 23.

Mrs. Hayter Reed, wife of the Manager in Chief C.P.R. Hotels, arrived in Montreal from England early in December.

A. R. Creelman, General Counsel C.P.R., and Mrs. Creelman returned to Montreal early in December from England.

G. Bury, who died in Montreal, Dec. 16, aged 69, was father of G. J. Bury, General Manager Western Lines C.P.R., Winnipeg.

R. Marpole, General Executive Assistant C.P.R., Vancouver, B.C. sailed from St. John, N.B., Dec. 2, for a three months holiday in Great Britain

R. Shaver, sub-contractor on the Esquimalt and Nanaimo Ry. Alberni extension, was married at Alberni, B.C., recently, to Miss M. Gibson.

Lord Strathcona contributed $5,000 towards the fund of $41,000 just raised in Winnipeg, to clear off the debt on the Y.M.C.A. building there.

Jas. Oborne, General Superintendent Ontario Division C.P.R., returned to Toronto, Dec. 12, from Great Britain, where he spent a six weeks holiday.

Col. Rathbun, President of the Rathbun railways and steamboat lines, and Mrs. Rathbun returned to Deseronto, Ont., early in December from England.

Barlow Cumberland, Vice President Northern Navigation Co., has been elected a fellow and corresponding member of the Literary and Historical Society of Quebec.

E. R. Gossett was presented with a cabinet of silver by the head office staff of the Canadian Northern Ry., Toronto, on his marriage, Dec. 7, to Miss H. M. Lee.

I. W. Hutchins was presented with a pair of gold cuff links by the G.T.R. advertising office employes, Montreal, Dec. 6, on leaving the company's service.

Mrs. A. Gendron, who died in Quebec recently, was mother of Mrs. S. N. Parent, wife of the Chairman of the National Transcontinental Railway Commissioners.

W. Hunt, for many years connected with the Panama Rd., who died in New York recently, formerly resided in Hamilton and Montreal, at which latter place he was buried.

W. D. Power, heretofore chief clerk Freight Department C.P.R., Vancouver, B.C., has been appointed Traffic Officer, Vancouver Board of Trade Transportation Bureau.

J. E. Davis, formerly a machinist in the G.T.R. shops at Stratford, Ont., is reported to have been appointed Master Mechanic of the Hocking Valley Ry., Columbus, Ohio.

C. M. Hays, President G.T.R. and G.T.P.R., was a guest at the annual dinner of the Dominion Commercial Travellers Association at Montreal, Dec. 19, when he spoke on transportation.

Martin Gower, Supervisor of Apprentices C.P.R., Montreal, was present at the recent meeting of the Society for the Promotion of Industrial Education, at Boston, Mass.

A. C. Shaw was presented with a diamond pin by his railway friends in Chicago, Ill., on his removal to Winnipeg, Man., as C.P.R. Assistant General Passenger Agent there.

C. B. Foster was presented with a gold watch by the C.P.R. passenger staff at Vancouver, B.C., on the occasion of his recent promotion as General Passenger Agent at Winnipeg.

R. Ivers, who resigned his position as locomotive foreman C.P.R., at Moose Jaw, Sask., a short time ago, on account of ill health, is undergoing treatment at the Sanitarium at Gravenhurst, Ont.

W. Whyte, Vice President C.P.R., and H. Sutherland, Executive Agent Canadian Northern Ry., have been elected directors of the Winnipeg Industrial Exhibition for the current year.

C. C. Wellerman was presented with a fur-lined overcoat by the members of the railway branch of the Y.M.C.A., Sarnia, Ont., on leaving to take up similar duties at the general Y.M.C.A., Matawa, Ont.

Lt.-Col. A. H. Macdonald, K.C., Secretary Guelph Junction Ry., Guelph, Ont., has been appointed a member of the parole board of the Provincial reformatory there, by the Ontario Government.

Hon. Angus McDonnell, who is railway contracting on the Esquimalt and Nanaimo Ry., Vancouver Island, left Nov. 26 for a holiday, which he is spending with his father and mother, the Earl and Countess of Antrim, in Ireland.

Neil Keith, a well known railway contractor, latterly engaged on the C.P.R. Weyburn-Lethbridge branch, disappeared from the camp at Ogeman, Sask., towards the end of November. His frozen body was found Dec. 14, several miles the camp.

W. D. Power was presented with a travelling bag and silk umbrella by the C.P.R. freight department staff, Vancouver, B.C., recently, on leaving the service to become traffic officer for the Vancouver Board of Trade Transportation Bureau.

J. L. Englehart, Chairman of the Temiskaming and Northern Ontario Ry. Commission, has presented his house and grounds, valued at $50,000, to the town of Petrolea, Ont., for use as a hospital, as a memorial of his wife, who died recently.

W. J. Shepperd, President of the Northern Navigation Co. of Ontario, and J. Playfair, of the Inland Navigation Co., have been elected directors of the Spanish River Pulp and Paper Mills, Ltd., which has taken over the Spanish River Pulp and Paper Company's business.

R. G. Harvey, railway contractor, who built the Brockville, Westport and Sault Ste. Marie Ry. (recently acquired by the Mackenzie, Mann interests), and the Halifax and Yarmouth Ry. (now part of the Halifax and South Western Ry.) died in Brockville, Ont., Nov. 27.

H. Williams, at one time in the service of the old Great Western Ry. and subsequently with the Canada Southern Ry. and its successor, the Michigan Central Rd., being Chief Dispatcher at St. Thomas, Ont., on retiring from active work, died at Winnipeg recently, aged 63.

Miss Mackenzie and the Misses Ethel and Grace Mackenzie, daughters of Wm. Mackenzie, President Canadian Northern Ry., left Toronto Dec. 14, for London,

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Eng., where Miss Grace Mackenzie will be married to Count de Lesseps in January. Mr. and Mrs. Mackenzie will prabably leave for England about the middle of January.

G. R. Fairhead, who has been appointed Commercial Agent Canadian Northern Ry., Hamilton, Ont., was born in Toronto, Mar. 6, 1882, and entered railway service in 1897, since when he has been, to 1902, clerk offices of Division Freight Agent, and Assistant Foreign Freight Agent G.T.R., Toronto; 1902 to Dec., 1910, in office of General Eastern Agent Canadian Northern Ry., Toronto.

W. Stitt, General Passenger Agent Eastern Lines C.P.R.; W. E. Davis, Passenger Traffic Manager; G. T. Bell, Assistant Passenger Traffic Manager; G. W. Vaux, General Passenger Agent, and H. R. Charlton, General Advertising Agent G.T.R., were present at Boston, Mass., Dec. 21, at a dinner given to N. E. Weeks and G. H. Watson, Chairman and Secretary respectively, of the New England Passenger Association.

E. J. Hebert, who has been appointed First Assistant General Passenger Agent Eastern Lines C.P.R., Montreal, was born there, June 18, 1864, and entered railway service Oct., 1879, since when he has been, to July, 1882, in General Office, G.T.R., Montreal; July, 1882, to May, 1905, in General Passenger Department C.P.R., Montreal; May, 1905, to Dec. 1, 1910, General Agent Passenger Department C.P.R., Montreal.

R. S. Logan, Assistant to the President G.T.R., John Pullen, Assistant Freight Traffic Manager G.T.R., R. Bickerdike and C. A. Jaques, both connected with various marine interests in Montreal, are interested in the formation of the Country Club of Montreal, Ltd., recently incorporated under the Quebec Companies Act, with a capital of $50,000, and office in Montreal, for the promotion of outdoor exercise and social intercourse.

Sir H. Montagu Allan, of the Allan Line; R. B. Angus, director C.P.R.; E. T. Galt, President Alberta Ry. and Irrigation Co.; C. M. Hays, President G.T.R.; C. R. Hosmer, director C.P.R.; Sir Thos. G. Shaughnessy, President C.P.R.; H. Paton, President Shedden Forwarding Co., and Jas. Ross, formerly President Dominion Coal Co., are interested in the incorporation of the Winter Club, Ltd., under the Quebec Companies Act, with a capital of $149,000, and office at Montreal, to maintain a club house for recreation and social intercourse.

In giving some biographical data referring to D. Crombie, in our last issue, we mentioned that he entered railway service in 1883, instead of in 1882, and also stated that from July, 1900, to Apr., 1906, he was Superintendent of Transportation Pere Marquette Rd., Detroit, Mich., and from Apr., 1906, to Oct., 1907, Master of Transportation G.T.R. Middle Division, London, Ont. He left Pere Marquette Rd. service early in 1903, and from then to early in 1907 he was engaged in private business, entering G.T.R. service early in 1907.

T. Hoben, Assistant Superintendent Canada Eastern Division Intercolonial Ry., who was visiting Chicago, Ill., died there suddenly, Dec. 4. His retirement, which was announced in our last issue, was to take place Dec. 31, and he was to be placed on the superannuation list, as from Jan. 1. In his early days he was associated with Alex. Gibson in the construction of the railway along the eastern side of the St. John River, now part of the C.P.R., and was later connected with the construction of the Canada Eastern Ry., now part of the Intercolonial Ry.

G. C. Wells, whose appointment as Assistant to Passenger Traffic Manager C.P.R., Montreal, was announced in our Dec., 1910, issue, was born at Brockville, Ont., Apr. 15, 1866, and entered railway service Mar. 6, 1882, since when he has been, to May 13, 1892, in General Passenger Department G.T.R., Montreal; May 13, 1892, to June, 1895, rate clerk Passenger Traffic Department C.P.R., Montreal; June, 1895, to Jan., 1898, chief rate clerk same office; Jan., 1898, to Nov. 22, 1904, Chief Clerk Passenger Traffic Department C.P.R., Montreal; Nov. 22, 1904, to Oct. 29, 1910, Assistant General Passenger Agent C.P.R. Eastern Lines, Montreal.

A. C. Shaw, whose appointment as Assistant General Passenger Agent C.P.R. Western Lines, Revelstoke and east, at Winnipeg, was announced in our last issue, was born at Detroit, Mich., of Canadian parentage, and entered railway service in 1880, since when he has been, to Mar., 1886, in city ticket office Great Western Ry. (now G.T.R.), Toronto; entering C.P.R. service in the District Passenger Office, Toronto, in Mar., 1886, he was later in the same year, transferred to the General Passenger Department, Montreal, where he filled various positions, until 1900, when he was appointed General Agent Passenger Department at Chicago, Ill., in which position he remained to Nov. 1, 1910.

G. A. Lizotte, whose appointment as General Agent Canada Gulf and Terminal Ry., is announced on another page, was born at Quebec, Nov. 1, 1863, and entered railway service in Apr., 1880,, since when he has been, to Sept., 1881, telegraph operator Quebec, Montreal, Ottawa and Occidental Ry., now part of the C.P.R.; Sept., 1881 to Oct., 1882, operator Troy, Greenfield and Hoosac Tunnel; Oct., 1882, to July, 1883, operator C.P.R.; Aug., 1883 to May, 1885, Chief Train Dispatcher Construction Department C.P.R.; June, 1885, to July, 1895, Chief Train Dispatcher Quebec and Lake St. John Ry.; July, 1895, to Nov., 1903, Auditor Freight and Passenger Receipts Pontiac Pacific Jct. Ry. and Ottawa and Gatineau Ry.; Aug., 1903, to 1905, Secretary Ha Ha Bay Electric Light Co.; Aug., 1905, to July, 1908, controller of train crews G.T.R.; July, 1908, to Oct., 1910, C.P.R. Telegraph Department.

A. Wilcox, whose portrait appears on the first page of this issue, was born at Kincardine, Ont., Jan. 2, 1865, and entered railway service in 1881, since when he has been, to 1883, successively, operator, ticket, and freight clerk Toronto, Grey and Bruce Ry., Owen Sound, Ont.; 1883 to 1887, operator and agent at various points and relieving dispatcher C.P.R. at Winnipeg; 1887 to 1890, train dispatcher C.P.R., Moose Jaw, Sask.; 1890 to 1903, Chief Train Dispatcher C.P.R. Moose Jaw, Sask.; 1903, Chief Train Dispatcher C.P.R. Cranbrook, B.C.; July, 1903, to July, 1904, Chief Train Dispatcher Canadian Northern Ry., Port Arthur, Ont.; July, 1904, to Jan., 1908, Superintendent District 2, C.N.R., Winnipeg; Jan., 1908, to May, 1909, Superintendent District 1, C.N.R., Port Arthur Ont.; May to Nov., 1909, Superintendent District 3, C.N.R., Dauphin, Man.; Nov., 1909, he was transferred to Port Arthur, Ont., as Superintendent District 1, which position he still holds.

E. A. Evans, who has resigned the position of Chief Engineer Quebec Ry. Light, Heat and Power Co., and Quebec Ry. Light and Power Co., was born in Kensington, London, Eng., Feb. 26, 1855, and between 1875 and 1883 was engaged as engineer on construction for the Cheshire Lines Committee (composed of the Midland, Great Northern and Great Central Rys.), and for the Lancashire and Yorkshire Ry. Coming to Canada in 1884, he was, in that and the following year, engaged on surveys for the projected Port Rowan and Lake Shore Ry., and the Pontiac, Pacific Jct. Ry., and for about a year, to Mar., 1886, was with the Geological Survey of Canada. Since then he has been, successively, Mar., 1886, to Jan., 1889, engineer Pontiac, Pacific Jct. Ry., Gatineau Valley Ry., and on surveys for the St. Lawrence bridge at Quebec; June, 1889, engineer in charge of re-alignment and improvement of grades, ballasting and general completion of the Quebec and Lake St. John Ry. from Whitehorse trestle to Roberval, 178 miles, and in charge of construction of branch line from Chambord Jct. to Chicoutimi; on the completion of this he was appointed engineer in charge of construction of Quebec city electric railway, and General Manager on the opening of the line. The company has since developed into the Quebec Ry., Light and Power Co., and has built a suburban line along the north shore of the St. Lawrence River to Ste. Anne de Beaupre and Cap Tourment, and also carries on a lighting and power business, with a large power development plant at Montmorency Falls; he held the position of General Manager and Chief Engineer until the end of 1909, when, on the absorption of some other light and power companies, he was appointed Chief Engineer. He is a member of the Canadian Society of Civil Engineers, was one of the founders of the Engineers' Club, Montreal, and took an active part in establishing the Canadian Street Railway Association, in which he has served as member of the executive committee, Vice President, and in 1908, President.

◆

Natural Gas Lighting on the C.P.R.—The C.P.R. has adopted the use of natural gas for lighting purposes, on its trains running north and south of Calgary, Alta. The gas will be transported from Brooks, about 114 miles east of Calgary, where the cars will be charged from the tanks. The medium of transportation consists of a flat car, on which are mounted 36 forged steel gas flasks, 18 of which are 10 ft. by 9¼ in. diar., and 18 15½ ft. by 9¼ ins., and are capable of carrying 100 atmospheres. They are equipped with reducing valves for charging the cars at reduced pressure.

The Interstate Commerce Commission issued orders Dec. 21 reducing the price heretofore exacted by the Pullman Co. for upper berths in sleeping cars. An order also was issued providing that after Feb. 1 certain specified reductions in the charges for lower berths northwest of Chicago shall be made by the Pullman Co.

La Compagnie de Pulpe de Chicoutimi has been re-incorporated under the Quebec Companies Act, with a capital of $1,000,000, and office at Chicoutimi, to manufacture and deal in pulp, paper, etc., and in connection therewith to build and operate tramways, wharves, docks, steam and other vessels, etc. The provisional directors are Hon. N. Garneau, G. Lemoine, J. A. Couture, Quebec; I. N. Belleau, Levis; W. Hanson, Montreal; F. X. Gosselin and J. E. A. Dubuc, Chicoutimi.

During Sept. and Oct., 1910, 35 employes were killed and 39 injured in the course of their work on Canadian railways. Of the fatalities, 19 were due to being run over, four to dynamite explosions, three to being caught between cars, two each to collisions and to falls, one each to derailment, to falling material, to a gunshot wound, to drowning and to the explosion of a locomotive; while of the other accidents, 12 were due to being run over, seven each to being caught between cars and to falls, four to collisions, three each to falling material and to derailments, two to being struck by locomotives, and one to machinery.

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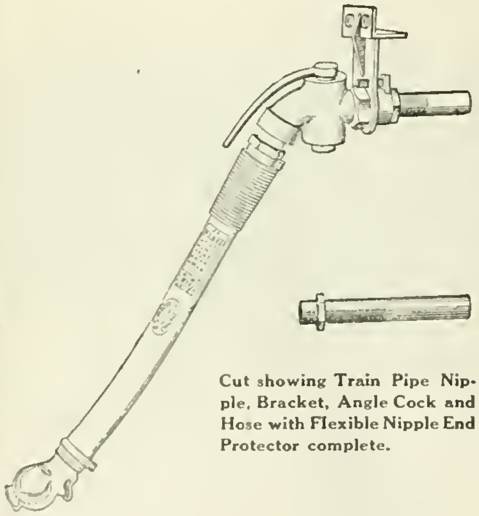
PROPRIETORS

ARTHUR M. GRANT,
MANAGER



Cut showing Train Pipe Nipple, Bracket, Angle Cock and Hose with Flexible Nipple End Protector complete.

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RAILWAY NECESSITIES
Great Northern Building - Chicago

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Prevents chafing and abrasion effecting a saving of from 40 to 50% in maintenance of air-brake hose.

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Adjustable to any car under any operating conditions. ∴ ∴

Write for particulars to

J. Milford Moorhouse
201 McIntyre Block, Winnipeg, Man.

TRANSPORTATION APPOINTMENTS.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy Anyone who may notice any error in our announcements will confer a favor by advising us

Government Railways Managing Board.—J. B. T. Caron has been appointed a member of the Board, in charge of the legal work connected with the Government railways, and with office at Moncton, N.B.

Canada and Gulf Terminal Ry.—J. R. Cassidy has been appointed Superintendent. Office, St. Flavie, Que.

G. A. Lizotte has been appointed General Agent. Office, Matane, Que.

Canadian Northern Ry.—We are officially advised that G. H. Shaw, Traffic Manager, will have his office transferred from Winnipeg to Toronto early in February, and that his jurisdiction will be extended to include the Mackenzie, Mann and Co.'s eastern lines as well as the western, and also the Canadian Northern Steamships Ltd.

The position of Superintendent of Publicity and Advertising, heretofore held by A. Hawkes, has been abolished. R. Croasdell, heretofore chief clerk, has been appointed Advertising Agent. Office, Toronto.

H. Logan, heretofore City Freight Agent, Toronto, has been appointed Travelling Freight Agent there, vice G. R. Fairhead, appointed Commercial Agent at Hamilton, Ont.

G. R. Fairhead, heretofore Travelling Freight Agent, Toronto, has been appointed Commercial Agent, Hamilton, Ont. Office, Federal Life Bldg.

C. H. Green, heretofore Travelling Freight Agent at Toronto, has been transferred to the Commercial Agent's office, at Hamilton, Ont.

Canadian Pacific Ry.—E. J. Hebert, heretofore General Agent Passenger Department, Montreal, has been appointed First Assistant General Passenger Agent Eastern Lines. Office, Montreal.

F. O. Hopkins, heretofore chief clerk to General Passenger Agent, has been appointed Assistant General Passenger Agent Eastern Lines. Office, Montreal.

A. W. Porter, heretofore Superintendent Sleeping, Dining and Parlor Cars and News Service, District 5, Vancouver, B.C., has been appointed Superintendent same service, District 3, Winnipeg, vice E. W. Kolb, transferred to other duties.

W. K. P. Kennedy, heretofore Superintendent's Accountant, North Bay, Ont., has been appointed Inspector of Timekeeping Western Lines. Headquarters, Winnipeg.

T. Fawcett, heretofore Trainmaster, Calgary, has been appointed General Fuel Agent Western Lines, vice C. Hood appointed Trainmaster Calgary Terminals. Office Winnipeg, Man.

E. W. Duval, heretofore Trainmaster, Maintenance and Operation Calgary Terminals, Calgary, Alta., has been appointed Superintendent District 1, Saskatchewan Division, vice J. M. Cameron transferred to Medicine Hat, Alta. Offices Moose Jaw, Sask.

E. B. Paterson has been appointed locomotive foreman at Wilkie, Sask., vice G. Andrews, assigned to other duties.

J. McQuarrie has been appointed locomotive foreman at Sutherland, Sask., vice M. W. Boucher, transferred.

A. Morrison has been appointed locomotive foreman at Wynyard, Sask.

J. S. Dennis, heretofore Assistant to the Vice President, has been appointed Manager of the Company's Irrigation and Land Interests in Alberta and British Columbia, and will perform such other duties as may be assigned to him from time to time by the President. Office, Calgary, Alta.

C. W. Peterson, who has been General Manager Canadian Pacific Irrigation Colonization Co., since 1906, has been appointed Superintendent of Irrigation. He has charge of the maintenance and operation of the Irrigation Canals and the Distributing System, and of Agricultural Development and Colonization of the Irrigation Block. Office, Calgary, Alta.

C. Hood, heretofore General Fuel Agent, Western Lines, Winnipeg, has been appointed Trainmaster Maintenance and Operation Calgary Terminals, vice E. W. Duval promoted to be Superintendent at Moose Jaw, Sask. Office Calgary, Alta.

J. M. Cameron, hertofore Superintendent, District 1, Saskatchewan Division, Moose Jaw, Sask., has been appointed Superintendent, District 1, Alberta Division, vice J. G. Taylor transferred to Eastern Lines. Office Medicine Hat, Alta.

F. W. Green, formerly General Roadmaster at Calgary, Alta., has been appointed Roadmaster Thompson sub-division and Nicola branch, Pacific Division, vice G. Munro, retired. Headquarters, Kamloops, B.C.

The position of Assistant Trainmaster at Kamloops, B.C., heretofore held by A. Houghton, has been abolished.

H. C. Ganson has been appointed Superintendent Sleeping, Dining and Parlor Cars and News Service, District 5, Vancouver, B.C., vice A. W. Porter, transferred.

A. J. Davis has been appointed acting foreman painter, Vancouver car shops, during the absence of A. Parker on six months leave.

Delaware and Hudson Co.—F. B. Moffitt, heretofore Travelling Passenger Agent, Albany, N.Y., has been appointed Canadian Passenger Agent. Office, 160 St. James St., Montreal.

W. H. Henry, heretofore Canadian Passenger Agent, has been appointed City Passenger Agent, Montreal. Office, 286 St. James St.

W. F. Sheehan has been appointed Travelling Passenger Agent, Albany, N.Y., vice F. B. Moffitt, promoted.

Grand Trunk Pacific Ry.—The following agents have been appointed:—Justice, Man., R. L. Harrop; Pope, Man., C. McMahon; Lazare, Man., T. J. Shields; Gerald, Sask., L. Saunders; Tate, Sask., A. E. Hofferd; Bradwell, Sask., H. F. Henshaw; Yorkton, Sask., S. C. McDonald.

Grand Trunk Ry.—J. Duguid, heretofore General Foreman Toronto shops, has been appointed Master Mechanic Eastern Division, vice J. C. Garden, transferred to Battle Creek, Mich. Office, Montreal.

W. C. Sealey, heretofore erecting shop foreman at Stratford, Ont., has been appointed General Foreman, Toronto shops, vice J. Duguid, promoted.

W. Davis, heretofore chargeman, has been appointed erecting shop foreman at Stratford, Ont., vice W. C. Sealey, promoted.

H. MacDougall, heretofore agent at Brampton, Ont., has been appointed Travelling Freight Agent. Headquarters, Stratford, Ont.

J. C. Garden, heretofore Master Mechanic Eastern Division, Montreal, has been appointed Master Mechanic Battle Creek shops, Mich., vice J. T. McGrath, who has been appointed Superintendent of Rolling Stock, in charge of the Chicago & Alton Rd.'s locomotive and car shops and terminals at Bloomington, Ill.

G. W. Gillespie, heretofore Chief Train Dispatcher, Durand, Mich., has been appointed Master of Transportation Western Division, vice R. Doyle, resigned. Office, Durand, Mich.

H. J. Tobin has been appointed Chief Train Dispatcher, Durand, Mich., vice G. W. Gillespie, promoted.

The following agents have been appointed:—Emsdale, Ont., J. E. Bell; Angus, Ont., A. M. Clark; Stayner, Ont., C. K. Clark; Brampton, Ont., C. B. McCollum; Alma, Ont., F. Anguish; Rose Point, Ont., M. J. Mullin; Henrysburg, Que., J. O. Prefontaine; St. Louis, Que., J. W. Marchand; Brighton, Ont., outside, T. C. Lockwood; Richwood, Ont., outside, A. Richardson; Durham, Ont., outside, J. R. Gun.

Intercolonial Ry.—We are officially advised that the Government Railways Managing Board has taken no action with reference to the resignation of G.R. Joughins, Superintendent of Motive Power, and that he still continues to occupy the position.

Michigan Central Rd.—L. W. Landman, heretofore General Passenger Agent Lake Erie & Western Rd., is reported to have been appointed General Passenger Agent, Michigan Central Rd., vice P. W. Ruggles, resigned on account of ill health. Office, Chicago, Ill.

New York Central and Hudson River Rd., West Shore Rd., Boston and Albany Rd.—W. R. Barnet has been appointed Assistant General Passenger Agent. Office, Grand Central Terminal, New York.

Portland Canal Short Line Ry.—M. M. Curran has been placed in charge of construction, W. H. Grant, Manager of Construction, having had to return to Toronto on account of illness.

◆

Our Inland Seas.—The history of the discovery and the development of navigation on the great inland seas of North America is treated of in a volume of 380 pages, illustrated by 70 engravings. The writer, J. C. Mills, of Saginaw, Mich., deals in a most complete and interesting manner with the history of the three centuries elapsing from the first discovery of the French-Canadian voyageurs, when their sole means of navigation were "pirogues" or dugouts and the birch bark canoes of the Indians, to the present day, when steel ships of over 600 ft. in length steam along at the rate of over 20 miles an hour. Chap. 19 is specially devoted to the Canadian mercantile marine of the present day, but the information given in it is not quite so up-to-date as is that given in the chapters specially devoted to U. S. vessels. For instance, whilst the Hamonic is mentioned among Canadian vessels, reference is not made to the Turbinia, the first turbine driven steamer on the inland lakes, and some of the larger Canadian lake freighters; nor any reference to the G.T.R. car-ferry service on Lake Ontario. Several chapters are devoted to the building of a lake freighter, and the concluding chapter deals with the economies of lake navigation. The price of the volume is $1.75 net, the publishers are A. C. McClurg & Co., Chicago, Ill. It may be obtained through The Railway and Marine World's Book Department.

Blue Book of American Shipping for 1910.—The fifteenth annual volume of this marine directory has been issued by the Penton Publishing Co., Cleveland, Ohio. It has been carefully revised to date, and the various lists of vessels are arranged under such headings as will enable ready reference being made. The general and statistical information is also full and complete. The volume contains practically everything that those engaged in navigation business on the Great Lakes should know, and much information of value for those engaged in shipping on the coastal waterways of North America. It is issued at $5 and may be obtained through The Railway and Marine World's book department.

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We carry the Largest and Best Assorted Stock of Tools in Canada, and Mechanics will find every new idea in the tool trade shown in our stock. We name below a few of our lines:

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We cordially invite all interested in Tools to come in and view our stock. We will gladly demonstrate any of our lines.

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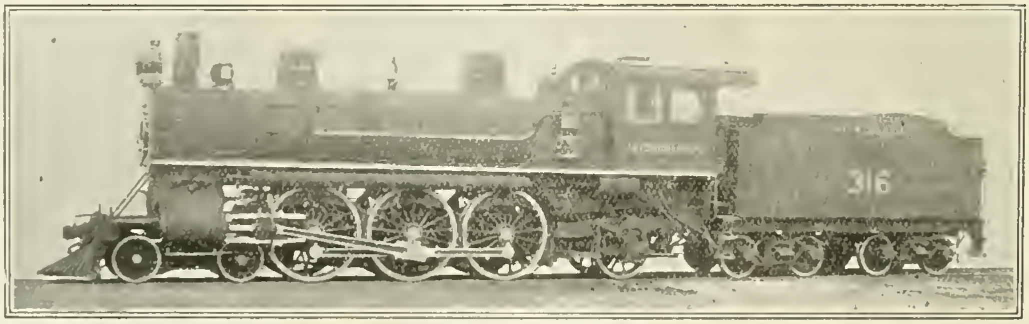

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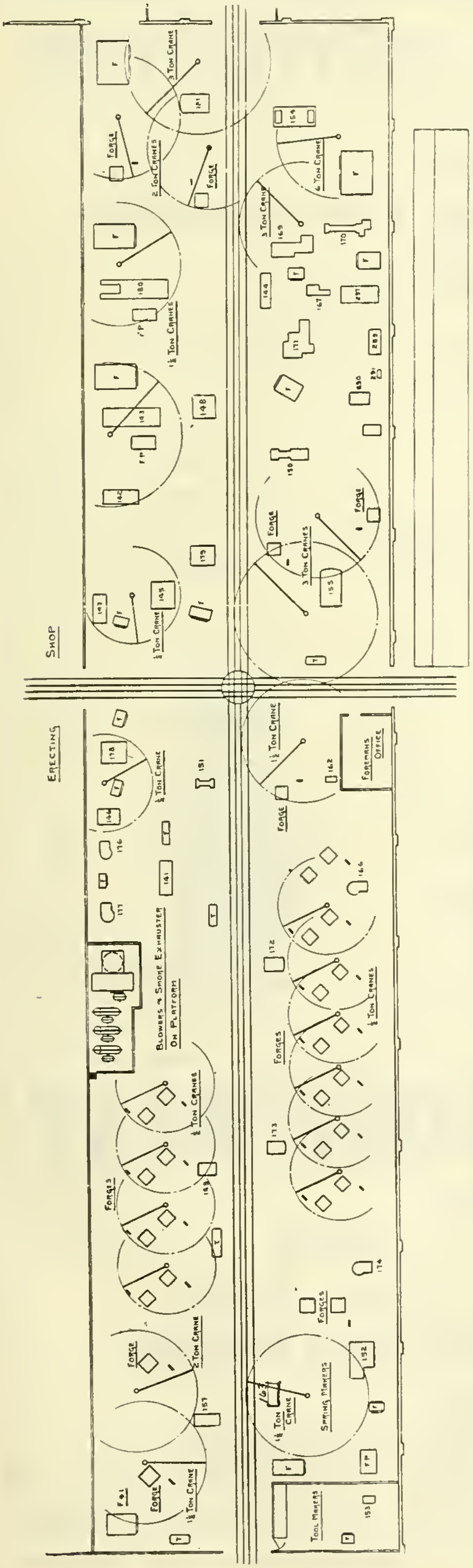


I. C. R. Blacksmith Shop, Moncton.

By Arthur Rochell, Foreman Blacksmith, I.C.R.

This shop is 375 by 76 ft., and 40 ft. high, giving a floor space of 28.500 sq. feet and a total space in shop of 1,140,000 cubic feet. It is built of reinforced concrete and has three large doors capable of taking in a load of material; the windows are of the three decker type. The lower ones are pulley balanced and can be raised up and down at the same time, that is one pushes up and the other comes down. The top ones are arranged to push out and in, causing a complete inflow of fresh air and at the same time an out go of gas and smoke that may escape from the fires. The roof is slightly pitched and has 12 longitudinal skylights. In the skylights are 6 sashes that can be raised up, giving an opening space for ventilating the roof, 9 by 6 ft. This gives ample roof ventilation as well as roof light.

The fuel for furnace purposes is water gas made by a special plant. It gives good results. The motive power is electric and all machines have an independent motor to drive them. There are 12 double fires, placed at an angle of 45 degs., with a floor space for each double fire of 5.25 sq. ft. There are 7 single fires for heavy work. There are 6 steam hammers, 5 power hammers, ranging in size from a 4,000 lb. steam hammer to a 250 power hammer, and 5 sets of shears that will cut any size iron from 16 x 2 ins. down.

The iron rack is placed at one end of the shop, is 126 by 42 ft., so that a car can be run and loaded under cover and placed at the spot required for use. The iron is placed in the rack from the outside at the back. Sliding doors are provided so that any section can be used with the rest closed up. This is necessary here to keep the snow out. The heavy work at the furnace is done at this end of the shop, and all the machines are also at this end, so the iron taken from the rack, is sheared to length, made on the particular machine required and moved straight up the shop when done, without going back an inch, thus giving great economy in handling. The shop has a track down the middle that will take two narrow or one broad gauge trotters which are used to bring in iron from the rack or to carry out finished material.

Smoke is disposed of by the much abused down draft system, but it is one that we devised ourselves, and is a great success and makes the shop practically dustless and smokeless. It consists of a graduated underground concrete duct 5 ft. sq., at the exhaust end and tapering from this point to the farthest off fire so that at the extreme ends it is 16 ins. in diameter. Each fire has a 10 in. pipe with a 36 in. hood over the fire. The hood telescopes into the pipe and can be raised or lowered at the will of the smith. The smoke duct is supplied by an 8 ft. dia. by 4 ft. wide exhaust fan speeded at 200 revolutions a minute. This discharges the smoke, gas and dust with the heat, through the stack that reaches above the roof and which is capped with a weather vane that turns easily with the wind so that the mouth is always turned away from the direction of the wind.

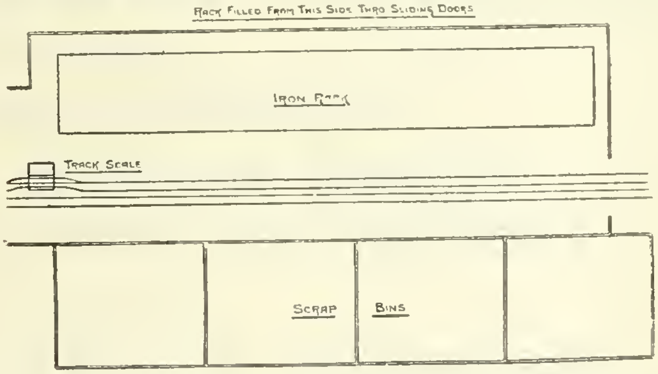
The fan blast for the forges is placed on a platform by the side of the wall and is 12 ft. above the floor. There are three fans of 6 oz. blast that supplies the fires with a great blast. These are underground out of the way, giving the shop a clear space overhead for the cranes to swing clear round.

The cranes are self-balancing pyramids, and are so placed that on the double fires one crane will serve both fires. There are 25 cranes, ranging from 6 tons down to half a ton.

Under the fan platform is a rack to hold hex. bolts and such material for locomotive work and as they are required, they are cut to length and supplied.

The tool dresser's corner is placed down by the machine shop door and is partitioned off from the rest of the shop so that he is not bothered by men standing around. He has a power hammer and furnace, air blast for tempering, and all other appliances for the dressing of tools speedily.

The spring maker's section contains a combination spring machine for punching and slotting, shearing plates and rolls for drawing down the points if required, and also a 60-ton hydraulic buckling and stripping machine, with a 1½ ton crane that swings clear round to serve all points as may be needed. There is also a pneumatic riveting machine for putting on drawbar yokes.



The above small plan is a continuation of the larger one at the left side of the page. The iron rack and scrap bins are at the right hand end of the blacksmith shop as shown in the other plan. There was not room to give the whole plan in one section.

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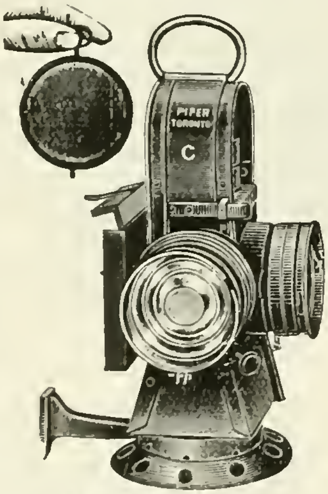
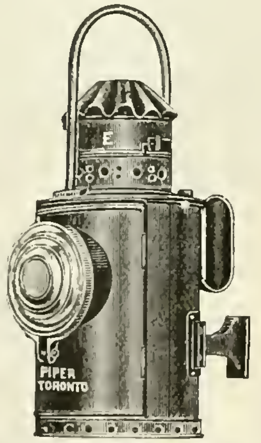
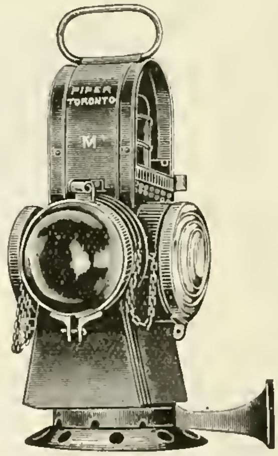


CLASSIFICATION LAMP



ENGINE TRI-COLOR LAMP



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404 St. James St. - - - - MONTREAL

The shop has plenty of working space. It is equipped with modern machinery, and is practically dustless and smokeless. We believe it has no superior and few equals on this continent.

Following is a list of tools: 6 steam hammers; 5 Champion power hammers; 5 box iron shears; 3 bulldozers; 4 bolt headers and forging machines; 2 nut makers; 1 file cutter and grinder; 1 eye bender; 1 tapering rolls; 1 hot saw, 6 in. cut; 1 track spike maker; 1 automatic rivet and track bolt machine; 2 air hammers for welding brake rods; 1 riveting bull for putting on drawbar yokes; 1 combination spring machine; 1 spring buckling and stripping machine; 31 forges; 16 gas furnaces with grinding wheels, etc.

The foreman's office is in the centre of the shop. All parts of the shop can be seen from it and the men can see the foreman when he is there and get all things that are necessary for their work, from a requisition for material or a blue print for their guidance.

The numbers given below correspond to the number on the plan by which the location of the principal machines will be seen:

141—Track bolt and rivet machine, automatic action.
142—Track spike machine, automatic action.
143—No. 6 bulldozer.
144—Pneumatic bulldozer.
145—3 in.. header and forging machine.
146—1½ in. bolt header.
147—1 in. bolt header.
148—6 in. hot saw, high speed.
149—Scrap shears, 2 in. stroke.
150—Shears for cutting bar iron.
151—No. 4 bar iron shears for cutting bolt iron.
152—Combination spring machine.
153—Small power hammer.
154—4,000 lbs. double frame steam hammer.
155—1,800 lbs. steam hammer, frame maker.
157—1,200 lb. steam hammer.
162—Air drawbar riveter.
163—60 ton hydraulic spring buckling machine.
166—No. 9 Beaudry power hammer.
167—1¼ eye bender.
169—No. 6 Guillotine bar iron shear..
171—No. 3 taper forging bolls.
172—600 lbs. steam hammer.
173—600 lbs. steam hammer.
174—No. 11 Beaudry Champion hammer.
170—1½ in. hot pressed nut maker.
176—No. 7 Champion hammer.
177—No. 9 Champion hammer.
178—2 in. bolt header.
179—2¼ in. bolt shears.
180—No. 9 bulldozer.
181—2,000 lbs. single frame steam hammer.
289—No. 2 Lion file cutter.
290—No. 1 file grinder and stripper.
291—File knife whetting machine.
297—1 in. nut maker, hot pressed.
F—Furnaces.
F—No. 1 case hardening furnace.
F.P.—Face plates.
T.—Water tanks for cooling iron.

New Railways in Quebec Province.

The Quebec Public Utilities Commission has authorized the opening for passenger traffic of the following lines:

Canada and Gulf Terminal Ry. from Ste. Flavie to Matane, Que.

Quebec Central Ry., from St. George, Beauce, to the dividing line between Dorchester and Bellechasse counties, St. Irdine parish, 31.34 miles.

The Canadian Mono-Rail Corporation, Ltd., has been incorporated under the Dominion Companies Act, with a capital of $2,000,000, and office at Montreal, to manufacture and deal in mono-rail railway cars and supplies, and to promote any industry, providing it is one to which the company may supply transportation facilities; to build, own and operate railway switches, harbors, piers, wharves, and steam and other vessels. The provisional directors are, L. A. David, J. H. Brittle, J. J. Robson, G Salmon. C. J. E. Charbonneau and C. E. Guerin. Montreal.

Central Vermont Railway

The report for the year ended June 30, 1910, shows gross receipts $4,088,411.03; operating expenses, $3,145,562.35; net receipts, $942,848.68, to which are added $9,068.59 from parlor cafe car service; $33,720 interest on securities held by the company, making $985,637.27, and from which are deducted: taxes, $133,125.12; rentals, etc., $21,615.02; hire of equipment, $85,084.72, and fixed charges, $721,038.35; total, $960,863.21, leaving a net result of $24,774.06, showing a net increase in the receipts from all sources of $293,078.76, and a net increase in expenditure of $577,951.22. During the year the following amounts were expended in improvements, and included in operating expenses:—New bridges, $10,560.99; new tracks, sidings and spurs, $5,742.29; new fuel and water stations, engine houses and turntables, $6,886.30; new stations and warehouses, $8,351.82; new steel rails, difference between values of old steel rails taken and new steel rails laid down, $22,522.19; new tools and machinery, $760.44; new crossings, $7,807.42; total, $62,631.45.

Two miles of new 80 lb. steel rails were laid near Richmond, and 19 miles of released sawn 80 lb. steel rails were laid between Stafford and Willimantic, 6½ miles in district 3, 1½ at Richmond, and four miles between Oakland and St. Albans; 19½ miles released 72 lb. rails were laid on the Richford branch; 3¾ miles of released 56 lb. rails were laid in district 2, and five miles on the Williamstown branch. Industrial spurs, totalling 5,963 ft., and a siding for public delivery, 525 ft., were built at South Vernon. New stations were built at South Vernon and South Franklin, and extensive repairs were carried out on a number of others. New steel bridges were erected at Norwich Town and South Coventry, Conn., Palmer, Mass., and East Granville, Vt., and repairs carried out on six others. Four flat cars, one stores car and six cabooses were built in the St. Albans shop, and added to rolling stock during the year. The company owns 536.4 miles of railway, of which 99.4 miles are in Canada.

The officers and directors for the current year are:—President, C. M. Hays; Vice President, E. H. Fitzhugh; other directors, G. C. Jones, E. C. Smith, W. S. Webb, J. W. Stewart, J. G. McCullough, E. H. Baker, C. W. Witters, S. E. Kilner, A. Tuttle, C. P. Smith, E. L. Marston.

Press reports state that a telephone dispatching system will be installed between St. John and McAdam Jct., N.B., on the C.P.R., and that it will be ready for operation by the spring.

W. H. Grant, who left Toronto last spring for Stewart, B.C., as Manager of Construction of the Portland Canal Short Line Ry., has had to return east, owing to rheumatism brought on by the excessive rainfall at Stewart. He is now at Mount Clemens, Mich., for a short time.

Sir Thos. G. Shaughnessy, President C.P.R., while in the U.S. recently, is reported to have said on the subject of rate conditions:—"We have the advantage of having rate matters settled by one body, a Government commission, which has plenary power. The scope of its decisions affects the entire people, while in the U.S. you have a large number of State commissions rendering various decisions. In Canada we are making no effort toward obtaining a general rate advance, although the proceedings before your Interstate Commerce Commission are being watched with keen interest. However, any declaration of your commission is not likely to result in a rate advance on the C.P.R."

Too Late for Classification.

Alberta and Great Waterways Ry.—A bill was introduced in the Alberta Legislature, Dec. 16, for the purpose of raising $7,400,000 upon the credit of the revenues of the province. The introduction of the bill has to do with the straightening out of the difficulties arising out of the contract with the A. and G. W. Ry. for the building of a line to Fort McMurray, for which the Province guaranteed the bonds, and which contract is referred to in the preceding paragraph.

Nipigon to Savanne, Ont.—A press dispatch dated Dec. 22 states that the C.P.R. has placed engineers in the field to locate a cut off from near Nipigon to Savanne, Ont., which will shorten the distance between Montreal, Toronto and other eastern points, and Winnipeg, Man., by about 50 miles. If the cut off is built through traffic between Winnipeg and Montreal or Toronto will not go through Fort William, as at present.

Ha Ha Bay Ry.—A contract has been let to Boulianne and Boulianne, for the building of a branch line from La Terriere Jct. to near Riviere du Moulin bridge, about eight miles. The contractors, we are advised, have started work and it is expected that this branch will be ready for operation about June 1.

In connection with the progress of construction on the main line, we are advised that the ballasting upon the first 19 miles has been completed from St. Alphonse to Chicoutimi, on the Quebec and Lake St. John Ry., and that a train service is being operated. A branch is also being operated to Port Arnault, Que.

The company has purchased the electric railway owned by La Compagnie du Port de Chicoutimi, about a mile in length, and extending from the Chicoutimi Pulp Mill yard to the wharf. (June, 1910, pg. 449.)

Hamilton to Port Dover.—G. S. Lynch-Staunton, K.C., Hamilton, Ont., announces that people for whom he is acting have applied for a charter to build an electric railway between Hamilton and Port Dover, Ont., and that if terminal arrangements in Hamilton can be made with the Dominion Power and Transmission Co., work will be started in the spring.

Kootenay and Alberta Ry.—The route plans for this projected railway are before the Minister of Railways for approval. We are advised that tenders will be called for in a few weeks and construction work will be in charge of L. B. Merriam as Chief Engineer.

Toronto, Niagara and Western Ry.—The plans being filed in Brantford and various other places between Hamilton and Windsor, credited in press reports to the Canadian Northern Ontario Ry., are in reality being filed by the T., N. and W. Ry., which is a Mackenzie, Mann & Co. company, originally projected to build a railway between Toronto, Hamilton and Niagara Falls, along the right of way of the power line of the Electrical Development Co.

H. M. Wicksteed, Chief Locating Engineer for Mackenzie, Mann & Co., was in Hamilton early in Dec. in consultation with the City Engineer as to the proposed routes for the line into that city from Toronto. This question is before Board of Railway Commissioners' Chief Engineer, and nothing will be definitely decided until his report is made. Some grading has been done at West Toronto, near Port Credit, and near Oakville, but this is probably only for the purpose of keeping the charter alive until the company's construction plans are fully matured. (Nov., 1910, pg. 965.)

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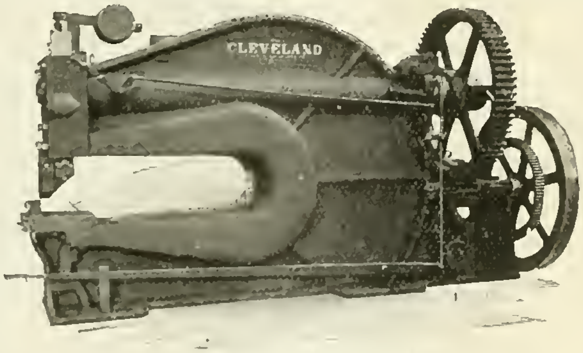

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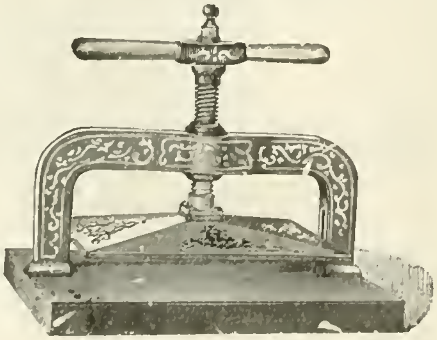

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Apportioning Cost of Crossings Protection.

At a sitting of the Board of Railway Commissioners in Montreal recently, when the question of the protection of level railway crossings was under consideration, the solicitor for the city contended that where it was shown that the conditions such as they exist today were senior, so far as the city was concerned, that the person who disturbed these conditions, who aggravated the servitude or the danger, should pay for the protection of the public.

Chief Commissioner Mabee said in reply: "We do not apply any such principles anywhere, and never have. To get rid of some 10 or 12 level crossings from the union station out of Toronto to the east we compelled the city of Toronto to make a contribution of a third. They are paying a third to eliminate level crossings out of the union station to the west along the G.T.R. We have asked every municipality to assist where we have furnished protection. We cannot do anything else. If we commenced to load upon the railways all of the capitalization of these protective appliances, we would have the companies out of business in five years, or else you would be paying a good deal higher freight and passenger rates. The municipalities themselves contribute to these dangers. The cities and towns are growing, there is more traffic on the streets to be protected, and so why should not the municipalities in fairness contribute? There is no use in arguing against not paying anything, because the municipalities have got to pay. Living in this enlightened age, we have to pay for this protection and these improvements. The march of civilization requires it, and we have to get down into our pockets and help."

Q. and L. St. J. Ry. Freight Rates.

In the case of Proteau and Carignan vs. the Quebec and Lake St. John Ry. the Quebec Public Utilities Commission has given the following decision:—The plaintiffs complain that the rates for the carriage of merchandise, and principally on brewery products, are too high on the Q. & L. St. J. Ry., and that the rates are higher than those of other railways for the same or longer distances. They also complain that the Q. & L. St. J. Ry. has broken a special agreement made in 1904, by which the company granted to brewers a special rate, lower than that established for all railways and covered by the Canadian Freight Classification, approved by the Board of Railway Commissioners. At the hearing of their complaint, the plaintiffs produced a comparative statement showing the rates from Quebec to St. Raymond, Lake Edward, Roberval and Chicoutimi, and the rates for equal or longer distances on the C.P.R., I.C.R. and C.N.Q.R. To this the respondent company replied that its rates are reasonable, having regard to the conditions under which its railway is operated; that they are not higher than on other railways operating under similar conditions, and that there was no reason for keeping in effect a special tariff. different from the uniform classification established and recognized by all railways. With regard to this latter point the commission is advised that the Q. & L.St.J.R. was within its rights in abolishing the special tariff and in following the uniform classification established and recognized.

In making comparisons between the rates charged by the Q. & L.St.J.R. and by other railways, it is necessary to take into account the peculiar conditions under which this road is operated. It is a colonization railway crossing a mountainous country. On a very considerable portion of its length from Riviere a Pierre to Chambord, 120 miles, the population is very scant, and only gives a slight revenue to the railway. On this part of the railway, between Allen's Mills and Riviere a Pierre, there are grades of 106 ft. to the mile. as well as very sharp curves, which increase greatly the cost of operation and limit the weight of trains running on this section. Finally it is notorious that the company is not prosperous and that there is no reason for exacting from it reduced rates unless it is proved that they are illegal or unjust. The commission has compared the Q. & L.S.J.R. with those of certain C.P.R. branches which present similar conditions, such as the Nominingue, Waltham and Temiskaming lines, and has found that the rates charged are practically the same. Taking as an example the rates for beer shipped in quantities less than carloads (3rd class) here are some figures:—

	Miles.	Rate per 100 lbs.
Q. & L. St. J.—Quebec to Raymond	35	.15
C.P.R.—Montreal to St. Lin	36	.16
C.P.R.—Montreal to St. Jerome	33	.15
C.P.R.—Montreal to Shawbridge	42	.17
C.P.R.—Montreal to St. Hermas	37	.17
C.P.R.—Montreal to Wyman	36	.17
C.P.R.—Mattawa to Temiskaming	39	.17
Q. & L. St. J.—Quebec to Lake Edward	112	.29
C.P.R.—Montreal to L'Annonciation	113	.24
C.P.R.—Petewawa to Temiskaming	113	.29
Q. & L. St. J.—Quebec to Roberval	188	.35
C.P.R.—Montreal to Davidson	189	.35
Q. & L. St. J.—Quebec to Chicoutimi	227	.36
C.P.R.—Ottawa to Temiskaming	233	.38

The Commission is of the opinion that the comparisons shown in the above statements are more just than those submitted in the plaintiffs' statement, which refers to points such as Cap Sante, Portneuf, Montmagny, Joliette, Riviere du Loup and St. Jerome, which are located on lines built and operated under conditions which differ greatly from those which exist for the Q. & L.S.J.R. The Commission is therefore of the opinion that there is no reason at present, on the proof produced, to justify the complain of the plaintiffs, and the complaint is dismissed.

Canadian Government Telegraphs.

During the year ended Mar. 31, 1910, 31 miles of new telegraph lines were strung in Cape Breton, N.S., from Enon to Gabarus, 63.5 miles from Strathlorne to Whycocomagh, N.S.; 27 miles in Quebec, and 70 miles of a line from Athabasca Landing, towards Peace River Landing, Alta. This line will have when completed, a total length of 290 miles. The Government telegraph lines have now a total mileage of pole lines of 7,748.5 miles. D. H. Keeley, General Superintendent, in his report, gives details of the work done on each line, and of the work done by the cable steamer Tyrian. The Government owns a line of 14 miles in Newfoundland, from Cape Ray lighthouse to Port au Basque, where a connection is made with the Anglo-American Telegraph Co.'s land line system, by which company it is operated under an arrangement. The line was strung in connection with the Dominion Government signal service. The total expenditure for the fiscal year was $422,665.96, and the total income $136,747.31. The signal service, meteorological service and fisheries bulletins are handled free of tolls. The number of offices along the Government lines is 479. A complete list of tolls for messages over the different lines is appended, and also reports from the local superintendent.

Following is a list of the staff having charge of the operation of the lines:—

Headquarters at Ottawa. D. H. Keeley, General Superintendent; M. W Crean, J. E. Gobeil, Technical Assistants to Superintendent.

General Inspectors:—A. B. McDonald, North Sydney, Cape Breton, lines in Nova Scotia and New Brunswick; J. S. Macdonald, Edmonton, Alta., lines in Northwest and south British Columbia.

Superintendencies:—E. Pope, Quebec, Dist. Supt., North Shore and G.N.W. traffic; J. C. Tache, Dist. Supt., Chicoutimi district and North Shore to Bersimis; E. H. Tetu, Long Point of Mingan, Dist. Supt., North Shore, East Bersimis; P. Pouliot, Dist. Supt., Quarantine Line, etc., to Grosse Isle; A. Malouin, Dist Supt., West Point, Anticosti Island; A. Le Bourdais, Grindstone, Dist. Supt., Magdalen Islands; D. C. Dawson, St. John, N.B., Dist. Supt., Cape Breton system; Mrs. C. C. Seely, Grand Manan, N.B., Dist. Supt., Bay of Fundy system; J. McR. Selkirk, Leamington, Ont., Dist. Supt. Pelee Island system; R. C. Macdonald, Edmonton, Alta., Dist. Supt., Northwest Territories; Wm. Henderson, Victoria, Dist. Supt., British Columbia south; C. S. Stevens, Summerland, B.C., Supt., Penticton line; J. T. Phelan, Vancouver, B.C., Supt., Yukon system; H. Gilchen, Whitehorse, Y.T., Dist. Supt., Atlin-Boundary.

Telegraph and Cable Matters.

The Great North Western Telegraph Co. has moved its Vancouver offices to new premises in Cope Block.

T. N. Vail, President American Telephone and Telegraph Co., has been elected President Western Union Telegraph Co., vice R. C. Clowry, resigned.

W. Marconi, of the Marconi Wireless Telegraph Co., recently announced that a wireless telegraph station had been established at Coltano, Italy, and messages exchanged with the stations at Clifden, Ireland, and Glace Bay, N.S.

W. J. Camp, Electrical Engineer C.P.R. Telegraph, Montreal, attended the recent meeting of the Eastern Division of the Association of Railway Telegraph Superintendent at New York.

The Board of Railway Commissioners has extended to June 1, the time during which the North American Telegraph Co. may charge the telephone tolls, which were authorized prior to July 13, 1906.

The Pacific Cable Co. has installed new receiving and transmitting apparatus between Bamfield, B.C., and Fanning Island. This is a recent invention, and it is claimed, will materially increase the speed of receiving and transmitting messages.

The Marconi Wireless Telegraph Co. is erecting a wireless telegraph station on the Magdalen Islands, with a view to securing constant communication with Charlottetown, P.E.I., as communication between the islands and the mainland by cable is frequently interrupted.

The Board of Railway Commissioners has extended to June 1, the time within which the C.P.R., G.N.W Telegraph Co., and Canadian Northern Telegraph Co., may be allowed to charge tolls, as authorized by 7-8 Edward 7, chap. 61, and has extended the time to the same date for approval of G.T.P.R. telegraph tolls.

Cable reports from England state that there is a movement on foot for the laying of a state owned cable across the Atlantic to Montreal, where connection would be made with C.P.R. and Pacific Cable Co.'s leased wires. The route mentioned is from the north of Scotland. by way of Faroe Islands, Iceland, Greenland and Labrador.

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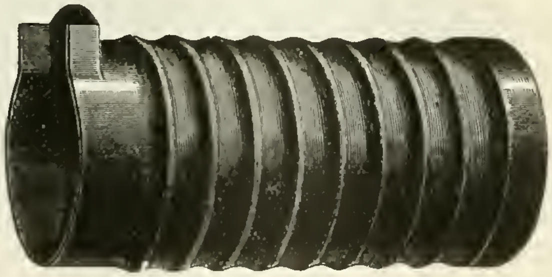

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J. Milward, Manager Pacific Cable Co., is reported to have stated, in Victoria, recently, that the negotiations for lower rates on deferred messages were proceeding favorably, and it was expected that a rate of 1s. 6d. a word on messages delivered within 48 hours would come into effect early in the year. The present rate of 3s. a word would be maintained for messages for immediate delivery.

The G.T.P. Telegraph Co. has now in operation its line from West Fort William, Ont.,. through Winnipeg and Edmonton, to Edson, Alta., about 1,400 miles. This line is being continued westerly through the Yellowhead Pass to Tete Jaune Cache, which point it was expected would be reached by Dec. 31 From Prince Rupert easterly, the telegraph line has been erected to milepost 100, and the material has all been placed along the route to Aldermere, 245 miles east of Prince Rupert. During 1910, in addition to the completion of the lines mentioned, 23 new offices were opened between Fort William and Winnipeg, and telegraph lines were erected on the following branch railway lines:—Yorkton Branch, Melville to Canora, Sask., 55 miles; Prince Albert Branch, from Young, Sask., northerly for 30 miles; Regina Branch, Melville to Balcarres, Sask., 31 miles; Calgary Branch, Tofield to Red Deer, Alta., 87 miles. The whole of the work has been carried out under the supervision of A. B. Smith, Manager G.T.P. Telegraphs.

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Grain Elevator Notes.

It was reported early in Dec. that there was over 1,000,000 bush. of grain in the two G.T.R. elevators at Portland, Me.

The Saskatchewan Milling and Elevator Co.'s recently built flour mill, with a capacity of 1,000 barrels a day, at Saskatoon, was opened for business recently.

The La Riviere Farmers' Elevator Co., Ltd., passed a resolution, Nov. 30, to dispose of its elevator, to wind up its affairs, and to apportion its assets among the contributories.

T. Horn who has been acting as Dominion Grain Inspector, Winnipeg, since the resignation of his brother, D. Horn, and pending the confirmation of his appointment by the Governor-in-council, died there, Dec. 19.

The Thunder Bay Elevator Co., is being proceeded against by the Dominion Warehouse Commissioner, on charges of rendering incorrect statements of the quantities of various grades of wheat in store in its warehouse at Fort William, Ont., for the week ended Dec. 10, 1909.

The G.T.R. elevator at Port Dalhousie, Ont., was destroyed by fire Dec. 7, the loss is estimated at $30,000. The elevator, which was built about 50 years ago, has not been utilized to any great extent for some time, and it is stated that there is no intention of rebuilding there.

The Goderich Elevator and Transit Co.'s annex to its elevator at Goderich, Ont., was opened for business towards the end of Nov. It is being used chiefly for winter storage purposes at present. The whole work of erecting, including the construction of the pontoons supporting the structure on the waterfront, was completed within eight months.

The Alberta Pacific Elevator Co., is reported to have purchased a site on the north bank of the Fraser River, between Pitt River and the C.P.R. Hammond station Vancouver, in connection with its project for shipping grain from that port. It is stated that an elevator will be erected on this site, and another one on the south shore of Burrard Inlet.

The Grain Growers Grain Co. is applying to the Dominion Parliament for incorporation, with power to take over and carry on the business of the Grain Growers Grain Co., Ltd., incorporated under the Manitoba Joint Stock Companies Act, upon such terms as may be agreed upon between the shareholders of the new and old companies, and with the same powers as are possessed by the old company. Bonnar, Trueman and Co., Winnipeg, are solicitors for the applicant.

D. W. McCuaig, Chairman Manitoba Elevator Commission, is reported to have said, at Portage la Prairie, Dec. 5, that the commission had operated a large number of elevators during the season. In southern Manitoba, conditions were very bad, two of the elevators had not received a bushel of wheat, and had been closed, and quite a number of others had scarcely received any wheat. These were not a success but were being kept open in fairness to those who supported them. At many points they were patronized, and at others, where large petitions were sent in, nearly all the farmers loaded over platforms. On the northwestern line at certain points, the elevators were a great success.

In response to the recent deputation of western farmers to Ottawa, respecting, among other things, the Government control of terminal elevators, the Dominion Premier, pointed out that the Government had a bill on the subject already prepared, and he considered that it would not be sufficient to look after the elevators at Fort William and Port Arthur, as the same operations complained of, could take place elsewhere. The problem, he said, would be solved, if the carriage of grain on the St. Lawrence could be so improved that it would not be possible to divert it to other channels, which improvement could only be carried out in two ways, by improving the St. Lawrence, and by providing, also, a route through the Ottawa River, which is the shortest route between west and east.

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Among the Express Companies.

The Western Ex. Co. has withdrawn its service from the Bellingham Bay and British Columbia Ry., and has closed its offices at the various points touched in the State of Washington.

The Dominion Ex. Co. has issued its local tariff C.R.C. 2491 regulating the return of proceeds of c.o.d.'s or collection originating in Europe and, cancelling its C.R.C. 2456.

The Board of Railway Commissioners has extended to June 1, the time within which the contract forms of the National, American, Canadian, Dominion, United States and Great Northern Ex. Cos. are approved, and also the Maritime Ex. Co.'s money and freight receipts.

The Dominion Parliament has before it, a bill, which was read a first time recently, to compel express companies to furnish a statement of unclaimed balances in their hands, and after a certain time, to transfer these unclaimed balances to the Government as trustees.

The Dominion Ex. Co. announces that the embargo against removing dogs out of the district west of the eastern boundaries of York and Simcoe counties, Ont., has been removed, and shipments of dogs may again be accepted, according to the rules in the governing classification, and may also be accepted for transportation to Montreal.

The Dominion Ex. Co.'s building, which is in course of erection in Montreal, will be occupied, on the ground floor and basement, by the Dominion Ex. Co. and the C.P.R. steamship ticket offices. The top floor has been specially designed for the use of the Montreal Club, at present located in the C.P.R. Telegraph Building. The intermediate eight floors will be rented as offices.

The Dominion Ex. Co., in a recent circular to agents states that shipments of special traffic for points north of Vancouver, B.C., including Prince Rupert, Port Simpson, Port Essington, and intermediate points named in C.R.C. 2105, should be charged double rates, i.e., special traffic matter rates from origin to Vancouver or Victoria, in addition to special traffic rates between Vancouver or Victoria and destination.

The Canadian Ex. Co. has extended its service over the G.T.P. Steamship routes and in this connection has opened offices at Prince Rupert, Stewart, Vancouver, Victoria, B.C., and Seattle, Wash. All business from common points in the east, for Prince Rupert and Stewart, must be way-billed on Vancouver at existing through rate, and business from eastern exclusive points, must be way-billed on Sarnia, Ont., or Detroit, Mich., and all offices much consign business for any of these new offices, care of Great Northern Ex. Co., St Paul, Minn., and mark way-bills in the same manner.

The Canadian Northern Railway Express Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $1,000,000, and office at Toronto, to purchase, hold and dispose of shares in capital stock, bonds, debentures and debenture stock of the Canadian Northern Express Co., or of any other company authorized to carry on the express business, and to carry on any branches of such business in Canada and elsewhere. The incorporators are:—R. H. M. Temple, A. J. Reid, K.C., R. P. Ormsby, A. J. Mitchell, and J. B. Robertson, all connected with the Canadian Northern Ry., Toronto.

The Dominion Ex. Co. has issued a notice to its agents, instructing them that owing to the provisions of the Ontario Liquor Act, they must refuse shipments of intoxicating liquors, when destined to local option points, unless it is represented that they are for the consignees' personal or family use, which, agents are advised to have endorsed on the shipping bill by the shipper. In no case should such goods be sent to such points c.o.d. By a recent amendment to the act, the police are authorized to seize and remove liquor which is found in transit or in course of delivery, on the premises of an express company, and which they believe to be sold or kept for sale, contrary to the provisions of the act. Shipments which arrive at a station, billed as liquor, or which can be ascertained to be liquor without breaking the package in which it is shipped, may be seized by the authorities if they believe it is to be sold or kept for sale, contrary to the provisions of the act. A police officer has no authority to break open the companies' cars, offices or shed, for the purpose of making a search without a search warrant from a justice of the peace, but a constable, provincial officer or license inspector may, without warrant, peacably enter and make searches upon the companies' cars, lands or buildings, for liquors which he suspects have been illegally shipped. When a shipment is seized, a receipt must be taken from the officer, and when a package is broken open under a search warrant, an acknowledgment should be taken from the officer. When a search warrant is being executed, the agent must accompany the officer while search is being made, after first examining the warrant, and prompt advice should be given by wire to the Superintendent of the seizure, or search, with a reference to the shipping bill, and any papers served on the agent should be forwarded to the Superintendent by the first train.

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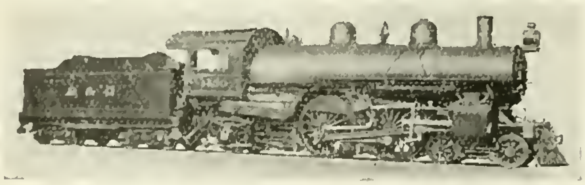

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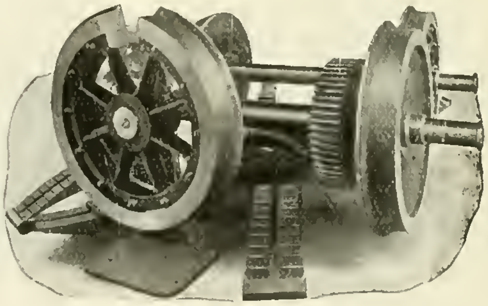

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Official Organ, The Railway and Marine World.

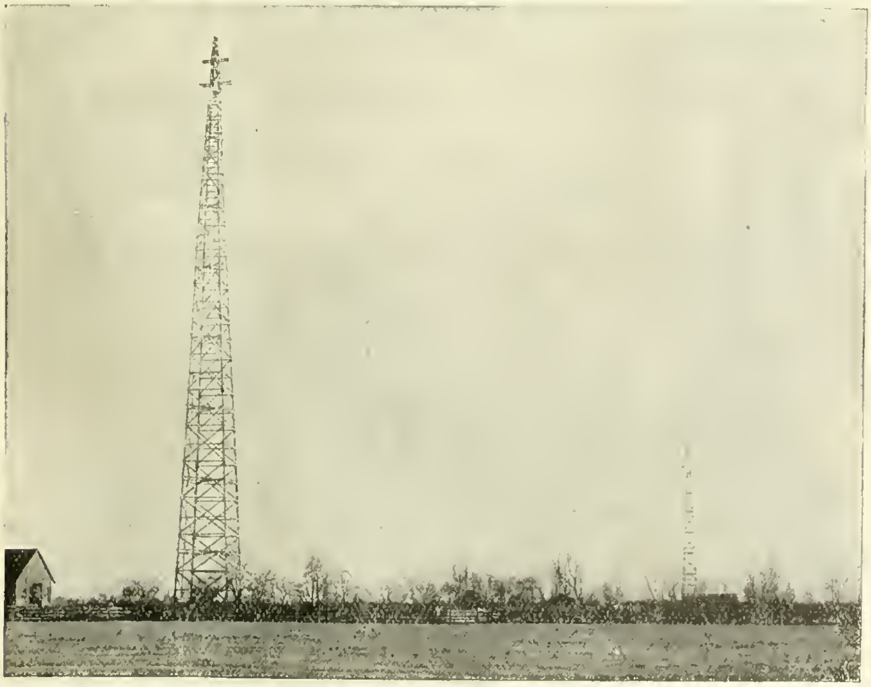
◆

B.C. Electric Ry. transmission lines supplying light and power to the Lower Fraser District, including Ladners and the Delta.

British Columbia Electric Railway Co.

This corporation consists of two allied companies, the British Columbia Electric Railway Co., Ltd., and the Vancouver Power Co., Ltd. The latter was formed as a subsidiary concern in 1898 for the purpose of generating power by means of a hydro-electric plant at Lake Buntzen, on the North Arm of the Burrard Inlet, an arm of the Gulf of Georgia. The power developed by this plant is utilized and distributed by the B.C.E.R. Co., and employed for lighting, power, and street and interurban railway work on the lower mainland of British Columbia, especially in and around the city of Vancouver, the commercial capital of B.C.; New Westminster, the old capital of the mainland; North Vancouver, and the Fraser Valley, east of New Westminster. In addition there are two other branches of the industry on Vancouver Island, viz.: The Vancouver Island Power Co. and the Victoria branch of the B.C.E.R. Co., which operates in and around the city of Victoria, the capital of the province.

The history of the undertaking has been a marvellous record of almost unprecedented growth, unprecedented even in that most rapidly developing branch of engineering—electricity. That such is the case may be judged by a brief survey of the following: In 1904 the street railway work of Vancouver city was handled by one 500 k.w. rotary convertor, whilst today in the Vancouver substation alone there are one 1,000 k.w., one 500 k.w. and two 2,000 k.w. rotaries, a total of 5,500 k.w., and the company has in addition substations at four other points, and one portable substation. The total capacity of its substations at present is over 7,000 k.w., and new machines are being installed for over. 2,000 k.w., all of which will be carrying full load almost as soon as installed. Such is the phenomenal development in street railway work alone. In the other branches, light and power, the story is the same —one of great and rapidly increasing growth. When it is considered that every part of the plant has been installed to take the place of out-of-date machinery in a short six years, it will be seen how great has been the development which has taken place in this "last outpost" of the Empire. An auxiliary steam plant for two turbine units has recently been added for a stand-by and for emergency cases. In the lighting branch the company had in 1904 about 4,600 meters installed on the lower mainland, whilst now it has over 20,000 meters. In the power load it had in 1904, 1,200 h.p. of connected load, whilst in 1910 it has 11,000 h.p.


B.C. Electric Ry. towers 1 and 2 across the Lower Fraser River, on the Ladners—Delta transmission line.

Four hundred feet above high tide is Lake Buntzen, named in honor of J. Buntzen, director of the company, and for several years its General Manager. This lake of 500 acres is fed by the waters of the eternal snows, but would be inadequate to supply a plant of this magnitude. It has, therefore, been connected by means of a tunnel to Lake Coquitlam, altitude 432 ft., area 2,300 acres, drainage area 100 sq. miles, whilst the rainfall amounts to 150 inches per year. This tunnel, 12,775 ft. in length, is the longest purely hydro-electric tunnel in the world, and of itself constitutes a work of no mean engineering character. A concrete dam 54 ft. high across the canyon (the outlet of Lake Buntzen) at once raises the water level of this lake, increases its storage capacity and contains the pipe intakes.

Like similar undertakings in other places, the history of the electrical industry in B.C. has been one of growth from small beginnings through various vicissitudes to a position of assured success, but in few places has this growth been so phenomenal or the success so marked as it has in B.C. The installation of electrical plant was inaugurated by the Vancouver Electric Illuminating Co., Ltd., in 1887, and in 1889 a second company, known as the Vancouver St. Ry. Co., Ltd., was formed to operate by animal traction. In 1890 the two companies were merged and the lines electrically operated. In 1890 there was also commenced the New Westminster interurban system and the Victoria, Vancouver Island system. These were again merged into one company, known as the Consolidated Railway Co., Ltd., and as such were operated until 1897, when the B.C. Electric Ry. Co., Ltd., was formed and purchased the amalgamated undertakings, which have been run continuously by this company ever since.

In 1905 the hydro-electric plant at Lake Buntzen was installed, and from that time to the present all power has been derived from this source. The site for the generating station has been blasted out of the solid rocks and cliffs,

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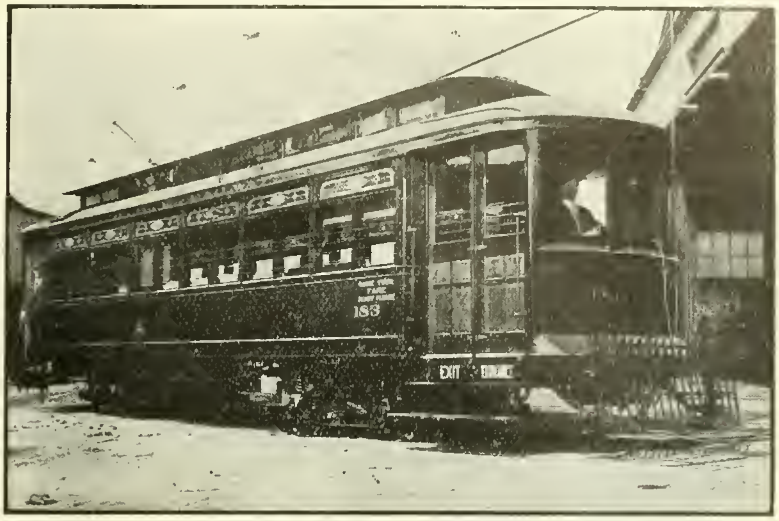
and the buildings were erected from the granite so quarried. The within pictures of this plant and surroundings show the transformer houses, step-up stations and operators' dwellings. Immediately behind and above the power house an electric elevator in a concrete shaft serves as a means of quick conveyance from one to the other. To the right of the power house is a concrete warehouse and wharf built on concrete piers. Cars loaded with the heaviest machinery and freight are landed on this wharf over a drop apron, at any stage of the tide. The installation in the power house at present consists of six units, totalling 33,000 h.p. Four of the units are 3,000 h.p. each, the other two 10,500 h.p. each.



Type of city car built in B.C. Electric Ry. shops at New Westminster.

Two pole lines 80 ft. apart carry four distinct sets of high-tension transmission wires over a private right of way to the north shore of Burrard Inlet, opposite Barnet. Between two wooden towers on this north shore and two steel towers at Barnet on the south shore, a span of over 3,000 ft., these four high-tension sets of lines cross the salt water, giving a headway of 132 ft for clearance of the masts of sailing vessels. From Barnet almost straight west one pole line, with two sets of transmission wires, continues to Vancouver city substation; the other almost straight south to Burnaby substation. The Vancouver substation and the Burnaby substation are interconnected along the company's private right of way, the Westminster-Vancouver Interurban Ry., by two independent sets of transmission wires, so that in case of trouble on any one line an uninterrupted service may still be maintained. From Burnaby substation two sets of transmission wires run out to New Westminster city substation and five new substations about twelve miles apart on the Fraser Valley branch to the city of Chilliwack, 64 miles from New Westminster. From Barnet a further high-tension transmission line leads directly east, dividing into two branches, one supplying Lake Coquitlam and the other the asylum farm substation, a Government institution, and New Westminster Junction. From the Vancouver substation two sets of transmission lines lead out towards the city of North Vancouver and its surrounding district, crossing the harbor at the Second Narrows on a set of high masts 190 ft. above tide water. The receiving substation for this line is located in the east end of this city; the other line follows the right of way of the Lulu Island Ry. to the substation on Lulu Island. A new and additional substation is now being erected along this line at Shaughnessy Heights, in Point Grey district, to take care of this rapidly growing suburb.

The Vancouver city substation naturally is the largest and most interesting. It supplies the business, residence and street lighting of the city, the suburbs of South Vancouver and Point Grey, the power for numerous industrial motors in these districts, and the city's extensive street railway system. Two six-phase 60-cycle rotaries, recently added to its equipment, are particularly interesting to the electrical engineer as being the largest of their kind in the world. Next to the Vancouver substation, the most important substation on the system is located at Burnaby, about nine miles from Vancouver, on the Vancouver-Westminster interurban line. It is the switching point for Westminster City-Vancouver, Westminster Interurban and Fraser Valley branches. Two 10,000-volt transmission lines distribute power over considerable distances to large sawmills on Burnaby Lake to the north and the Carbolineum works on the Fraser River to the south. The Lulu Island substation apparatus operates the Vancouver and Lulu Island Ry. and the Eburne-Westminster line, and also lights the residences of the farmers along and near these railways, the town of Steveston at the mouth of the Fraser, the town of Ladner on the south side of the Fraser River, the motors in the salmon canneries along the river bank, and the stables, barns and dairy houses of the farmers in this district. A portable substation, mounted on trucks for hauling from place to place, is found very useful and convenient to assist in the moving of large crowds to the various parks both in Vancouver and Westminster, and to the exhibition grounds in both cities.

The electric railway system of the company, consisting of the mainland and the Vancouver Island (Victoria) systems, is fully shown on the map between pages 80 and 81 of this issue. It comprises 200 miles of track on the mainland and 25 miles in Victoria and its suburbs. All along the various interurban lines the company has extended its lighting and power circuits. These are greatly appreciated, and exceedingly well patronized by the residents and settlers of the districts traversed, giving them practically all city conveniences in their suburban homes, and even on the farm. Small electric motors for water pumping and other household duties are used quite extensively from these lines. For the improvement of the suburban roads, rock crusher motors are operated for various municipalities. Along the banks of the Fraser River from Point Grey (Eburne), through South Vancouver to Burnaby, a number of industries and factories have by this means been able to obtain a cheap and reliable power, available at all hours of the day, as well as a good and frequent railway service, with siding facilities for the handling of freight in carload lots. Into the timbered sections branch power lines have been built for the operation of sawmills and shingle mills, obviating the hauling of the unwieldy and ponderous logs, at the same time clearing up these districts for the settler and his plow. A number of plants of this kind have been installed in the timber between Vancouver and Westminster and near North Vancouver. All of these, when first connected and started up, were closely surrounded by timber, which is now receding in the distance before the onslaught of electrically-driven saws and planers. The lumber from these mills is again worked up in the numerous electrically-operated woodworking establishments, box factories, shipbuilding yards, etc., in the three cities. The car-building shops of the B.C.E.R. Co. in New Westminster is a good example of the use of the electric power. Since the extension of the company's power circuit to New Westminster and through its manufacturing and wholesale section, a number of very important industries have adopted the electric drive, among others a large can factory, an ice and cold storage plant,

Type of suburban car built in B.C. Electric Ry. shops at New Westminster.

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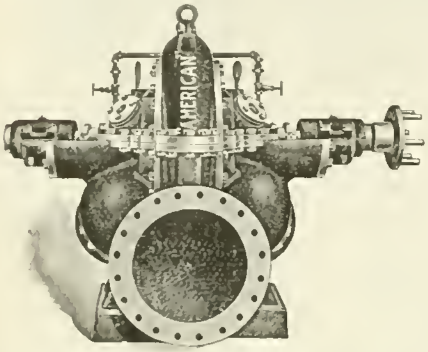

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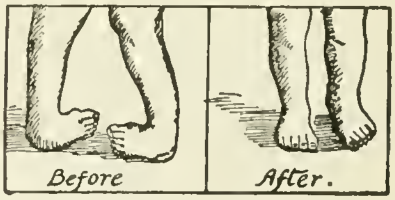
This Institution did more work in 1910 than ever before. Total In-Patients 1,224. Of these, 783 were from the city and 441 from the country.

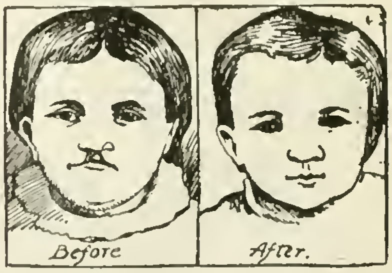
Since its organization, the Hospital has treated in its cots and beds 16,837 children; 12,370 of these were unable to pay and were treated free.

There were 60 cases of club feet corrected last year.



THE HOSPITAL IS A PROVINCIAL CHARITY.

The sick child from the most remote corner of Ontario has the same claim as the child living within sight of the great House of Mercy in College Street, Toronto. Our cause is the children's cause. Could there be one that has a stronger claim on the people of this Province?



Perfect results in Harelip cases. 18 infants were relieved of this terrible deformity last year.

If the Hospital is to continue its great work, it must appeal to your pocketbook as well as to your heart. Let your Dollars be messages of mercy to the suffering little children of Ontario.

Please send your contribution to J. Ross Robertson, Chairman, or to Douglas Davidson, Secretary-Treasurer, The Hospital for Sick Children, College St., Toronto.

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several machine and iron works, butcher shops and their cooling plants, bakeries, plumbing shops, printers, etc. The swings of the two bridges spanning the Fraser at New Westminster city are also operated by the current from this company's lines. All along the river front of this city power lines are now available for any industries intending to locate there. These same power lines are now being extended along the Fraser Valley line to Chilliwack, 64 miles, and have already reached Huntingdon, about 43 miles from New Westminster, serving towns and villages, farmers and sawmills, en route. On this line particularly the mill is taken to the timber instead of the timber to the mill. Many and varied are the uses to which the electric current supplied by the company is put. Its flexibility lends itself to almost any undertaking.

◆

Freight and passenger electric locomotive, B.C. Electric Ry.

Projects, Construction, Betterments, Etc.

Alberta Electric Ry.—In addition to the powers applied for in the notice referred to in our last issue, this company is asking the Dominion Parliament for power to build the following lines:—From Calgary to Macleod, Alta.; from Calgary to Brooks, passing Windermere, Strathcona and Bassano, and also power to build branch lines from the said lines in the districts known as the C. P. Irrigation Blocks. (Dec., 1910, pg. 1065.)

Assiniboia, Man.—A proposition has been made to the municipality of Assiniboia, near Winnipeg, by a real estate company to build an electric railway on streets running north from Portage Ave.

Brandon, Man.—Application is being made by a Vancouver, B.C., financial corporation for a franchise for an electric railway in Brandon, Man. The Mayor, referring to the fact that petitions were being circulated favoring the granting of the franchise, said it had been the general policy of the council to refuse to grant any applications for such a franchise, believing that the city could not afford to give away so valuable a concession. (Dec., 1910, pg. 1065.)

British Columbia Electric Ry.—The city council of Vancouver, B.C., has under consideration the desirability of granting a new franchise for 23 years, covering greater Vancouver.

The Board of Railway Commissioners has ordered the Vancouver, Fraser Valley and Southern Ry., which is building the line through Burnaby tp. to insert a diamond where it crosses the Vancouver, Victoria and Eastern Ry., and that the crossing be protected by interlocking plant, derails and home and distant signals on both lines on each side of the crossing.

The new interurban station which is being built in New Westminster will be of brick, two stories high, on concrete foundations. The roof will be supported on steel columns, so arranged that additional stories can be added as desired. The building will be 132 ft. square, with frontages on Columbia, Front and Eighth streets. On the ground floor, in addition to the accommodation for the public, there will be the offices for the dispatching staff of the company's entire interurban system. Three sets of tracks will pass diagonally through the building from Eighth St. to Front St., and passengers will only be allowed inside the part of the building devoted to the arrival and departure of cars. There will be also on this floor waiting rooms, ticket offices, parcel and express offices. On the second floor there will be offices for the Manager of the Interurban lines, the Local Manager, Divisional Engineer, Auditor, Trainmaster, Roadmaster, and rooms for the employes. In connection with the erection of the building yards will be laid out, and freight sheds, repair shops and other buildings erected. (Dec., 1910, pg. 1065.)

Cape Breton Electric Co.—The Sydney, N.S., city council passed a resolution Dec. 2, asking the company to extend its line to Waterford, along the shore, about 8.5 miles. (June, 1910, pg. 495.)

B.C. Electric Ry. handling big crowds at Vancouver.

Galt, Preston and Hespeler Ry.—The question of an extension of this line from Guelph to Elmira, Ont., is under consideration, but it is said that the company has not reached any decision as to what it will do. The municipalities through which the projected extension will pass are anxious that the line should be built, but have not reached an agreement as to which of three suggested routes should be adopted. (July, 1909, pg. 491.)

Hamilton, Waterloo and Guelph Ry.—J. Patterson, who is conducting the negotiations for the building of this projected electric railway, stated at Hamilton, recently on returning from London, Eng., that he was not in a position to make an authoritative announcement as to construction. He, however, expected shortly to be in a position to do so. (Oct., 1910, pg. 875.)

Huron and Ontario Ry.—Application is being made to the Dominion Parliament to extend the time within which the lines and branches authorized may be built. T. H. Kilgore, Confederation Life Building, Toronto, is Secretary of the company. The act of incorporation gives the company general power, but in endeavoring to arrange routes, etc., the company has proposed to build a line to be operated by electric power. (Dec., 1910, pg. 1069.)

International Ry.-International Traction Railways.—Application is being made to the Dominion Parliament for an act "enabling the International Traction Railways to acquire and become possessed of all the estate property, name, rights, privileges and franchises of the International Ry. in Canada." The notice is given by A. M. Grier, Solicitor for the company, Niagara Falls, Ont. (Mar., 1910, pg. 231.)

London and North Western Ry.—D. A. Stewart advised the London, Ont., city council, Nov. 28, that it had been decided to withdraw the company's application for a guarantee of bonds for the present. (Dec., 1910, pg. 1069.)

London Street Ry.—London and Lake Erie Ry. and Transportation Co.—We are advised with respect to the press reports that a merger of these companies with the London Electric Co. was being arranged, that so far as the latter company is concerned there is no foundation for the reports. From another source we are informed that there have been some attempts to arrange for some such merger, but with what mea-

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sure of success is not known. Other reports state that the merger, if it takes place at all, will include the Grand Valley Ry. and the lines associated with it, and that the whole will come under the control of the Mackenzie, Mann & Co. interests. (Dec., 1910, pg. 1069.)

Montreal and Southern Counties Ry.—Press reports state that an arrangement is being made by which the company's cars may be run over the Montreal Street Ry. beyond McGill St., in the same way as the Lachine cars.

Plans have been approved by the Board of Railway Commissioners for the proposed station building at the corner of McGill and Youville streets, Montreal. An order has been issued by the Board of Railway Commissioners authorizing the opening for traffic of the line from St. Denis St., St. Lambert to Longueuil, Que., 3.5 miles. (Nov., 1910, pg. 965.)

Moncton Tramway, Electricity and Gas Co.—O. P. Boggs, Manager, has notified the Moncton, N.B., city council that it is proposed to lay tracks on a number of the streets in the city, and asking that the routes may be approved. The notice is under consideration. (Oct., 1910, pg. 875.)

Montreal Street Ry.—The city council received a letter from E. A. Robert, President, Dec. 10, stating that the existing agreement between the city and the company was not sufficiently broad to meet the requirements of the city, and suggesting that representatives of the city and the company get together and discuss the situation. The letter is under consideration. (Dec., 1910, pg. 1067.)

Moose Jaw Electric Ry.—Track has been laid on approximately three miles of paved streets in Moose Jaw, Sask., and for some distance on the unpaved streets. The power house and barns are to be located at the corner of Fourth Ave. and High St., where the company has purchased ten lots. The barns will have a capacity for 20 cars, but will be so arranged that they can be added to. It is hoped to have six miles completed by the middle of the year, when the line will be opened for traffic. (Oct., 1910, pg. 875.)

Nanaimo General Electric Ry.—This is the title of the company which it is proposed by the Dominion Stock and Bond Corporation to incorporate for the purpose of building an electric railway in Nanaimo, B.C. The taxpayers are being asked to pass a bylaw granting a franchise to the company, and authorizing the city council to guarantee $300,000 of the company's 4½% bonds for 20 years. The city is to receive 10% of the company's revenue. (Dec., 1910, pg. 1067.)

B.C. Electric Ry. erecting shop, New Westminster.

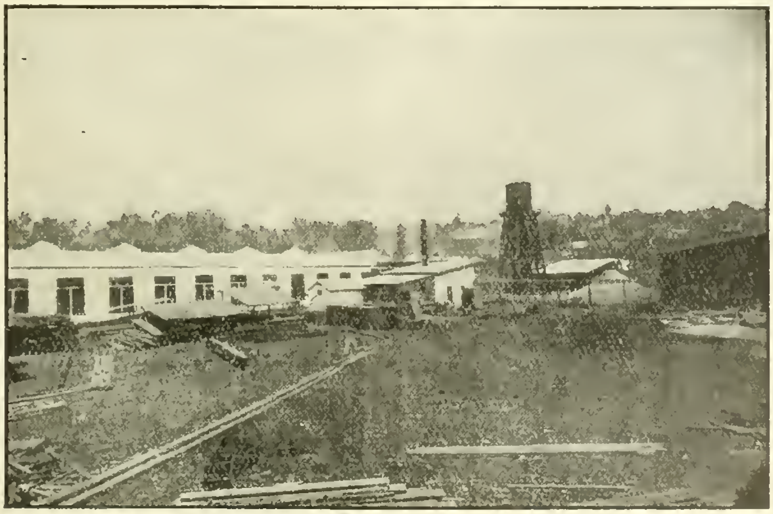
Niagara Falls, Welland and Dunnville Electric Ry.—Press reports state that final steps were taken towards the building of this projected electric railway at a meeting of the directors held Dec. 1. F. E. Misener, Marshville, Ont., is Secretary. (Nov., 1910, pg. 965.)

North Midland Ry.—A bylaw will be voted on Jan. 2 by the taxpayers of London, Ont., favoring the guarantee of the company's bonds for $200,000. The company proposes to build a line from London to St. Marys and Stratford. A. E. Welch, who is associated with the Western Central Ry. is also connected with the directorate of this company. (Oct., 1910, pg. 875.)

Ottawa and Kingston Electric Ry.—A trip over the route of this proposed electric railway has been made by A. H. N. Bruce, C.E., Ottawa, preliminary to the application for a charter of incorporation. At a conference with the railway committees of the Ottawa Board of Trade and the city council, Nov. 23, Mr. Bruce stated that the route of the proposed line was quite feasible, and that sufficient power for its operation could be obtained at Ottawa. Nothing, however, can be done until the company has been incorporated, and parliamentany authority obtained for the building of the line. (Dec., 1910, pg. 1067.)

Peoples Ry.—The taxpayers of three townships and of one town will vote Jan. 2 on bylaws authorizing the taking of preference stock in this projected railway. The places, together with the amount of stock proposed to be taken are:—Fergus, $20,000; West Garafraxa, West Luther, $30,000 each, and Proton, $36,000.

Owing to the assignment of F. Maxwell, who had a grading contract between Berlin and Bloomingdale, and the sale of his plant by the bailiffs, the company has taken over the contract, and is continuing the grading under the charge of its Chief Engineer. (Dec., 1910, pg. 1069.)



Rear view, B.C. Electric Ry. plant, New Westminster.

Port Arthur and Fort William Electric Ry.—The taxpayers of Port Arthur, Ont., are being asked to approve a bylaw to raise $75,000 to pay for 80 lb steel rails to be laid on Cumberland St., and to pave such portions of the street as are at present unpaved. The taxpayers of Fort William are being asked to pass a bylaw authorizing the raising of $100,000 for street railway purposes. (Oct., 1910, pg. 875.)

Saskatoon, Sask.—The city council decided at a recent meeting not to ask the taxpayers to pass a bylaw authorizing the building of a street railway at present. Two companies represented by W. S. Weeks, Edmonton, Alta., and —. McRae, Ottawa, are making applications for a franchise. (Dec., 1910, pg. 1069.)

Toronto and Eastern Ry.—The plans for the line through the towns of Oshawa, Whitby and Cobourg have been approved by the respective councils, and the company will in the near future apply to the Board of Railway Commissioners for approval of its location plans.

Western Central Ry.—The application being made to the Dominion Parliament for extension of powers, etc., has been amended by the addition of the following:—"Providing that its electric railway, authorized to be constructed from Toronto Ont., to London, Ont., with branches to Stratford, Woodstock and Wellesley may be extended from London to Windsor, and connecting therewith that ferries may be maintained across the Detroit River."

The company was originally incorporated by Ontario Legislature in 1905, and has secured extensions of time for construction at various times since. A. E. Welch, who was interested in the promotion of the old South Western Traction Co., is associated with this project, and also with that of the North Midland Ry. (Dec., 1910, pg. 1069.)

Watrous, Sask.—A press report states that the National Securities Corporation

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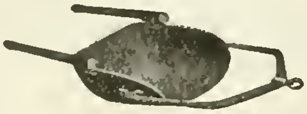

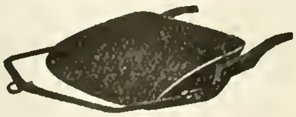

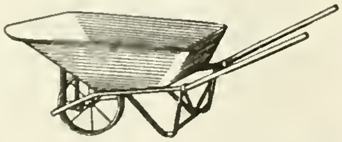

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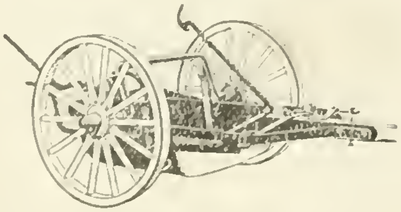

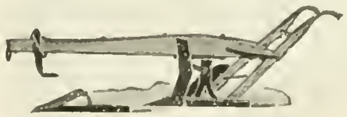

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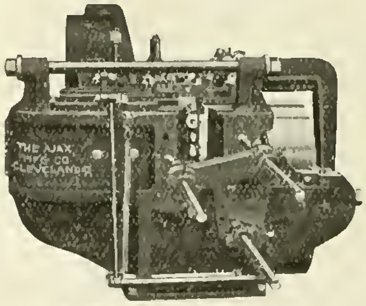

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The Owen Sound Wire Fence Co.
Owen Sound, Ont. Limited

is entering into an agreement for the installation of an electric railway from Watrous to Manitou Lake, Sask. The mineral springs at Manitou Lake are being developed as a heatlh resort, and it is stated that a good deal of building is being done.

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Electric Ry., Finance, Meetings, Etc.

British Columbia Electric Ry.—Gross earnings for Oct. 1910, $349,664; working expenses $205,266; net operating earnings $144,398; renewal funds $25,417; net earnings $118,981; approximate income from investments $20,000; net income $138,981, against $264,306 gross earnings; $131,679 working expenses; $132,627 net operating earnings; $16,394 renewal funds; $116,233 net earnings; $16,500 approximate income from investments; $132,733 net income for Oct. 1909. Aggregate gross earnings for four months ended Oct. 31, 1910, $1,247,122; net earnings $531,577, against $967,172 aggregate gross earnings, and $454,296 net earnings for same period 1909.

Calgary St. Ry.—Gross earnings for Oct., $20,501.30; expenses, $10,858.77; net earnings, $9,642.53; for Nov., $19,857.01; expenses, $10,170.58; net earnings, $9,686.43. Aggregate gross earnings for 11 months ended Nov. 30, 1910, $190,757.88; expenses, maintenance of way and structures, $7,500; maintenance of equipment, $11,015.06; transportation, $75,597.63; general, $7,509.36; interest and sinking fund, $29,874.68; 5% contingent reserve, $9,537.89; net profits, $51,736.36.

Grand Valley Ry.—Action has been entered by the First National Bank of Birmingham, Pittsburg, Pa., to recover from the G.V. Ry., Brantford, Ont., $1,023.42 on certain overdue bond coupons.

Halifax Electric Tramway.—Railway receipts for Nov., $15,524.28, and for two week ended Dec. 14, 1910, $7,176.41, against $14,603.64, and $6,900.92 for same periods 1909.

London St. Ry.—Gross earnings for Nov., 1910, $20,644.79; expenses, $15,494.46; net earnings, $5,150.33; deductions, $2,363.05; net income, $2,787.28, against $18,964.07 gross earnings; $14,211.51 expenses; $4,752.56 net earnings; $2,363.05 deductions; $2,389.51 net income for Nov., 1909. Aggregate gross earnings for 11 months ended Nov. 30, 1910, $232,390.58; expenses, $165,217.56; net earnings, $67,173.02; deductions, $26,308.25; net income, $40,864.77, against $221,685.18 aggregate gross earnings; $154,361.38 expenses; $67,323.80 net earnings; $26,445.81 deductions; $40,877.99 net income for same period 1909.

Montreal St. Ry.—Passenger earnings for Nov., 1910, $355,586; miscellaneous earnings, $10,512.34; total earnings, $366,098.34; operating expenses, $227,441.90; net earnings, $138,656.44; city percentage on earnings, $11,692.01; interest on bonds and loans, $15,763.22; rent leased lines, $552.90; taxes, $4,000; surplus, $106,643.31; expenses per cent. of earnings, 62.13, against $323,446.50 passenger earnings; $11,424.77 miscellaneous earnings; $334,871.27 total earnings; $200,137.56 operating expenses; $134,733.71 net earnings; $11,814.27 city percentage on earnings; $14,471.85 interest on bonds and loans; $498.67 rent leased lines; $4,000 taxes; $103,948.92 surplus; 59.76 expenses per cent. of earnings for Nov., 1909. Aggregate total earnings for two months ended Nov. 30, 1910, $752,786; operating expenses, $433,191.96; net earnings, $319,594.04; total charges, $64,011.14; surplus, $255,582.90, against $688,878.22 aggregate total earnings; $374,872.53 operating expenses; $314,005.69 net earnings; $61,864.27 total charges; $252,141.42 surplus for same period 1909.

Toronto Ry.—Gross earnings for Nov., 1910, $365,466.21; expenses, $192,103.82; net earnings, $173,362.39, against $325,416.71 gross earnings; $168,112.31 expenses; $157,304.40 net earnings for Nov., 1909. Aggregate gross earnings for 11 months ended Nov. 30, 1910, $3,941,125.10; expenses, $2,033,438.42; net earnings, $1,907,686.67, against $3,515,684.40 aggregate gross earnings; $1,786,491.36 expenses; $1,729,193.04 net earnings for same period 1909.

Winnipeg Electric Ry.—Gross earnings for Oct. 1910, $304,114; operating expenses $151,782; net earnings $152,332, against $247,074 gross earnings; $123,766 operating expenses; $123,298 net earnings for Oct. 1909. Aggregate gross earnings for 10 months ended Oct. 31, 1910, $2,602,499; net earnings $1,296,958, against $2,087,971 aggregate gross earnings, and $1,044,926 net earnings for same period 1909.

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Street Car Situation in Toronto.

The description of the Toronto Ry.'s latest type of standard convertible cars in our last issue contained the following sentence:—"The entrance to car is large on the outside of vestibule. making it very convenient for the pay-as-you-enter system, as all passengers have to pass over the entire platform in order to enter." We wish it to be clearly understood that this expression of opinion merely refers to the platform, which with a proper division by a railing might easily be made suitable for the p.a.y.e. system. We must not, however, be understood as expressing the opinion that the new cars, as a whole, are adapted for that system. They have only one rear door. In a city where the traffic is as dense as it is in Toronto, and where the cars are frequently unduly crowded, especially at the rush hours, we believe that two rear doors are necessary, one for entrance and one for exit, and that one exit only, at the front, is not sufficient.

The Toronto Ry. Co.'s bylaws respecting smoking, spitting, etc., and respecting closed motor and trailer cars, as published in our last issue, were approved by the Ontario Railway and Municipal Board Dec. 2. On the bylaw respecting closed motor and trailer cars the board was not unanimous, Chairman Leitch and Deputy Chairman Ingram being in favor of it, and H. N. Kitson dissenting on several points. The company at once proceeded to enforce the bylaws, and the p.a.y.e. system was within a few days put in operation on all the cars. The system proved so inconvenient, on account of specially adapted cars not having been provided, that very general opposition was aroused among the citizens, which culminated in a large mass meeting called by the Mayor, at which resolutions were adopted calling on the Ontario Railway and Municipal Board to reconsider its action, and also asking the Provincial Premier to interfere. After the meeting a mob interrupted the car traffic on a number of streets and did considerable damage by breaking windows, etc.

The matter again came before the Ontario Railway and Municipal Board, Dec. 9, when the city applied to have the p.a.y.e system suspended. This was refused by the Board. Counsel for the company stated that conductors were to be allowed to exercise their judgment as to passengers going out by the rear doors when cars were crowded and when there was no crowd attempting to get on.

On Dec. 19, the Ontario Railway and Municipal Board went further into the question, and at the opening of the hearing, Chairman Leitch said the company had fallen down in its attempt to give a p.a.y.e service. After considerable discussion it was decided to suspend for a month the Board's former approval of the bylaw respecting closed motor and trailer cars, counsel for the Toronto Ry. stating that the company must not be considered as waiving any of its legal rights. The Board's decision permits the p.a.y.e system to be continued for the month on the cars on which stationary fare boxes have been installed. On all cars not so equipped, passengers may enter the cars before paying. The company may proceed with alterations to its cars on the understanding that it assumes the risk of their not conforming to the standard which the Board may finally decide on.

The general consensus of opinion among street railway managements throughout Canada and the United States is that the p.a.y.e system is in every respect the most satisfactory for handling passengers, but it cannot be said to yet be on trial in Toronto, for as before stated, specially adapted cars have not been provided. Where specially constructed cars are in use, as in Montreal, Ottawa, Hamilton, Calgary, Edmonton, New York, Baltimore, Buffalo, Cleveland, Chicago, St. Louis and a large number of other cities, the system is working admirably and with general public approval. In Philadelphia and Pittsburg, attempts to introduce the system without proper cars resulted in failure, which coupled with the experience in Toronto, shows that the system cannot be operated successfully except on the Montreal type of car. Many of the Toronto cars, which have short rear platforms, are not adapted for it and in all cases the rear platforms should be closed in on one side and at the back.

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Levis County Railway.

Following are extracts from the report for the year ended June 30, 1910:

ASSETS.				
Property account			$613,449.24	
Added for year			2,037.99	
			$615,487.23	
Less Sheriff			6,708.79	
				$608,778.44
Stores				3,820.18
Stock sundries				1,591.50
Cash, Imperial Bank			144.52	
Cash, petty cash			230.00	
				374.52
Accounts receivable				805.47
LIABILITIES.				
Bond account			$151,100.00	
Preferred stock			132,600.00	
Common stock			250,000.00	
Sun Life Asa. Co. loan account		$67,950.00		
Imperial Bank loan account		17,650.00		
Sundry accounts payable		6,325.30		
Bills payable		305.00		
Bank British North America overdraft		256.76		
Accrued bond interest and compound		17,569.63		
			110,056.69	
DEBIT.				
Surplus on operation for year		$6,491.25		
Interest Bonds and coupons	$8,531.11			
Interest, Loans, etc.	4,640.22			
		13,171.33		
Profit and loss balance debit		6,680.98		
Profit and loss balance debit, July 1, 1909		21,706.50		
				28,386.58
			$643,756.69	$643,756.69

The receipts for the year ended June 30, 1910, were $62,977.10, and the expenses $56,505.85.

The officers and directors for the current year are:—S. H. Ewing, President; Hon. R. Turner, Vice President; E. A. MacNutt, Secretary Treasurer; other directors, J. Ferman, J. A. Richardson, J. C. Blouin, G. E. A. Jones.

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Montreal Street Railway Accidents.

In our last issue a brief reference was made to an inquiry held by the Quebec Public Utilities Commission in reference to accidents on the Montreal St. Ry., and connecting lines, etc. The Commission made the following order:

1. That no further cars of the single truck pattern be placed in use upon any of the routes without special permission of the Commission and for cause shown. 2. That the number of such cars be reduced each year by 50 at least, and be replaced by larger and double truck cars. Upon application, and for reasons shown and satisfactory to the Commission, the use of such cars upon certain routes will be permitted and sufficient cars of the kind may be retained for the purpose.

3. That all cars 30 ft. or more in length and weighing 25,000 lbs. or over be equipped with air brakes in addition to hand brakes and proper sanding appliances. That cars operating upon routes where there are severe grades, such as the Guy street, be provided with an emergency brake as well as other brakes.

4. That all cars be equipped with an automatic mechanical drop wheel guard to be approved by the Commission. The apron to be attached to the truck. If this be not possible in some cases, then to the platform, as near to the truck as possible, and the wheels further protected by a wire rod screen in addition. This wire rod screen to be placed upon all single-truck cars in addition to the wheel-guard, in any event. The wheel-guards must have a manually tripped connection in addition to the automatic gate, so as to insure an additional safety should the automatic gate fail in its operation. That the tripping gate be placed not over 6 ins. from the ground and the apron of the wheel-guard not over 5 ins. Both tripping gate and apron will be so adjusted that in winter they may be kept the required height above the ice and snow. 5. As soon as cars are so equipped the fenders shall be removed. 6. Draw bars must not project beyond the platform of the car in any case and must be held firmly in place as near to the floor of the platform as possible when not in use. 7. All projecting iron or steel bumpers must be removed.

8. The speed limit of eight miles per hour must be adhered to. 9. All accidents occurring in which there is any injury done to persons, shall be reported to the Commission immediately after their occurrence, with the following particulars: Name and address of person injured or killed; date, time and locality where the accident occurred; number of the car, names of employes present and those of witnesses with addresses. Full particulars of how the accident occurred and of the age, sex, and condition of the person injured. Particulars of the appliances for safety upon the car, whether same were called into use, and how they operated. Rate of speed, route and direction of the car at the time. 10. Before a car is taken out, it must be examined by the motorman and conductor, and a report handed in to the company showing that the trolley, controller, trucks, wheels, motors, bearings, rheostat, fender (if any), wheelguards, brakes and lights, have been examined and are in order. This report to bear the car number, date and time, and be signed by both conductor and motorman. These reports shall be countersigned by the receiving official to denote receipt by him and kept on file. No car shall be taken out which is defective in any of the foregoing respects. If any accident occurs to any of the foregoing appliances while the car is out, the motorman shall report the injury in writing at the nearest station reached after the accident occurs.

A record of all complaints against conductors, motormen or inspectors shall be kept and summarized with the action taken thereon in a monthly report to the Commission.

The foregoing orders, three to 10 inclusive, shall apply to all cars operated over the lines of the Montreal St. Ry. Co., but the use of fenders shall be permitted in the city upon cars operating around the mountain or outside of the city limits and in every case when required by other competent authority.

The work and alterations as outlined above shall be carried out within the following delays: In respect of all double truck cars within four months. In respect of all other cars within 10 months. All work to be done to the satisfaction of the Commission's Engineer, and appliances maintained in thorough working order, subject to inspection and test at any time.

The order of the Commission respecting wheel-guards, brakes and inspection of cars shall apply to all electric railways and tramways under the jurisdiction of the Commission, unless for special reasons communicated to the Commission in writing within 30 days of the receipt of the order, some modification is allowed. Cars operating at over 10 miles per hour in any part are to be provided as well with a suitable fender, or other protection in front, approved by the Commission.

Electric Railway Notes.

The London St. Ry. has received one heavy double broom electric snow sweeper, from the Ottawa Car Co.

The Sherbrooke St. Ry. has received one heavy double broom electric snow sweeper from the Ottawa Car Co.

D. S. Barton has been appointed Consulting Electrical Engineer Quebec Ry. Light Heat and Power Co., on special duty.

The Moose Jaw Electric Ry. has ordered six pay-as-you-enter type cars from the Ottawa Car Co. for spring delivery.

The Regina city council is in the market for six motor cars for its line, construction of which will be started in the spring.

The Quebec Ry., Light and Power Co. has received two 18 ft.. pay-as-you-enter cars, 30 ft. long over all, from the Ottawa Car Co.

The Hamilton St. Ry. has received two 31 ft. cars, 44 ft. long over all, mounted on 27-G-1 trucks, from the Ottawa Car Co.

The Calgary St. Ry. has ordered 12 single truck, single end pay-as-you-enter cars, 8 ft. wheel base, from the Preston Car and Coach Co., Preston, Ont.

The Calgary St. Ry. has received two 33½ ft. semi-convertible pay-as-you-enter cars, 46½ ft.. long overall, mounted on 27-G-1 trucks, from the Ottawa Car Co.

The Port Arthur and Fort William Electric Ry. has ordered two 33½ ft. semi-convertible cars, 46½ ft. long over all, mounted on 27-G-1 trucks, for Port Arthur, from the Ottawa Car Co.

The Levis County Ry. passenger elevator was practically destroyed by fire, Dec. 5. It was built in 1901, costing about $30,000, but has not been used very extensively.

The Edmonton Radial Ry. has ordered four double truck single end pay-as-you-enter cars, 31 ft. 10 in. bodies, mounted on 27-G-1 trucks, from the Preston Car and Coach Co., Preston, Ont.

The British Columbia Electric Ry., has erected a lecture room at Vancouver, and given the use of equipment, in connection with the night school work carried on there, by a committee of the employes, the funds being supplied by the company.

The Quebec Public Utilities Commission has authorized the Quebec County Ry., a subsidary of the Q.R.,L. & P. Co., to open for traffic the portion of its railway from Maple Ave., Montcalm, northerly and westerly to the top of Sillery Hill.

The Edmonton Radial Ry. has ordered four 30½ ft. semi-convertible car bodies, 43½ ft. long over all, and has received two 28 ft. pay-as-you-enter cars, 44½ ft. long over all, mounted on 27-G-1 trucks, and one heavy double broom electric snow sweeper, from the Ottawa Car Co.

The Port Arthur and Fort William Electric Ry. has ordered two single end double truck pay-as-you-enter cars, 31 ft. 10 in. bodies, mounted on 27-G-1 trucks, for Port Arthur, and two double end, but otherwise similar cars for Fort William, from the Preston Car and Coach Co., Preston, Ont.

C. J. Pigot, heretofore Secretary and Roadmaster Quebec Ry., Light and Power Co., has been appointed Chief Engineer Quebec Ry. Light, Heat and Power Co., vice E. A. Evans, resigned. He will have charge of all construction work, (except electric), track and roadway, real estate and buildings, and general engineering.

The Montreal Tramway and Power Co. has been incorporated in London, Eng., with a total capitalization of $20,000,000, to take over the Montreal Street Ry. and other concerns. The officers and directors are:—President, E. A. Robert; Vice President, J. W. McConnell; Secretary, H. R. Mattison; other directors, F. H. Wilson, J. G. Ross, H. A. Lovett, K.C.

The Dominion Power and Transmission Co., Hamilton, Ont., has ordered from the Preston Car and Coach Co., Preston, Ont., for delivery by May 1, three interurban cars, 55 ft. 8 ins. over bumpers, 43 ft. 8 ins. over end posts, 8½ ft. wide over sills, mounted on Baldwin Locomotive Works trucks with steel wheels, and with Westinghouse electrical and air brake equipments.

The Quebec County Ry. was fined $200, Dec. 6, by the Quebec Public Utilities Commission for laying tracks on the south side of the road from Maple Ave. to Sillery, for which permission had not been granted, instead of on the north side, for which permission had been granted. On the favorable report of the Board's engineer, the company was authorized to continue the laying of rails on the south side.

The arbitrators in the differences between the Winnipeg Electric Ry. and its employes, after a protracted hearing, brought in an award against the men, whose principal ground of complaint was that the company refused to reinstate some employes who had been dismissed for having gone into public houses while in uniform. The men expressed dissatisfaction with the award and went on strike Dec. 17.

The British Columbia Electric Ry. during 1911 will build, at its own car shops at New Westminster, 30 city type steel frame, pay-as-you-enter, double truck, four motor cars; three interurban steel or wood frame pay-as-you-enter double truck four motor cars, and a number of box, flat and dump cars, and will place orders, tenders for which have been asked, for 30 city type steel frame pay-as-you-enter double truck four motor cars; 10 suburban, steel or wood frame pay-as-you-enter double truck four motor cars; two interurban, steel or wood frame pay-as-you-enter double truck four motor cars, and two electric locomotives.

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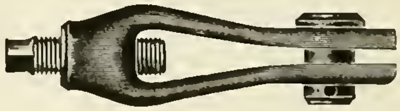

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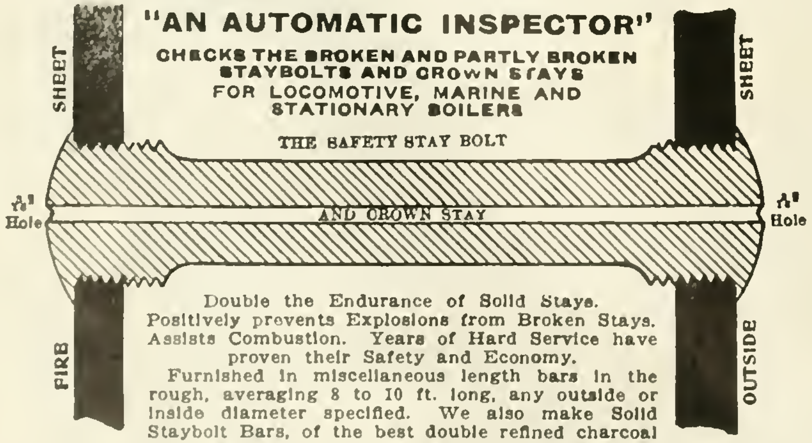

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ELECTRIC RAILWAY STATISTICS FOR YEAR ENDED JUNE 30, 1910

The following abbreviations are used in the names of railways—E., electric; E.R., electric railway; E.S.R., electric street railway; Ry., railway; S.R., street railway. The minus mark (—) in the column for net income or deficit, shows that there was a deficit in the operations of the line to the extent of the figures given. The numbers in brackets—thus (1)—after the name of a railway refer to notes below.

Name of Railway	Mileage	Gross Earnings	Operating Expenses	Taxes, Interest, etc.	Net Income or Deficit	Passenger Car Mileage	Freight Car Mileage	Fare Passengers Carried
Berlin & Waterloo S.R. (1)	3.12	$ 31,750	$ 24,313	$ 5,436	$ 1,999	90,000	7	673,514
Berlin & Bridgeport Ry. (1)	2.40	6,307	5,237	960	73	34,400	....	150,648
Brantford & Hamilton E.R. (2)	23.00	98,748	67,913	59,771	—28,936	233,733	32,978	372,905
British Columbia E.R. (3)	100,79	1,912,121	1,210,855	....	701,266	5,623,439	146,883	33,417,659
Calgary Municipal E.R.	12.00	144,244	87,263	22,860	34,120	500,622	....	3,329,697
Cape Breton E.R.	11.58	93,332	54,771	....	54,923	324.821	....	1,698,723
Chatham, Wallaceburg & L. Erie (4)	32.85	74,626	46,439	30,277	—2,091	238,761	32,075	269.469
Cornwall S.R.	4.00	25,759	20,700	....	5,058	192,445	13,731	357,166
Galt, Preston & Hespeler S.R. (5)	17.81	140,280	75,891	8,288	56,193	219,977	35,266	823 167
Leased Preston & Berlin (5)	....	....	....	....	....	....	....	....
Grand Valley Ry. (6)	38.29	75,589	70,012	3,014	2,562	358,953	....	1,026,354
Guelph Radial Ry. (7)	6.00	29,149	22,626	....	6,522	187,000	5,500	605,476
Halifax E. Tramway (8)	9.90	198,459	116,275	46,672	161,334	888,024	....	4,465,308
Hamilton & Dundas S.R. (2)	7.00	46,883	34,442	15,074	161	110,381	795	511,344
Hamilton, Grimsby & Beamsville E.R. (2)	22.00	105,301	82,422	9,891	12,987	291,212	50,692	508,091
Hamilton Radial Ry. (2)	25.00	135,484	101,756	72,557	—38,830	472,236	21,390	1,135,291
Hamilton S.R. (2)	22.00	367,400	230,914	73,172	63,313	1,647,524	....	9.123,669
Hull E. Co. (5)	12.86	94,957	84,870	869	46,414	736,660	35,175	1,391,677
International Transit Co. (9)	3.68	54,194	34,301	28,214	4,434	305,170	....	1,159,787
Kingston, Portsmouth & Cataraqui E.R.	8.00	30,807	31,508	3,495	—2,994	199,680	....	721,212
Levis County R.	10.25	62,997	55,870	13,806	—6,680	320,220	....	1,368,258
London S.R. (10)	25.73	248,556	168,540	34,636	45,656	1,421,735	....	6,718,735
London & Lake Erie R. & Transportation Co. (11)	27.50	105,062	69,311	904	34,958	310,195	35,458	553,133
Montreal Park & Island Ry. (12)	29.18	320,661	221,603	144,882	—45,824	1,165,812	9,920	4,006,245
Montreal S.R. (12)	76.29	4,145,849	2,337,907	547,501	1,369,902	15,134,852	162,691	102,377,543
Montreal Terminal (12)	18.22	132,313	104,931	40,660	—13,279	626,072	53,486	1,787,654
Montreal & Southern Counties R.	7.20	24,744	39,899	....	—15,111	70,935	....	319,778
Niagara Falls Park & River R. (13)	11.91	153,339	82,842	32,867	44,325	350,512	....	1,295,485
Niagara, St. Catharines & Toronto R. (14)	40.06	268,173	173,866	69,959	24,347	701,016	36.318	2,565,262
Nipissing Central R.	5.10	13,845	3,971	698	9,175	23.500	....	149,980
Oshawa R.	7.81	79,679	49,237	5,495	26,257	34.578	22,983	138,686
Ottawa E.R. (15)	23.40	716,594	466,530	50,484	199,578	3,924,542	25,727	15,987,849
Peterborough Radial R.	5.10	32,315	26,272	4,151	2,609	257,063	....	710,853
Pictou County R.	7.90	40,588	26,021	31,271	9,814	138,634	4,893	839,369
Port Arthur & Fort William S.R. (16)	10.00	130,664	74,373	....	56,290	491,766	....	2,832,426
Quebec Ry. Light & Power Co. (17)								
Citadel Division	17.22	302,974	208,643	....	94,331	1,602,453	....	7,169,245
Montmorency Division	25.10	160,063	106,087	....	53,975	330,562	....	1,269,348
Sandwich, Windsor & Amherstburg R. (21)	35.06	191,400	104,917	31,103	84,040	854,794	....	3,031,244
Sarnia S.R. (22)	8.35	43,184	31,276	4,245	7,661	143,990	....	723,566
Sherbrooke S.R.	7.00	31,176	32,593	6,637	—8,054	288,020	....	734,319
St. John R. (18)	12.50	172,222	154,099	51,551	56,782	978,134	....	3,878,521
St. Stephen S.R. (19)	7.00	29,660	25,991	5,570	—1,901	183,960	....	587,538
St. Thomas S.R. (20)	7.50	17,451	26,421	....	—8,970	236,328	....	409,685
Sydney & Glace Bay R. (23)	20.98	111,291	65,508	23,440	22,717	246,761	20,740	2,038,754
Toronto R. (24)	52.58	4,132,003	2,114,092	877,890	1,140,021	15,391,301	....	103,480,724
Toronto Suburban R.	9.84	52,535	28,623	9,533	14,631	227,113	....	1,047,191
Toronto & York Radial R. (24)	72.43	372,509	216,067	110,099	46,342	1,018,299	87,916	3,794,219
Windsor, Essex & L. Shore Rapid R.	36.16	106,225	72,827	54,882	—21,484	240,779	54,936	296,280
Winnipeg S.R. (25)	65.50	1,212,669	630,891	372,982	1,082,648	4,892,661	....	28,814,161
Yarmouth S.R.	3.00	....	....	....	....	98,340	....	225,906
Totals	1049.07	$17,076,123	$10,121,780	$2,953,759	$5,577,434 —194,158	64,359,605	889,561	360,964,876
					$5,383,276	65,24	9,166	

Notes to Electric Railway Statistics.

The various lines carried 99,227,824 transfer passengers, bringing the total number of passengers carried to 460,192,700, and the twenty lines carrying freight reported that 852,294 tons had been transported.

(1) The Berlin and Waterloo St. Ry. is owned by the town of Berlin, Ont. It leases the Berlin and Bridgeport Ry. from a company.

(2) The Dominion Power and Transmission Co., owns or controls the Brantford and Hamilton Ry., Hamilton and Dundas Ry.; Hamilton, Grimsby and Beamsville Electric Ry.; Hamilton Radial Ry.; and Hamilton St. Ry.

(3) The British Columbia Electric Ry. operates local lines in Vancouver, New Westminster and Victoria, and interurban lines radiating from Vancouver. It has 13.44 miles of second track, and operates over 21 miles of leased lines.

(4) The Chatham, Wallaceburg and Lake Erie Ry. added $9,300 to reserves and special charges, and paid $14,040 in dividends out of net income.

(5) The Galt, Preston and Hespeler Ry. which also operates the Preston and Berlin Ry. under lease, has 1.36 miles of second track. It is operated in connection with the C.P.R. under a lease. The C.P.R also owns the Hull Electric Co. This company has 11.51 miles of second track and operates over 1.82 miles of leased track.

(6) The Grand Valley Ry. mileage includes the lines of the Brantford St. Ry., the G.V. Ry., and the Woodstock, Thames Valley and Ingersoll Ry., which were reported separately in previous years.

(7) The Guelph Radial Ry. is owned by the city of Guelph.

(8) The Halifax Electric Tramway Co. has 3.09 miles of second track. It paid $84,000 in dividends out of net revenue.

(9) The International Transit Co.'s line, owned by the Lake Superior Corporation at Sault Ste. Marie, Ont., connects with the Trans St. Mary's Ry. at Sault Ste. Marie, Mich., owned by the same company.

(10) The London St. Ry. has 6.79 miles of second track. It paid $33,120.00 in dividends out of net income.

(11) The London and Lake Erie Ry. and Transportation Co. is the old Southwestern Traction Co. It has trackage rights over the St. Thomas St. Ry. 2.28 miles.

(12) The Montreal St. Ry. has 57.18 miles of second track, and operates over 8.58 miles of leased tracks. It reports a surplus of $2,591,365.46 after adding $200,000 to reserves and paying $999,573 in dividends. It owns the Montreal Park and Island Ry., which has 14.61 miles of second track, and paid $18,900.00 dividend out of the latter's net income. It also owns the Montreal Terminal Ry., which has 4.66 miles of second track.

(13) The Niagara Falls Park and

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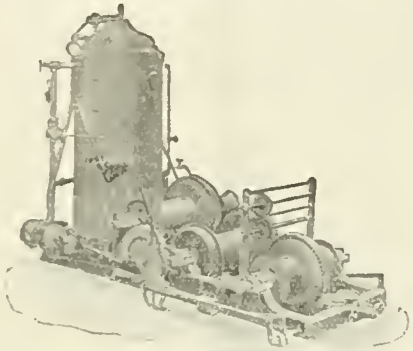

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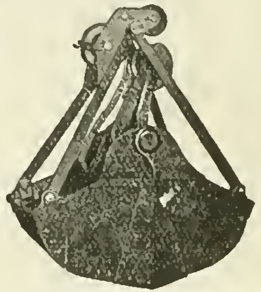

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PRESIDENT, A. A. Allan, Montreal; MANAGER AND SECRETARY, T. Robb, 526 Board of Trade, Montreal.

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GRAND MASTER, Capt. J. H. McMaugh, Toronto, Ont.; GRAND SECRETARY-TREASURER, Capt. H. O. Jackson, 376 Huron St., Toronto.

Harbor and River Works, 1909-'10.

The total expenditure of the Department of Public Works for the year ended Mar. 31, 1910, was $11,342,565.29. Of this sum there was expended on harbors and rivers $3,207,233.59; on dredging, plant, etc., $3,669,030.18; and on telegraphs, $448,649.70, the remainder being on public works, other than those affecting transportation interests. The total revenue received was $485,884.96, of which $45,816.92 was from graving docks, and $136,747.31 from telegraph lines.

The expenditure on dredging, which covers the provision, maintenance and repairs of dredging plant as well as the actual work done in harbors and along channels, now amounts to nearly one-third of the department's total expenditure. The usual method heretofore used for deepening channels has been that of excavation, and this is the only method in the case of maritime harbors. On the inland lakes and rivers, however, considerable study has recently been given to a more economical and better method; that is, to raise the surface of the water by means of dams and controlling works at the outlets, thus establishing reservoirs for the storage of the surplus water which comes down in the spring, so that later they may be gradually released to increase the low water flow in time of deficiency. The Department has in hand at a number of points improvements of this nature. Comparatively few years ago 14 ft. navigation was ample for all needs, but now 20, 22 and in the larger ports 25 ft. are required. In addition to the ordinary silting in of harbors and rivers, larger vessels, both passenger and freight, of much deeper draught, are being built. Much additional dredging has been rendered necessary through the lowering of the water level, especially on Lake Huron. Although to some extent this is due to the diversion of the Chicago drainage canal, in all probability the main cause is to be found in the improvements which have been made in the Detroit River. Among the places where work has been carried on special mention may be made of the progress of the improvements under way at Fort William, Victoria Harbor, and Tiffin, Ont. At Fort William, access can now be had to the Grand Trunk Pacific Ry. 3,500,000 bush. elevator; the channel leading to the C.P.R. elevator at Victoria Harbor is 125 ft. wide and 1,600 ft. long, while the channel to the G.T.R. elevator at Tiffin has been completed to the required width and depth for its entire length. A new dredge—the Nereus—was acquired for the Maritime Provinces, and after being overhauled at Halifax, she was set to work at Bathurst, N.B. The dredging plant now owned by the Department consists of 42 dredges, six stone lifters, one snag boat and 21 tugs.

The principal expenditures on harbor and river works were made in Prince Edward Island, Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia. Of the works in these provinces the more important have been:—The preparation of several additional shipping berths, the extension of the Sand Point wharf and the erection thereon of a warehouse at St. John, N.B.; the erection of a wharf at Pointe a Carcy, the preparation for slips on the St. Charles River, and building of a deep water wharf at Levis, Que.; the construction of a new western entrance to Toronto harbor, which, when completed, will consist of two parallel piers 220 ft. south of the present western entrance, having a length of 2,200 and 2,500 ft. respectively, between which there will be a depth of 18 ft. of water. For the maintenance of water levels, the principal work in hand is on the Ottawa River. One dam is under construction at the foot of Lake Timiskaming, a second at the outlet of Lake Kipawa, the plans for a third at Gordon creek, another outlet of Lake Kipawa, and plans are in preparation for a fourth at Lake la Quinze.

◆

Winnipeg—Edmonton Navigation.

The possibilities of the development of water transportation in the three prairie provinces has been receiving the attention of the Public Works Department. In the early pioneer days, prior to the advent of the railways, a number of flat-bottomed sternwheel vessels were built and operated on the Saskatchewan River with considerable success. Their operation covered a period from 1875 to 1886, when vessel carriage was gradually abandoned, it having been found cheaper to ship by rail. Very little consideration was given to the opening up of commercial waterways in the Northwest from that time until the fall of 1909, when the Department gave instructions that a careful study of conditions should be begun, and provision made to carry out the necessary surveys and investigations to enable a definite conclusion to be reached as to what was possible in that direction, and to form a fairly approximate estimate of the cost.

In the fall of 1909 a preliminary investigation was made of the Saskatchewan River between Lake Winnipeg and The Pas, a stretch of 146 miles, the most difficult portion to be improved. In the last 23 miles the fall is 101 ft., to improve which will necessitate the construction of two dams and five locks, giving a 9 ft. draught at low water as far as the end of Cedar Lake, which would be the head of deep water navigation and the point of transfer. The approximate estimate of the cost of these improvements is $3,000,000. An important feature in connection with the scheme outlined is that at one of the proposed dams a water power of some 80,000 h.p. would be created, which would be of immense importance in the establishment of local industries on the possible milling of wheat and grinding of pulp on the line of the projected railway to Hudson Bay.

Early in the summer of 1910 the investigation of the Saskatchewan River above The Pas was continued, and seven parties were placed in the field under the direction of L. R. Voligny. The work directed to be done consists of a reconnaissance survey of the river from The Pas to Edmonton, 752 miles, and four level parties, two transit parties, and one contour party have been engaged on it. Each level party set out to cover 188 miles of the river, to ascertain the accurate river slope; the transit parties undertook the necessary topographical and hydrographic work in portions of the river requiring special consideration. The greater part of the work of improvement will be required at La Colle falls, some 23 miles below Prince Albert, the work extending 12 miles below to The Forks, where the north and south branches of the Saskatchewan meet. This stretch of the river is very crooked and narrow, containing no less than 15 rapids, and it is the most difficult and dangerous part of the North Saskatchewan River to navigate. Other portions of the river requiring improvement will be the Cadotte, Nipawin and Tobin rapids. The work, which, it is hoped to complete during the season, is to complete the levels of 530 miles of the river, and the making of special local surveys to ascertain what wing dams or other structures will be necessary to procure a navigable channel. The Saskatchewan River is an alluvial stream of rapid flow, and is obstructed by shifting sandbars; the latter presenting the greatest impediment to navigation. Above Cedar Lake, the river seems to be adapted for only shallow draught navigation of from four to five feet. This, however, will be sufficient for vessels of the sternwheel type, and it is thought that the cost of securing navigation for such craft will not be very great.

An important link in this chain of water communication, says the Deputy Minister, has already been secured by the construction of the St. Andrews lock and dam, on the Red River, below Winnipeg, and 28 miles above Lake Winnipeg, which were formally opened for traffic July 14. This lock and dam afford, at periods of lowest water observed, uninterrupted navigation for vessels drawing up to nine feet of water between Winnipeg and points on Lake Winnipeg, which has an area considerably larger than that of Lake Ontario. The lock has an effective length of 200 ft. and a width of 45 ft., large enough for a vessel of 1,600 tons capacity. The maximum lift will be 21 ft. at the period of lowest water. The lock possesses all the latest features, including automatic self-balanced opening and filling valves, which are being used for the first time in Canada. The lift is obtained by the construction of a movable dam, consisting of a fixed substructure or dam of concrete and a series of steel truss bridges resting on piers, from which are operated a number of frames on which roll curtains of wooden laths. This movable dam is the first of its kind to be built on the continent. "With the development of navigation on the Saskatchewan," the Deputy Minister says in conclusion, "Canada would stand unique among the countries of the world in the matter of water transportation: 30 ft. navigation (soon to be 35) from the sea to Montreal, a distance of nearly 1,000 miles; 14 ft. from Montreal to Fort William, somewhat over 1,200 miles; 9-ft. navigation from Winnipeg to the head of Cedar Lake, and from there to the Rocky Mountains, from 4 to 5-ft. navigation, over a distance of 1,100 miles, a total of approximately 3,300 miles of actual inland waterway, traversing the greater part of the northern half of this continent, the only break in the chain being the 400 mile stretch from Fort William to Winnipeg."

In connection with the question of the building of a railway to Hudson Bay, the Department made an investigation to determine the possibility of establishing navigation on the Nelson River between Lake Winnipeg and Hudson Bay. The report shows that although perfectly feasible, it would be an undertaking of considerable magnitude, very much like the proposed Georgian Bay canal. This proposed waterway has a length of 440 miles, with a fall of 758 ft., whereas the Nelson River channel would be 430 miles long, with a a fall of 700 ft.

◆

The St. Lawrence Navigation Season.

The Montreal Harbor Commission revenue for the 1910 season was $404,233.13, against $350,883.65 for 1909. Of these amounts $256,500 was received from imports, $89,000 from exports, and $58,733.13 from local traffic, in 1910, against $202,500 from imports, $93,500 from exports, and $54,833.65 from local traffic, in 1909. There was an increase in the number and tonnage of vessels using the port, the figures being 747 vessels with a tonnage of 2,234,722 for 1910, against 669 vessels and 1,906,922 tonnage for 1909. The season opened Apr. 11, and closed Dec. 2, the steamboat Carleton passing through to Quebec on that date, while the last ocean-going vessel was the s.s. Bornu, on Dec. 1.

A number of improvements were completed during the year, the chief being the grain elevator opposite the Jacques Cartier pier, and an extension of the grain conveyor system. The elevator is 314 by 100 ft., with a height above wharf level of 220 ft., and with concrete foundations 23 ft. below the wharf level. It has a capacity for 1,772,000 bush., and can receive grain from seven cars at a time on each of the four tracks running through the elevator, making 240 cars a day of 10 hours. The reconstruction of the Victoria wharf, making it a high instead of a low level wharf, the elevation of the railway tracks from Bonsecoeurs market to Molson's creek, and a large amount of dredging work were also completed.

The C.P.R. reports that about 15,000 passengers were carried eastward on its vessels, and about 46,000 westward, a considerable increase, while in the freight department, 363,392 tons were carried, against 376,300 tons in 1909. The Allan Line carried 14,342 passengers eastbound and 62,785 westbound, against 14,843 eastbound and 37,141 westbound in 1909. In freight it carried 235,766 tons outward and 150,389 inward in 1910, against 251,850 tons outward and 127,541 inward in 1909. The Canadian Northern Steamships carried 9,428 passengers westbound and 4,135 eastbound, the two vessels run making seven round trips each. The White Star-Dominion Line carried about 15,000 more passengers than in 1909, and made an increase in its westbound freight business, but a decrease in eastbound traffic. The Donaldson and Thomson Lines, and Head Line also report considerable increases over previous seasons in westbound traffic, but the eastbound traffic has shown a slight decrease in each case.

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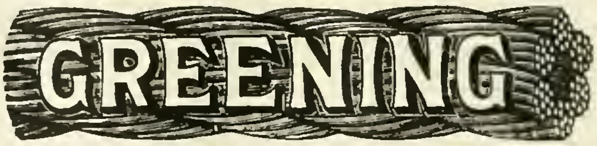

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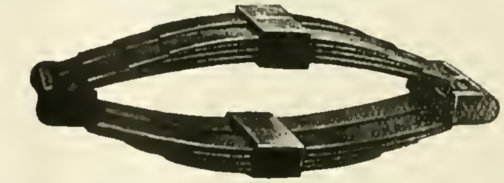

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HAND, MACHINE AND TAPPER TAPS, STAY BOLT TAPS, BOILER AND PATCH BOLT TAPS. QUALITY UNSURPASSED.

St. Lawrence and Chicago Steam Navigation Co.

This company has declared a dividend of 3% for the year 1910, payable Jan. 2, 1911, the reduction being attributed to the unsatisfactory earnings during the year.

Previous yearly dividends from 1901 to date have been as follows: 1901, 15%; 1902, 26 2-3%; 1903, 10%; 1904, 8%; 1905, 1906 and 1907, 10% yearly; 1908, 7%; 1909, 8%.

In 1909 the steamship earnings were $112,062.44, and interest $868.36, total, $112,930.80. The cost of management was $13,507.07, leaving net earnings of $99,423.73, deducting the 8% dividend, $68,800, left $20,623.73, which added to $102,383.55 brought forward Jan. 2, 1909, made a balance of $133,007.28 at credit of profit and loss Jan. 2, 1910.

◆

Canadian Marine Investigations.

An English marine paper has recently criticized the way in which official investigations into shipping casualties are conducted in Canada, especially in cases in which ships registered in the United Kingdom and officered by men holding Board of Trade certificates are concerned. It alleges that when a preliminary enquiry is ordered by the Government, the wreck commissioner goes aboard a vessel and holds a sort of informal enquiry, getting statements from officers and men, though not under oath. It further alleges that when the time comes for the real official enquiry to be held, the same official, who has already held the informal enquiry, is found to be sitting on the bench of the court, and, with the assistance of two assessors, acting as judge in the matter. The Mercantile Marine Association has taken the matter up in England, and, having referred it to the Board of Trade, that body asked to be provided with specific instances in which the irregularities complained of occurred. In reply, the association quoted the cases of the s.s. Aoeta and the s.s. Montezuma, and in both instances it is alleged that Capt. L. A. Demers, Wreck Commissioner, not only held the preliminary enquiry, but also afterwards acted as arbiter of the points in dispute.

The practice complained of is not of at all a serious nature, even if there is any valid objection at all which can be urged against it. The preliminary informal enquiry referred to is merely for the information of the Minister of Marine, to guide him as to whether an informal investigation should be held or not. As a matter of fact, it often happens that other competent officials are not available to make the preliminary enquiries. Possibly when they are available it would be better to have the informal enquiry and the later investigation in which judgment is given not both participated in by the same official, but there does not appear to be any evidence that any injustice has resulted from the practice complained of and the complaints has probably been made by some dissatisfied individual.

◆

Atlantic and Pacific Ocean Marine.

The Canadian Northern Steamships' s.s. Royal Edward, created another record recently, in arriving in Halifax, N.S., from Bristol, Eng., in 5 days and 10 hours.

The All-Red Steamship Co., of Montreal, is seeking Dominion legislation to empower it to operate vessels from any Canadian ports on the Atlantic and Pacific.

Press reports from the West Indies state that all the local Governments are opposed to the discontinuance of the direct steamship line with Great Britain, and the substitution of a line by way of Canada.

The steam tug Gopher, which has been built at Garston, Eng., for the C.P.R., for use in connection with its vessels while in the Mersey, recently underwent her trials there, with satisfactory results.

A St. John, N.B., press report states that the Allan Line Siberian, will shortly be offered for sale, and if not sold, she will be scrapped, together with a number of other Allan Line vessels. Her place on the Newfoundland service has been taken by the s.s. Numidian.

A. Piers, Manager C.P.R. steamships, left Canada for Liverpool, Eng., Dec. 20, after a conference with the company's officials, regarding the proposed additional vessels, for its ocean fleet. It is reported that the two vessels which the company has in contemplation will be placed in the Pacific service, and that construction will be commenced at once.

The Uranium Steamship Co. was recently charged at Halifax, N.S., with having wilfully and knowingly attempted to land 15 passengers in Canada, suf-

LIST OF STEAM VESSELS REGISTERED IN CANADA DURING NOVEMBER, 1910.

Name	No.	Where and When Built.	Engines, etc.	Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
Accommodation	126,460	Sorel, Que., 1910.	Screw 48 n. h. p..	151.5	36.2	7.4	409	278	Sorel, Que.	H. Beauchemin, Sorel, Que.
Annacis	126,790	New Westminster, B.C.,1910	" 16 " ..	63.4	17.5	8.9	56	31	New Westminster, B.C	J. Wm. Pike, New Westminster, B.C.
B. White (1) .	126,274	Ballard, Wash., 1908	" 2 " ..	42.9	8.9	2.7	14	10	" " "	H. Rushton, New Westminster, B.C.
Bawating (2) .	126,867	Detroit, Mich., 1875	" 28 " ..	110.0	29.0	11.4	246	167	Sault Ste. Marie, Ont.	International Transit Co., Sault Ste. Marie, Ont.
EdwardAlfred	126,923	Chicoutimi, Que., 1910	" 32 " ..	85.5	21.0	7.5	139	51	Quebec, Que.	La Cie. Generale du Port de Chicoutimi, Que.
Emma Mac .	130,266	Kippewa, Que., 1910	" . 24 " ..	78.8	18.0	5.6	57	36	Ottawa, Ont.	J. Lumsden, Ottawa, Ont
Flying Spur..	126,788	Steveston, B.C., 1910.	" 18 " ..	38.8	8.8	4.0	10	7	New Westminster, B.C	L. C. York, Steveston, B.C.
Harwood	130,372	Peterboro, Ont., 1909.	" 2 " ..	36.0	9.0	3.4	23	14	Peterboro, Ont.	Minister of Railways and Canals, Ottawa
J. C. Miller ..	126,610	Douglastown, N.B., 1910...	" 12 " ..	54.0	14.9	5.0	33	15	Chatham, N.B. .. .	J. C. Miller, Millerton, N B.
Kleetsa (3)...	130,301	Winslow, Wash., 1907	" 3 " ..	43.8	10.5	5.7	18	12	Vancouver, B.C.	E. P. Davis, Vancouver, B.C.
Margaretville	126,804	Margaretville, N S., 1910.	" 19 " ..	93.3	20.8	8.6	107	39	Annapolis Royal, N.S.	Margaretville Steamship Co., Margaretville, N.S.
Mio	126,792	Steveston, B.C., 1910.	" 10 " ..	34.4	8.0	3.0	6	4	New Westminster, B.C	B. Hamade, Steveston, B.C.
Motor Queen (4)	130,322	Alexandria Bay, N.Y., 1904.	" 10 " ..	50.4	10.8	4.8	20	17	Kingston, Ont........	Queen City Oil Co., Toronto
Nishiu	126,787	Steveston, B.C., 1908......	" 15 " ..	38.5	9.3	3 0	8	6	New Westminster, B.C	J. Stevens, Salt Spring Islan 's, B.C.
Peach	130,303	Vancouver, B.C., 1910	" 4 " ..	39.6	10 4	5.3	18	12	Vancouver, B.C.	G. H. Deighton, Van Anda, B.C.
Prince Rupert	124,260	Dumbarton, Scotland, 1908 .	" 170 " ..	249.0	43.0	19.5	1908	1172	Kingston, Ont........	Kingston Shipping Co., Kingston, Ont.
Scotsburn ...	126,90	Mahone Bay, N.S , 1910	" 32 " ..	116.8	22.2	9.9	224	119	Halifax, N.S.	Halifax and Glace Bay Steamship Co , Halifax, N S.
Sorais	126,793	Eburne, B.C., 1910.	" 10 " ..	28.5	7.9	2 5	6	4	New Westminster, B.C	H. R. Andrews, Eburne, B.C.
Stormalong ..	130,392	Lachine, Que., 1910	" 3 " ..	28.0	6.0	2.5	3	2	Montreal	E. G. Hurtubise, Grand Piles, Que.
Syra	130,302	Vancouver, B.C., 1910.	" 1 " ..	30.0	8.5	4.6	8	6	Vancouver, B.C.	P. H. Crause, Vancouver, B.C.
Tsuru	126,784	Steveston, B.C., 1910	" 15 " ..	39.0	9.3	3.0	9	6	New Westminster, B.C	G. Isomura, Steveston, B.C.
U ashimo ...	126,789	" " "	" 21 " ..	35.3	10.4	4.9	12	8	" " "	Crescent Oyster Co., Vancouver, B.C.
Vaquero . ..	130,300	Vancouver, B.C., 1910	" 2 "	31.8	7.7	4.6	9	6	Vancouver, B.C.	A. H. Nichol, Vancouver, B.C.

(1) Formerly Lillian. (2) Formerly Clansman. (3) Formerly Fortune. (4) Formerly Supply.

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA DURING NOVEMBER, 1910.

Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners
Alda E......... ..	122,039	MiddleWestPubnico,N.S.,1908	Sloop	31.0	14.0	6.6	10	Weymouth, N.S.....	P. O. Doucett, West Pubnico, N.S.
Alika P	130,332	Lameque, N.B., 1910... ..	Schr.	36.0	12.0	5.0	15	Chatham, N.B.......	Z. G. J. Paulin, Lameque, N.B.
Dredge Barnston.	126,791	New Westminster, B.C., 1910	Dredge	60.0	20.0	4.7	52	New Westm'ster, B.C.	S. Huff, M.O., Ladner, B.C.
F. L. No. 1.	130,393	Pictou, N.S., 1902....	Scow	52.0	22.0	6.4	76	Montreal.	F. Lemoine, Montreal, Que.
F. L. No. 2.......	130,394	St. Pierre, Miquelon, 1901....	"	46.0	20.0	8.8	64	"	" " "
F. L. No. 3.......	130,395	" " 1901....	"	48.0	20.0	5.7	53	"	" " "
F. C. Lockhart...	126,018	Annapolis Royal, N.S., 1910..	Schr.	125.0	31.4	11.8	288	Annapolis Royal, N.S.	F. W. Pickels, M.O., Annapolis Royal, N.S.
Floating Crane No 1.........	126,770	Barrow, Eng., 1908..........	Scow	200.5	43.1	9.2	445	Montreal	Harbor Commissioners of Montreal
L. C. & S. No. 7..	130,396	Montreal, 1910.........	"	49.0	16.0	4.6	37	"	L. Cohen, Montreal, Que.
Maggie Swift....	130,333	Point Sapin, N.B., 1907.......	Schr.	32.0	10.0	5.0	18	Chatham, N.B.. ...	A. A. McGrath, Escuminac, N.B.
Malden	130,381	Chatham, Ont., 1886	Scow	77.8	20.0	5.0	65	Amherstburg.........	J. S. McQueen Amherstburg, Ont.
Nellie J. Banks ..	126,663	Allendale, N.S., 1910... ...	Schr.	57.3	17.8	7.0	35	Shelburne............	A. M. Banks, Halifax, N.S.
W. M. Richard...	126,598	Port Greville, N.S., 1910......	"	139.4	33.8	11.5	323	Parrsboro	A. D. Mills & Sons, Annopolis Boyal, N.S.
Westonneau	130,391	Grand Piles, Que., 1910	Barge	42.0	7.4	1.8	6	Montreal......... ...	E. G. Hurtubise, Grand Piles, Que.
William C. Smith.	126,818	Lunenburg, N.S., 1910..	Schr.	104.8	26.0	10.6	99	Lunenburg.....	W. C. Smith, M. O., Lunenburg, N S.

fering from trachoma. The Uranium Steamship Co., operates the Canadian Northern Steamships' s.s. Volturno, under charter.

With regard to the recent report appearing in the London, Eng., press, and copied to a considerable extent in Canada, that "the Grand Trunk Ry. of Canada are stated to have placed an order with a Glasgow ship builder for a fast and powerful steamer," we are officially advised that there is no foundation whatever for the report.

The White Star-Dominion Line's s.s. Laurentic, which recently arrived at Portland, Me., on her first western trip since the closing of the St. Lawrence, has been transferred to the Liverpool-New York route for the winter. The service between Great Britain and Portland, Me., via Halifax, N.S., is being continued by the s.s. Megantic and other of the company's vessels.

The Donaldson Line has awarded a contract for the building of another vessel, on the Clyde, Scotland, for its Canadian service. She will be 470 ft. long, 55 ft. wide, with accommodation for 300 cabin and 600 steerage passengers. She will be equipped with a wireless telegraph system, and all modern facilities for cold storage, and the rapid handling of cargo. It is expected that she will be ready for service by Jan 1912, when a weekly passenger service between Montreal and Glasgow will be inaugurated.

The Allan Line announces the purchase of the Holland-America Line's s.s. Statendam, which it has decided to rename Scotian, and which will replace the s.s. Pretorian on the Montreal-Glasgow route. The latter vessel will replace the Pomeranian on the London and Havre service. The Statendam was built at Belfast, Ireland, in 1898, and is equipped with two triple expansion engines, with cylinders 27½, 45½ and 75½ ins. diar., by 54 ins stroke, developing 1126 h.p., and driving twin screws. Her dimensions are, length, 515.3 ft., breadth, 59.8 ft., depth 23.8 ft.; tonnage, 10,491 gross, 6,701 register.

The Kosmos and Jebsen Steamship Cos. have announced their withdrawal from the British Columbia-Mexico service in connection with the Tehuantepec Ry., leaving the route clear for the Canadian Mexican Pacific Steamship Co., which was organized last year, and which has a Government subsidy for such service. This company is the successor of the Canadian Mexican Steamship Co., which operated the steamships Georgia and Lonsdale, under charter, on the route, for two years. Since the organization of the present company, with Capt. T. H. Worsnop as Manager, the s.s. Lonsdale has been purchased and the s.s. Henley has been chartered, both now being operated between Vancouver and Salina Cruz. Press reports state that the company is negotiating for the purchase of another vessel, owing to the increase in the traffic.

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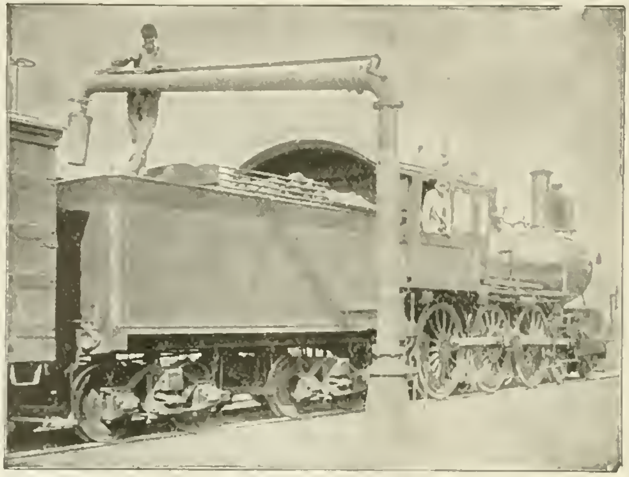
Maritime Provinces and Newfoundland.

Capt. D. McKinnon, a well known sailing captain, died at Halifax, N.S., recently aged 72.

The Department of Public Works will receive tenders to Jan. 4, for the building of an extension to the breakwater at Margaree harbor, N.S.

The Halifax Graving Dock Co. is reported to have decided to lengthen its dry dock by 50 ft., at an approximate cost of $400,000. This, it is stated, will enable the company to apply for an increased subsidy from the Government.

The s.s. Anticosti, which is being built at Sunderland, Eng., for the Dominion Steel Corporation charter, was launched



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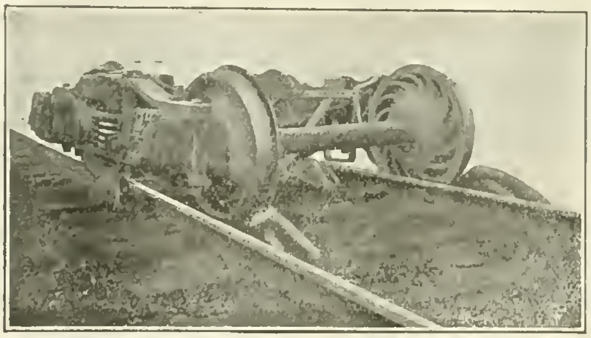

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Manufacturers of Re-Rolled Rails
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there recently. She has been specially designed for the steel trade, and is 389 ft. long by 52 ft. beam.

The St. John Steamship Co., recovered $120.30 from the Star Line Steamship Co., at St. John, N.B., Dec. 7, for breach of agreement and wharfage and dockage dues, and judgment was also entered for defendant on a counterclaim for $18.

The Dominion Government has placed the order for the construction of a steamboat for the lighthouse and buoy service in the St. Lawrence, at Collingwood, Ont. A full description of this vessel was given in our Nov., 1910, issue.

The Margaretville Steamship Co., has registered its steamship Margaretville, which was built at Margaretville, N.S., in 1910. Her dimensions are, length 93.3 ft., breadth 20.8 ft., depth 8.6 ft.; tonnage, 107 gross, 39 register She is equipped with engine of 19 n.h.p., driving a schew.

The Dartmouth, N.S. city council has decided to award the contract for the construction of a third ferry steamer, to Mackie and Baxter, Glasgow, Scotland, on either of two estimates, which the special committee may decide. The new vessel will be of the type, but on more up to date plans, of the ferry steamboat Chebucto. Larger propellers and a stronger shaft are to be used.

The Grand Falls Co. has been incorporated under the Dominion Companies Act, for the purpose of developing electric power at Grand Falls, N.B., to distribute power, and to carry on lumbering and other businesses in connection therewith, including the operation of steam and other vessels, or to hold shares in vessels or navigation companies. The capital is $1,200,000, and the offices at Grand Falls, N.B. The provisional directors are:—Sir Wm. C. Van Horne, H. S. Holt, Montreal; R. Proctor, Proctor, Vt.; G. F. Underwood, B. E. Kingman, New York City; J. Robinson, Millerton.

The Sydney, N.S., city council adopted a resolution, Dec. 9, to enter into an agreement with A. C. Ross, of Sydney, for the construction of a floating dry dock with a capacity for lifting vessels of at least 15,000 tons, at a cost of not less than $1,000,000; a ship repair and building shop and berth for man-of-war or merchant vessels up to 10,000 tons capacity, at a cost of not less than $750,000; a modern wrecking plant, at a minimum cost of $175,000. The city, on its part, agrees to assess the company on $100,000, exclusive of school and sewer rates for 20 years and supply water at 6c. per 1,000 gallons, and also to pay a bonus at the rate of 1½% on the cost, up to $1,500,000, including cost of site, each year for 20 years. The carrying out of the agreement is subject to the granting of a Government subsidy under the act granting aid in the construction of such works.

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Province of Quebec Marine.

The appeal in the name of W. J. Ray, against the judgment of the lower courts, that the agreement between the city of Quebec and the Levis Ferry Ltd., was drawn up according to the statute and the city bylaws, was heard during December.

The steamboat City of Toronto, plying on the Richelieu River, between Montreal and Chambly, which ran aground at Longue Pointe, towards the end of Nov., after being refloated was taken to the canal dry dock, where repairs will be undertaken during the winter.

Capt. H. St. G. Lindsay, Chief Examiner of Masters and Mates, recently made arrangements in Montreal for the establishment of a school of instruction there, and it is said that a room will be located for the purpose in the Technical School, now about completed.

A deputation from the Quebec Board of Trade waited on the Dominion Premier recently to urge that the dredging of the St. Charles River be undertaken at an early date, and that the Marine Department's Quebec depot be moved from the present site to the St. Charles River, and a wharf and new buildings erected there.

On the appeal of the Quebec and Levis Ferry Co., and W. J. Thompson, Manager of the Company, against the recent judgment condemning the company to a fine of $500, and W. J. Thompson to 48 hours imprisonment and a fine of $100, for contempt of court, the Judges of Appeal at Quebec, have decided that the fines must be paid, and the sentence of imprisonment has been quashed.

The Government dredge Rideau, which has been working on a channel through Sawlog Bay on the Rideau River, was taken off the work towards the end of Nov. for the season. When completed, the channel will reduce the distance between Poonahamalee locks and the Rideau ferry by about two miles. It is expected that the work will be finished early in the spring.

The Montreal Harbor Commissioners' programme for the winter includes the completion of negotiations for the construction of dry docks etc., the preparation and submission of plans for four additional sheds on the Tarte pier, and for the upper roadways and elevators on the upper floors of the permanent steel sheds, and the adjusting of some disputes with the city relating to the Elgin sewer, and police and fire protection at the wharf.

The annual trip to the island and outer ports of the Gulf of St. Lawrence, hitherto undertaken by the Government s.s. Montcalm, has, this winter been taken by the Government s.s. Montmagny. She sailed from Quebec, Dec. 9 with mails and supplies for Seven Islands, Clarke City, Ellis Bay, East Point, Anticosti, Harrington, and Magdalen Islands, and on completion of the trip, went to Halifax, where she was berthed for the winter.

The claim of the Canadian Electric Light Co., against the s.s. Crown of Aragon, for $10,000 for damages caused to its cable near Quebec, by the dragging of the vessel's anchor, was dismissed in the Quebec Admiralty Court, recently. The judgment declared that the company obtained permission to lay the cable at its own risk, and that the lowerering of the anchor was not only within the rights of the vessel, but in order to prevent a collision, it was a duty.

In reply to questions in the House of Commons, Dec. 5, relating to recent reports connected with the proposed dry dock at Levis, the Minister of Public Works stated that detailed drawings for the construction of a dry dock at Levis had been filed, but that the company's application for a subsidy was not, in accordance with the provisions of the statute, and it had been informed that the Government was ready, at any time, to enter into a contract with the company, under the terms of the Dry Dock Subsidy Act.

The Fraserville Navigation Co., which has been operating the steamboat Canada, on the Gaspe and Campbellton route under a contract with the Dominion Government, has gone into liquidation. In reply to questions in the House of Commons, Dec. 1, the Premier said the contract did not expire until 1912, and was for $15,000 a year for a full service. During 1909-10, there was deducted $2,125, and in the current year there had already been deducted for inefficient service $2,000. Complaints had been made as to the carrying out of the contract and the company had been notified that the conditions must be altered.

The Governor in Council has approved the Quebec Harbor Commissioners bylaw 109, in place of bylaw 100, which has been repealed. The new bylaw provides that the wintering tariff on vessels of every description shall be at the rate of ½c. a square foot, space to be measured by the registered measurements, where available, or by actual size. The wintering season will commence Dec. 1, each year, and will end, not

Lake Grain Shipments, 1910 Crop.

The following statement, prepared by F. E. Gibbs, Grain Inspector, Fort William, Ont., shows the bushels of grain shipped from the different elevators at Fort William and Port Arthur of the 1910 crop, from Sept. 1 to close of navigation, Dec. 6, 1910, with ports of destination. The last two figures in each column after the period, represent lbs.

	SCREENINGS.	WHEAT	OATS	BARLEY.	FLAX
CANADIAN PORTS					
Collingwood	....	603,241.10	....	....	....
Depot Harbor	....	460,000.00	317,465.10	....	....
Goderich	1,145.40	3,102,528.40	486,303.32	24,500.00	26,824.55
Hamilton	....	50,896.00	....	....	....
Kingston	....	4,104,913.40	890,545.33	128,281.41	27,473.51
Montreal	....	2,190,912.20	1,385,949.05	95,108.26	94,588.05
Midland	....	436,854.00	50,169.13	....	....
Meaford	....	380,000.00	....	....	....
Owen Sound	....	677,976.20	967,846.00	25,000.00	....
Prescott	....	27,878.20	....	....	10,443.32
Port Colborne	....	2,027,864.50	....	....	....
Point Edward	....	1,293,702.00	512,958.20	44,001.08	63,091.13
Port Stanley	....	99,693.20	30,360.00	....	....
Quebec	....	....	87,190.23	....	....
Tiffin	....	5,782,040.20	359,916.17	359,916.17	....
Thorold	....	229,339.20	....	....	....
Victoria Harbor	....	906,957.50	244,878.06	244,878.06	....
Walkerville	....	232,811.50	....	....	....
	1,145.40	22,607,610.00	5,334.673.23	406,802,37	302,421.44
FOREIGN PORTS					
Buffalo	....	13,374,667.30	429,324.28	455,667.47	1,744,686.33
Cleveland	....	....	....	....	80,000.00
Chicago	510,580.20	....	....	....	6,662.48
Duluth	75,883.10	....	....	....	....
Erie	....	251,885.00	....	....	....
Port Huron	....	612,595.40	....	....	22,835 32
	587,559.10	36,846,758.10	5,763,998.17	862,470.36	2,076,606.45
CANADIAN VESSELS	284,967.40	23,371,662.20	5,438,492,30	406,802.37	325,257.20
FOREIGN VESSELS	302,591.30	13,475,095.50	325,505.21	455,667.47	1,751 349.25
1910	587,559.10	36,846,758.10	5,763.998.17	862,470.36	2,076,606.45
1909	330,639.50	42,886,355.50	9,520,550.17	1,847,576.10	2,016,130.15

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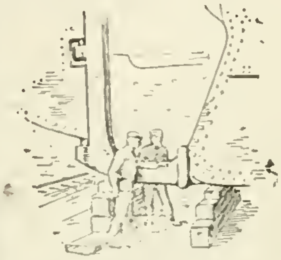

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NOTICE.—The Canadian Pacific Railway Company will apply to the Parliament of Canada, at its present session, for an Act authorizing it to construct the following lines of railway:—

1. From a point at or near Wilkie on the company's Pheasant Hills Branch in a southerly and southeasterly direction to a junction with the company's Moose Jaw Branch in Township 30, Range 16 or 17, west 3rd Meridian, Saskatchewan.

2. From a point at or near Kerr Robert on the company's Moose Jaw Branch in a northeasterly and easterly direction to a junction with the line described in paragraph 1 in Township 38 or 39, Range 19 or 20, west 3rd Meridian, Saskatchewan, and for other purposes.

W. R. BAKER,
Secretary.

Dated at Montreal, 1st December, 1910.
Andrew T. Thompson,
Ottawa Agent.

IMPERIAL BANK
OF CANADA

Capital Authorized	$10,000,000.00
Capital Subscribed	5,890,000.00
Capital Paid Up	5,550,000.00
Reserve Fund	5,550,000.00
HEAD OFFICE	TORONTO

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THE MALES CO.,
1508 First National Bank Bldg.
CINCINNATI, O.

NOTICE is hereby given that the Pacific Northern and Omineca Railway Company will apply to the Parliament of Canada, at the present session thereof, for an Act extending the time within which it may construct the lines of railway which it has been authorized to construct by chapter 90 of the Statutes of Canada, 1902, as amended by chapter 141 of the Statutes of Canada, 1906, and for other purposes.

W. H. BIGGAR,
Solicitor for applicants.

Dated at Montreal, this 26th day of November, A.D. 1910.

later than Apr. 30. Vessels berthing in the Louise dock, or other docks under the Commissioners' control, must have their positions assigned by the harbor master, and occupy the same at their own risk, and must not be cut out without consent in writing.

Revillon Bros., Ltd., is applying to the Dominion Parliament for re-incorporation under the name of Revillon Bros. Canada, Ltd., to carry on a general trading business.

La Compagnie Generale du Port de Chicoutimi has registered its steamboat Edward Alfred, which was built at Chicoutimi in 1910. She is a screw driven vessel with engine of 32 n.h.p. Her dimensions are, length 85.5 ft., breadth 21 ft., depth 7.5 ft.; tonnage, 139 gross, 51 register.

◆

Ontario and the Great Lakes.

C. Quackenbush, one of the oldest tug captains on the Welland Canal, died at Port Dalhousie, recently, aged 67. He had been engaged on tugs for 40 years.

During the past season, 2,656 vessel passages were recorded through the Welland canal. This is an increase of nearly 600 over the previous year, which was a record.

We are officially advised that there is nothing whatever in the report that the Merchants' Mutual Line will operate passenger vessels, between the head of the lakes and Montreal, next season.

The amount of grain received at Kingston, during the 1910 season was 14,953,418 bush., of which, 13,889,560 bush. were for Montreal. This is stated to be a season's record for the port.

Application is being made to the Ontario Legislature for confirmation of the city of Kingston's bylaw, passed Mar. 28, 1910, to partially exempt the Kingston Shipbuilding Co.'s property from taxation.

The Northern Navigation Co.'s s.s. Harmonic, during the past season, made 31 trips to the head of the lakes, and completed 41,200 miles, which is claimed to be a record.

The Toronto Ferry Co.'s tender for the lease of the ferry wharves, for the year, at $5,050, and the Turbine Steamship Co.'s tender for its wharf, at $2,000, have been accepted by the Toronto board of control.

The Montreal city council recently passed a resolution in favor of the proposed Georgian Bay canal and calling upon Parliament to carry out "this essentially national enterprise with the shortest possible delay."

The Hamilton, Ont., city council has petitioned the Minister of Public Works to widen and deepen the canal at the beach there, to allow of larger vessels passing through, thus cheapening rates and benefitting the city generally.

N. L. Martin & Co., as assignees of the Montreal River Transportation Co., in liquidation, will receive tenders to Jan. 10, for the assets of the company, consisting of five motor boats, one scow, one small boat, a quantity of lumber and supplies.

W. E. Bishop, General Manager, and E. Callaghan, Local Manager, Hamilton, of the Hamilton Steamboat Co., were each presented with a diamond and amethyst tie pin, recently, by the Toronto Police Amateur Athletic Association, in recognition of their support.

Press reports state that on the reopening of navigation, some changes will take place in the control of a number of docks, wharves, etc., whereby these will be transferred from the jurisdiction of the Public Works Department to that of the Marine Department.

The steam tug Despatch was towed into Port Bruce recently by the ferry steamboat Marquette and Bessemer No. 2, with 4 ft. of water in her hold. The tug sprang a leak, and the crew were about to abandon the boat, when the ferry sighted her and took her in tow.

The plans for the construction of a dry dock and shipbuilding plant at Owen Sound will shortly be submitted to the Government for approval, in connection with the application for a subsidy under the act granting aid for the construction of such public works.

Press reports from Port Arthur, state that the Canadian Northern Ry., intends spending about $300,000 in the extension of the coal handling plant there, next summer. It is said that additional unloading machinery, derricks and yard room will be provided.

Deputations connected with the various shipping interests concerned, waited on the Dominion Premier Dec. 12 and 13, to state their views on the construction of the proposed Georgian Bay canal and the enlarging of the Welland canal.

The steam tug Jean, owned in Amherstburg, was burnt there, Dec. 11. She was built at Buffalo, N.Y., in 1889, and was a screw driven vessel with engine of 4 n.h.p. Her dimensions were, length, 49 ft.; breadth, 12.4 ft.; depth, 4.4 ft.; tonnage, 21 gross, 14 register.

The Kingston Shipping Co., Kingston, has transferred its s.s. Prince Rupert from the British to the Canadian register. She was built at Dumbarton, Scotland, in 1908, and is screw driven, with engine of 170 n.h.p. Her dimensions are, length 249 ft., breadth 43 ft., depth 19.5 ft.; tonnage, 1908 gross, 1172 register.

The Great Lakes and St. Lawrence Transportation Co.'s steamboat John Sharples, which ran ashore at Gull Island shoals, near Cape Vincent, Lake Ontario, Dec. 8, was reported to be full of water and in bad condition, Dec. 13, and attempts at salving her were abandoned.

The Inland Lines steamboat Emperor was launched at Collingwood, Dec. 17. Her dimensions are: length 525 ft., beam 56 ft., depth, molded, 31 ft. She has been built of steel, with side ballast tanks and double bottom, and has been designed on the arch and web system of construction, with 30 cargo hatches.

The International Transit Co., Sault Ste. Marie, has recently purchased in the U.S., the steamboat Clansman, which it has registered in Canada, and re-named Bawating. The vessel was built in Detroit, Mich., in 1875, and is screw driven, with engine of 28 n.h.p. Her dimensions are, length, 110 ft., breadth 29 ft., depth 11.4 ft.; tonnage, 246 gross, 167 register.

A deputation from Kingston, headed by Hon. W. Harty, waited on the Minister of Railways and Canals, Dec. 8, to urge the building of dams along the Rideau Lakes to hold back the water for the dry season, for the betterment of navigation, and to ensure its perman-

SAULT STE. MARIE CANALS TRAFFIC.

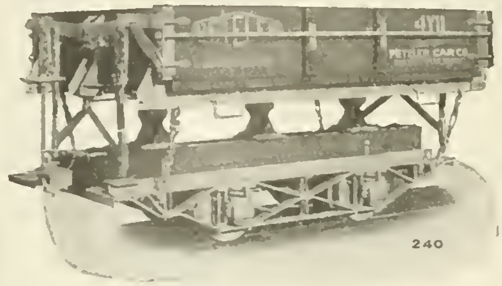
The following commerce passed through the Sault Ste. Marie Canals for the season 1910:

Articles.			Canadian Canal	U. S. Canal	Total
Copper	Eastbound	Net tons	26,632	121,438	148,070
Grain	"	Bushels	24,300,195	14,943,137	39,243,332
Building stone	"	Net tons	300	9,335	9,635
Flour	"	Barrels	2,178,933	4,856,746	7,575,679
Iron ore	"	Net tons	28,525,024	13,075,362	41,600,386
Pig iron	"	"	8,650	40,340	48,990
Lumber	"	M. ft. B.M.	44,494	558,607	603,101
Silver ore	"	Net tons	....	....	....
Wheat	"	Bushels	68,754,925	17,505,949	86,259,974
General merchandise	"	Net tons	76,950	96,337	173,287
Passengers	"	Number	13,410	18,857	32,267
Coal, hard	Westbound	Net tons	549,311	1,109,533	1,658,844
Coal, soft	"	"	3,535,811	8,319,072	11,854,883
Flour	"	Barrels	1,100	10	1,110
Grain	"	Bushels	....	2,153	2,153
Manufactured iron	"	Net tons	169,068	226,611	395,679
Iron ore	"	"	3,248	....	3,248
Salt	"	Barrels	138,419	390,191	528,610
General merchandise	"	Net tons	627,053	611,209	1,238,262
Passengers	"	Number	19,987	14,679	34,666
Vessel passages		Number	7,972	12,927	20,899
Registered tonnage		Net	23,349,137	26,506,986	49,856,123
Freight—Eastbound		Net tons	31,531,036	15,602,673	47,133,709
" —Westbound		"	4,904,521	10,324,988	15,229,509
Total freight		"	36,435,557	25,927,661	62,863,218

COMPARATIVE STATEMENT FOR THE SEASONS OF 19 9 AND 1910.

Items.		Total traffic for	
		Season 1910.	Season 1909.
Vessels:			
Steamers	Number	17,674	16,463
Sailing	"	1,890	1,787
Unregistered	"	1,335	954
Total	"	20,899	19,204
Lockages	"	14,569	13,571
Tonnage, Registered	Net	49,856,123	46,751,717
" Freight	"	62,363,218	57,895,149
Passengers	Number	66,933	59,948
Coal, hard	Net Tons	1,658,844	1,412,387
Coal, soft	"	11,854,883	8,527,639
Flour	Barrels	7,576,789	7,094,175
Wheat	Bushels	86,259,974	113,253,561
Grain	"	39,245,485	46,519,451
Manufactured and Pig Iron	Net Tons	444,669	522,281
Salt	Barrels	528,610	651,091
Copper	Net Tons	148,070	127,212
Iron Ore	"	41,603,634	40,014,978
Lumber	M. ft. B.M.	603,101	552,380
Silver Ore	Net Tons	.. ..	....
Building Stone	"	9,635	1,784
General Merchandise	"	1,411,549	1,140,344

The U. S. canal was opened May 5, and closed Dec. 14, 1910; season 224, days.
The Canadian canal was opened Apr. 12, and closed Dec. 15, 1910; season. 248 days.



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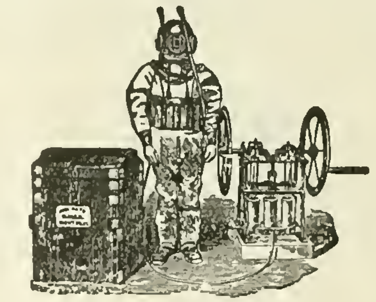

JOHN DATE
MANUFACTURER OF
DIVING APPARATUS
FOR SALE OR HIRE
Brass Founder & Coppersmith
152 Craig St. West, Montreal

Dividend Notice
Niagara Navigation Co., Ltd.

Notice is hereby given that a dividend of four per cent. (being at the rate of eight per cent. for the year) has been declared upon the Capital Stock of this Company, and the same will be payable on the 3rd of January, 1911. The transfer books will be closed from the 17th December to 31st December, 1910, both days inclusive. The annual meeting of the shareholders will be held on Tuesday, the 10th of January, 1911, at 12 noon, in the Board Room, Traders Bank Building, Toronto.

By order of the Board.

B. W. FOLGER,
General Manager.

Toronto, Nov. 28th, 1910.

Railway Construction.

Tenders will be received up to noon, January 2nd, 1911, for the construction of the road-bed and structures of the following sections of the Manitoulin and North Shore Railway:—

Crean Hill, mile 22.7, West of Sudbury, to connection with present line at Espanola.

Espanola South to a point at or near Mile 61.

Plans, Profiles and Specifications may be seen at the Office of the Chief Engineer, Sault Ste. Marie, Ontario, at the office of the Railway and Marine World, Toronto, or at the Offices of the "Canadian Engineer," at Montreal, Toronto or Winnipeg.

All tenders to be addressed to R. S. McCormick, Chief Engineer, Manitoulin and North Shore Railway, Sault Ste. Marie, Ontario.

The lowest or any tender not necessarily accepted.

Patent Rights for Sale.

PATENT ACT.—Take notice, that the undersigned are prepared to supply, at a reasonable price, sheet metal dumping cars for railroad contractors' use, described in Canadian Patent No. 116,297, or to grant anyone desiring to use the same a license to have the same manufactured for him at a manufacturing establishment in the Dominion of Canada. They are also prepared to receive offers for licenses to manufacture and sell under the same. Ridout and Maybee, Manning Chambers, Queen St. West, Toronto, attorneys for the Goodwin Car Company.

CRESOL CALCIUM.—Patent no. 115,933 for the preservation of Railroad Ties, Telephone and Telegraph Poles, Wood Paving Blocks, etc. For terms of royalty, etc., apply to Blagden, Waugh & Co., 4 Lloyds Avenue, London, E.C., England.

ence from the beginning to the end of the season.

The steam tug Saucy Jim, owned in Collingwood, was burned to the water's edge, about the end of Nov., 1910, at Christian Islands. She was built at Meaford in 1887, and was screw driven with engine of 16 n.h.p. Her dimensions were: length, 84 ft.; breadth, 16.6 ft.; depth 8 ft.; tonnage, 93 gross, 63 register. She was valued at $10,000.

The steamboat Alaska, owned by W. J. Pulling & Co., of Windsor, Ont., was destroyed by fire at Tobermory, at the end of Nov., where she was sheltering during a storm. She was built at Detroit, Mich., in 1878, and was screw driven with engine of 8 n.h.p. Her dimensions were: length, 165.2 ft.; breadth, 29 ft.; depth, 10.6 ft.; tonnage, 348 gross, 173 register.

The steamboat Winnanna, which was burned to the water's edge at Tobermory, Oct. 19, 1909, and subsequently raised and repaired, has been re-registered at Owen Sound, and her name changed, by order-in-council to Keenan. She was built at Midland, in 1907, and is screw driven, with engine of 75 n.h.p. Her dimensions are, length, 91.5: breadth 20.2; depth, 10.3; tonnage, 199 gross, 125 register.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above tidewater, for Nov., 1910, as follows: Superior, 601.69; Michigan and Huron, 579.83; Erie, 571.40; Ontario, 245.15. As compared with the average Nov. levels for the past 10 years, Superior was 1.19 ft. below: Michigan and Huron, 0.70 ft. below: Erie, 0.44 ft below, and Ontario 0.34 ft. below. An average fall of 0.2 ft. was anticipated during Dec.

The cribs for the extension of the dock at Sault Ste. Marie, for which $10,000 has been included in the estimates for the current year have been laid, and the work will be completed in the spring. The Government is being asked to undertake further extensions there, local shippers being of the opinion that the new western extension should be the head of a new western wing 250 ft. long, running parallel with the present dock, and that the basin which would be then enclosed, should be filled in.

The Wolfe Island township council decided, Dec. 9, to enlarge the carrying capacity of its steamboat Wolfe Islander, by lengthening her by 15 ft., and adding false sides. Electric lighting equipment, with search light, will also be added, the estimated expenditure being $7,000. The vessel, which was formerly known as Tom Fawcett, was built at Toronto in 1904, and is a paddle wheel steamer, with engine of 28 n.h.p. Her dimensions now are, length 118.6 ft., breadth 17.7 ft., depth, 6.8 ft.; tonnage, 224 gross, 98 register. The receipts of the ferry service for the season from Mar to Nov. 1910, were $9,377.35.

A deputation representing various municipal and marine interests, between Ottawa and Kingston, waited on the Minister of Railways and Canals, Dec. 8, to protest against the C.P.R. proposal to close a part of the Rideau canal in order to effect a new entrance to Ottawa. The deputation also asked that the canal be made with an 8 ft. draught. The Minister in reply, pointed out that the C.P.R. had not asked the Government to close the canal outlet, and without committing the Government, he said he would hesitate before giving his consent to such a proposal. He promised that the Government engineers would report as to the desirability of deepening the canal as suggested.

The bill to amend the Canada Shipping Act, which was dropped after being read a second time in the House of Commons, last session, was re-introduced by Mr. Edwards and given its first reading Dec. 1. The bill provides for the insertion of the word "Ontario" after the word "Quebec" in line two, par. 2 of par. c., subsec. one, sec. 477, chap. 113, of the Revised Statutes of Canada, 1906. The change proposed is in accordance with the wishes of the Dominion Marine Association, which represents practically all the vessels on the Great Lakes, and is intended to place the province of Ontario on a parity with the other provinces in respect of pilotage dues.

The Toronto city council special committee on water front improvements, received representations from the Board of Trade, Canadian Manufacturers' Association and Guild of Civic Art, early in Dec., relating to the proposed alteration in the control of the Toronto water front. It had previously been proposed to apply to Parliament to recognize the present commission, to enlarge its powers, and to place the whole of the water front under its control. After discussing the matter, the committee agreed to report to the council, that the proposed commission should consist of three members, appointed by the city council, and that the taxpayers be asked to vote, Jan. 1, whether they approved the scheme, or not.

The Inland Lines steamboat Dunelm, with a cargo of grain consigned to J. Richardson and Son, Kingston, went ashore at Isle Royale, Dec. 7, and, on account of the exposed position, and the state of the weather, all attempts to save either the cargo or the vessel have been given up, and she was abandoned to the underwriters, Dec. 14. She was built in Sunderland, Eng., in 1907, and was a screw driven vessel, with engine of 230 n.h.p. Her dimensions were, length 250 ft., breadth 43.2 ft., depth 23.5 ft.; tonnage, 2,319 gross, 1,481 register. She was one of the vessels formerly owned by R. O. and A. B. Mackay, Hamilton, who formed the Inland Navigation Co., which was absorbed last year by the Inland Lines, Ltd., controlled by Jas. Playfair, Midland. She was later in the month floated and taken to Port Arthur, for examination.

The new U.S. Lock at Sault Ste. Marie is progressing, and it is expected that the excavation for the lock pit will be completed early this year. The contract for the concrete will be let during the winter and work on this will be commenced in the spring. The MacArthur Bros. Co. has the contract for the western section of the approach canal and John Marsch is the contractor for the lock excavation. The work is under the direction of Col. C. McD. Townsend, U.S. Engineers, and L. C. Sabin is Assistant Engineer. This new lock (known as the Davis lock) will be 1,350 ft. long between the gates, 80 ft. wide and 24½ ft. deep below the level of extreme low water. It will be parallel with and adjacent to the two existing locks: the Weltzel lock (1881), 515 by 80 ft., with a depth of 16 ft., and the Poe lock, (1895), 800 by 100 ft., with a depth of 21 ft.

At a recent meeting of the Dominion Marine Association, a protest was made against the closing of the Ottawa end of the Rideau Canal, and a deputation was appointed to interview the Government on the matter. Aids to navigation were recommended, as follows: a light at the end of Indian Island: lighting and improvement of the Murray canal, improvement of the channel at Saltpoint, and it was decided to protest against the removal of the light from the False Ducks. Opposition will also be made to the application of the Canadian Light & Power Co., to take water from Coteau and Cedar Rapids. The Association also decided to ask the Department of Railways and Canals to provide special men to take lines from vessels entering the St. Lawrence canals, in order to prevent accidents to vessels and crews, and the Department of Marine will be asked to erect range lights near Baker's Point to improve the channel to Kingston Harbor. Consideration was also given to the question of improvements required at the entrance to the Soulanges canal at Coteau.

The contract for the construction of a steamboat for the Richelieu and Ontario Navigation Co.'s Saguenay line, has been placed in Glasgow, Scotland, by C. J. Smith, General Manager, who has recently returned from Great Britain. She will be a twin screw vessel with four cylinder triple expansion engines, supplied with steam by Scotch boilers, equipped with forced draught, and capable of steaming at 15¾ knots an hour. Her dimensions will be as follows, length over all from forward side of stem to after side of wale at main deck, 282½ ft.; length over stem and stern posts at main deck, 275 ft.; beam molded on frame, subject to change, 40 ft.; breadth of beam extreme over wales, 57ft. 10 ins.; breadth of beam at 10 ft. waterline, 39 ft.: depth of hull molded, at main deck, 15 ft. 10 ins. The dining room will be situated on the main deck, aft, with seating capacity for 100. The staterooms will all be arranged as outside rooms, with running water in each as in the Company's steamboats Rochester and Rapids Prince. There will be 12 parlor rooms with baths attached. The interior finish of the entrance hall will be panelled mahogany, the dining room, panelled in mahogany, oak or white enamel, cabins on promenade and gallery decks, in white pine or cypress and decoratively painted, cabins on hurricane deck, panelled in quartered oak, toilet rooms and bar room in hardwood, and the pilot house in quartered oak, while the floors will be laid with interlocking rubber tiling. The contract calls for the vessel to be delivered in Quebec by June.

Manitoba, Saskatchewan and Alberta.

The Prince Albert, Sask., city council is arranging for the construction of a dam and power canal, on the Saskatchewan River, near La Colle Falls, and is discussing a proposition to submit the matter to the Dominion Government, with a view to the joint carrying out of the work in connection with the proposed undertaking of the Government to establish a navigable waterway between Winnipeg and Edmonton. It is stated that the Government may be asked to pay half the cost of the dam and two-thirds of the cost of the canal.

B.C. and Pacific Coast Marine.

The C.P.R. is making arrangements to convert most of its Pacific coast fleet, during the winter months, into oil burners.

The C.P.R. s.s. Charmer is being thoroughly overhauled and will be partially re-built, during the winter and new boilers, which have been ordered, will be installed in the spring.

D. E. Brown and Macaulay, Ltd., is suing the Canadian Klondyke Mining Co. of Windsor, Ont., for $4,376.17, for marine insurance, scow hire, fees as forwarding agents, etc.

The C.P.R. s.s. Princess May is the first of the company's vessels to be converted into an oil burner. The other vessels of the fleet will be similarly altered as opportunity occurs.

The deal, whereby the Pacific Whaling Co.'s property has been transferred to the Canadian North Pacific Fisheries, Ltd., is said to have been consummated

J. S. COFFIN, President SAMUEL G. ALLEN, Vice-President C. L. WINEY, Sec. & Treas.

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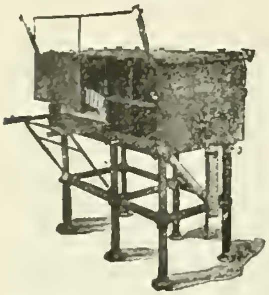

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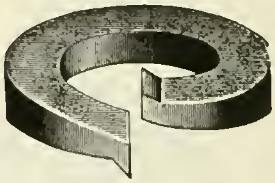

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recently by the paying over by the latter of a cheque for $1,000,000.

The Grand Trunk Pacific Dock Co.'s dock and buildings at Seattle, Wash., recently completed, were officially opened for business, Dec. 3. An illustration and description of the property were published in our June, 1910 issue.

The North Vancouver city council decided Dec. 6, to submit a bylaw to the ratepayers, providing for the purchase of $80,000 stock in the North Vancouver Ferry Co., at par, the proceeds to be used in the completion of betterment works, now under way.

The report, recently current in Vancouver, that the G.T.P. Steamship Co.'s steamships Prince Rupert and Prince George will be converted into oil burners has been denied by local officials of the company who stated that the present system is quite satisfactory.

Press reports from Vancouver, state that it is probable that the G.T.P.R., will dismantle a number of old stern wheel steamboats on the Skeena River and transfer the machinery, boilers, etc., to Soda Creek or Quesnel, for use in the rebuilding of steamboats for use on the Fraser and Nechaco Rivers.

The Gilford Fish Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of $150,000, to take over the Viner Fish Curing Co., Ltd.; to carry on a general fishing, curing and dealing business, and in connection therewith to own and operate steam and other vessels.

The Vancouver Springs and Indian River Park Co. is reported to have placed orders for the building of two passenger steamboats, one costing about $50,000 and the other about $12,000. The larger vessel will be arranged as an oil burner, and will be 123 ft. long, with a speed of 17 knots an hour, and the other, will be 80 ft. long.

The Queen Charlotte Islands Collieries Ltd., has been incorporated under the B.C. Companies Act, with a capital of $1,000,000, to carry on a general coal mining and dealing business, and in connection therewith to build, own and operate tramways, wharves, piers, steam and other vessels, and to act as carriers by land and water.

R, Curnew, New Westminster, owner of the steam tug Sendai, has sold his vessel to Alberni parties, for towing purposes on the coast. The Sendai was built at Vancouver in 1903, and is a screw driven vessel, with engine of 5 n.h.p. Her dimensions are length 37 ft.; breadth 9.8 ft.; depth 4.3; tonnage, 14 gross, 10 register.

The British survey ship Egeria, hav-

The Purchasing Agents' Guide

To the Manufacturers of and Dealers in Steam and Electric Railway, Marine, Grain Elevator, Express, Telegraph, Telephone and Contractors' Supplies, &c.

Accumulators, Electric
Tate Accumulator Co. of Canada, Toronto

Aerated Waters
E. L. Drewry ....Winnipeg.

Air Brakes and Fittings
Allis-Chalmers-Bullock Ltd. ....Montreal.
Canadian Westinghouse Co. Hamilton, Ont.

Ales
E. L. Drewry ....Winnipeg.

Alloys
American Vanadium Co....Pittsburg, Pa.

Angle Bars
Hamilton Steel & Iron Co..Hamilton, Ont.
Montreal Rolling Mills Co.......Montreal.
Nova Scotia S. & C. Co., New Glasgow, N.S.

Anti Rail Creepers
The Holden Co., Ltd............Montreal.

Automobiles
Preston Car & Coach Co...Preston, Ont.

Axes
James Smart Mfg. Co.....Brockville, Ont.

Axles
Canadian Car & Foundry Co....Montreal.
Hamilton S. & I. Co., Ltd., Hamilton, Ont.
James Hutton & Co. ....Montreal.
Nova Scotia S. & C. Co., New Glasgow, N.S.
Jas. W. Pyke & Co.............Montreal.

Babbit Metal
Tallman Brass & Metal Co., Hamilton, Ont.

Beacons
International Marine Signal Co....Ottawa.

Bearings, Side
Canadian Car & Foundry Co....Montreal.
Chicago Railway Equipment Co..Chicago.

Blankets and Bedding
The Hudson's Bay Co. ....

Boilers
Babcock & Wilcox, Ltd.........Montreal.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Boilers, Portable
Babcock & Wilcox, Ltd.........Montreal.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Boilers, Stationary and Marine
Babcock & Wilcox, Ltd.........Montreal.
John Inglis Co., Ltd. ....Toronto.
I. Matheson & Co.....New Glasgow, N.S.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Boiler Staybolt Iron or Steel Bars
Falls Hollow Staybolt Co..Cuyahoga Falls.

Boilers, Steam
Babcock & Wilcox, Ltd.........Montreal.
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Boilers, Water Tube
Babcock & Wilcox, Ltd.........Montreal.
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Bolsters
Canadian Car & Foundry Co....Montreal.
Canadian Ry. Equipment Co., Welland, Ont.

Bolts, Bridge
Montreal Rolling Mills Co.......Montreal.

Bolts, Track
Montreal Rolling Mills Co.......Montreal.
Nova Scotia S. & C. Co., New Glasgow, N.S.

Borers, Car Wheel
John Bertram & Sons Co....Dundas, Ont.

Braces, Cross Arm
Montreal Rolling Mills Co.......Montreal.

Brake Beams
Canadian Car & Foundry Co....Montreal.
Chicago Railway Equipment Co..Chicago.

Brake Shoes
Am. Brake Shoe & F'dry Co., Mahwah, N.J.
Canada Iron Corporation, Ltd..Montreal.
The Holden Co., Ltd............Montreal.

Brake Shoes, Locomotive Driver
Am. Brake Shoe & F'dry Co., Mahwah, N.J.
Canada Iron Corporation, Ltd..Montreal.
Railway Materials Co. ....New York.

Brass and Copper Cloth
The B. Greening Wire Co..Hamilton, Ont.

Brasses, Car
T. McAvity & Sons ....St. John, N.B.

Bridge Numbers
Acton Burrows, Limited ....Toronto.

Bridges
Canadian Bridge Co.....Walkerville, Ont.
Dominion Bridge Co.............Montreal.

Bronze
American Vanadium Co....Pittsburg, Pa.

Buckets, Coal, Ore and Concrete
M. Beatty & Sons, Ltd....Welland, Ont.
Brown Hoisting Machinery Co., Cleveland.
Williams & Wilson, Ltd ....Montreal.

Buildings, Steel
Canadian Bridge Co.....Walkerville, Ont.
Dominion Bridge Co.............Montreal.

Bumping Posts
The Holden Co., Ltd............Montreal.
McCord & Co. ....Chicago, Ill.

Buoy Lighting
Safety Car Heat. & Light. Co..New York.

Buoys
International Marine Signal Co....Ottawa.

Cables, Electric and Feeder
Chapman & Walker, Ltd........Toronto.
E. F. Phillips Electrical Works.Montreal.
The Wire and Cable Co..........Montreal.

Car Furnishings
Guilford S. Wood..............Chicago, Ill.

Car Loaders, Box
Mussens, Ltd. ....Montreal.

Car Movers
F. H. Hopkins & Co...............Montreal.
Mussens, Ltd. ....Montreal.

Cars
Crossen Car Mfg. Co........Cobourg, Ont.
Canadian Car & Foundry Co....Montreal.
J. T. Gardner ....Chicago, Ill.
Hart-Otis Car Co., Ltd.........Montreal.
The Males Co., ... Cincinnati, O.
Ottawa Car Co., Ltd..............Ottawa.
Pay-As-You-Enter Car Co....New York.
Preston Car and Coach Co., Ltd..Preston.
Russel Wheel & Fdry Co...Detroit, Mich.
Silliker Car Co., Ltd........Halifax, N.S.

Cars, Logging
Peteler Car Co. ....Minneapolis, Minn.
Russel Wheel & Fdry Co...Detroit, Mich.

Castings
Edgar Allen & Co., Ltd. .... Montreal.
American Vanadium Co....Pittsburg, Pa.
Canadian Car & Foundry Co....Montreal.
Crossen Car Mfg. Co........Cobourg, Ont.
John Inglis Co., Ltd. ....Toronto.
Lumen Bearing Co.....West Toronto, Ont.
I. Matheson & Co......New Glasgow, N.S.
Russel Wheel & Fdry Co...Detroit, Mich.
Standard Steel Works Co..Philadelphia, Pa.

Castings, Brass
Canadian Bronze Co. ....Montreal.
Canada Iron Corporation, Ltd...Montreal.
Kerr Engine Co. ....Walkerville, Ont.
Lumen Bearing Co.....West Toronto, Ont.
I. Matheson & Co......New Glasgow, N.S.
Tallman Brass & Metal Co., Ltd.Hamilton.

Castings, Car
Edgar Allen & Co., Ltd. .... Montreal.
Am. Brake Shoe & F'dry Co., Mahwah, N.J.
Canada Iron Corporation, Ltd...Montreal.
Russel Wheel & Fdry.. Co..Detroit, Mich.

Castings, Iron
Allis-Chalmers-Bullock Ltd. ....Montreal.
Canada Iron Corporation, Ltd...Montreal.
Kerr Engine Co..........Walkerville, Ont.
Russel Wheel & Fdry.. Co..Detroit, Mich.

Castings, Iron and Steel
Edgar Allen & Co., Ltd. .... Montreal.
Am. Brake Shoe & F'dry Co., Mahwah, N.J.

Castings, Malleable
Galt Malleable Iron Co.........Galt, Ont.
Taylor & Arnold ....Montreal.

Castings, Manganese Steel
Edgar Allen & Co., Ltd. .... Montreal.
Lumen Bearing Co.....West Toronto, Ont.
Montreal Steel Works, Ltd......Montreal.

Castings, Steel
Edgar Allen & Co., Ltd. .... Montreal.
American Vanadium Co....Pittsburg, Pa.
Canada Iron Corporation, Ltd..Montreal.
W. Kennedy & Sons, Ltd., Owen So'd, Ont.
Montreal Steel Works ....Montreal.

Chains
B. J. Coghlin & Co..............Montreal.

Chisels for Pneumatic Chipping Hammers
Edgar Allen & Co., Ltd. .... Montreal.
Cleveland Punch & Shear Wks., Cleveland.

Closets, Car
Duner Co. ....Chicago, Ill.

Coal
Nova Scotia S. & C. Co., New Glasgow, N.S.

Compressors, Air
Allis-Chalmers-Bullock Ltd. ....Montreal.
The American Well Works...Aurora, Ill.
Canadian Rand Co. ....Montreal.
The Holden Co., Ltd............Montreal.
John Inglis Co., Ltd. ....Toronto.
Vandeleur & Nichols ....Toronto.

Concrete Mixers and Rock Crushers
Edgar Allen & Co., Ltd. .... Montreal.
F. H. Hopkins & Co............Montreal.
Mussens, Limited ....Montreal.

Contractors' Supplies
F. H. Hopkins & Co............Montreal.
Rice Lewis & Son.................Toronto.
Peteler Car Co. ......Minneapolis, Minn.
Russel Wheel & Fdry.. Co..Detroit, Mich.
Williams & Wilson, Ltd .... Montreal.

Conveyors, Coal and Ash
Babcock & Wilcox, Ltd.........Montreal.
Williams & Wilson, Ltd ....Montreal.

Copying Presses
James Smart Mfg. Co.....Brockville, Ont

ing completed her work of surveying B.C. waters, all of which will now be undertaken by the Dominion Government's survey steamship Lillooet, has paid off her crew, and has been berthed for the winter. It is stated that she will probably be offered for sale. and that she may be purchased by the Government for use as a training ship.

Preparations have been commenced near Vancouver. for the dredging, next summer, of the First Narrows. The Marine Department's steam tug Newington, recently removed the beacon and installed a mechanical fog bell.

The Canadian North Pacific Fisheries, Ltd., registered under the Dominion Companies Act, with a capital of $2,500,000, and office at Toronto has been licensed to carry on its business in British Columbia, with Dr. L. Rissmuller, Vancouver, as its attorney

The s.s. Henriette, formerly owned by Mackenzie Bros., and during the past season, operated under charter by the G.T.P. Steamship Co., has been chartered by the Canadian Pacific Whaling Co., to make trips to Naden harbor, Virago Sound, at the north of Queen Charlotte Islands, conveying men and material for the construction of a new whaling station.

The Vancouver city council received tenders, Dec. 30, for a launch to be used to convey patients to and from the Isolation Hospital, opposite Barnet. The launch must be complete, and equipped with engine of not less than 40 n.h.p., which may be driven by either steam or gasolene. The approximate dimensions quoted are: length 50 ft., beam 12 ft., draught 3½ft.

The Standard Fish and Fertilizer Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of $1.000,000, to take over the assets and business of the Pacific Coast Fisheries, Ltd.; to conduct a general fisheries business, and in connection therewith to own and operate steam and other vessels of all descriptions, wharves, docks, warehouses and fishing stations.

The Fort George Timber and Transportation Co., Ltd., has been incorporated under the B. C. Companies Act, with a capital of $200,000, to take over as a going concern the business of the Fort George Lumber and Navigation Co., Ltd., with its assets and liabilities, and in connection therewith to own and operate steam and other vessels, wharves, docks, piers, etc., and to carry on a general shipowning, navigation, stevedoring and carrying business.

The British Columbia Shipping Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of $35,000. and office at Victoria, to build own and operate steam and other vessels, and to carry on a general shipping and navigation business. Press reports state that a vessel will shortly be ordered, 120 ft. long, with beam of 24 ft. and draught of 9 ft., on 340 tons displacement. The engines are to have about 240 n.h.p. to develop 10 knots an hour.

The vessel which the C.P.R. has ordered for its Pacific coast service, which was mentioned in our Dec., 1910, issue will be practically a duplicate of the recently arrived s.s. Princess Adelaide. Her dimensions will be:—Length between perpendiculars, 290 ft.; beam, 46 ft.; depth of hold, 17 ft., and she will have a speed of 16 knots an hour. On her arrival on the coast it is proposed to establish a service between Vancouver and Victoria three times a day, leaving each city about 10 a.m., 3 p.m., and 11.30 p.m.

The specifications for the building and laying out of the Department of Marine's lighthouse and buoy depot at Prince Rupert, tenders for which will be received to Jan. 3, include the erection of a buoy shed and machine shop, power house and reinforced concrete chimney, carbide store, storehouse, offices, dwellings, etc.; the installation of water and drainage systems, the storage of machinery delivered by the Department, and the erection of a travelling crane of 20 tons capacity. The depot will be located on the south shore of Casey Cove, on the west side of Prince Rupert harbor, and 2½ miles south of the wharf. The wharf, which it is proposed to build, will be 405 ft. long by 40 ft. wide, and 55 ft. wide for about 105 ft. of the length. It will consist of concrete piles, which will be carried up as columns, braced with horizontal and diagonal members, the tops of the columns being finished off at 126.93 ft. The contractor will be called upon to commence work within 30 days after the signing of the agreement, and the work must be completed and ready for occupation on or before Dec. 1.

◆

During Sept. and Oct., 1910, 10 employes were killed and 11 injured in the course of their work in connection with the navigation of Canadian waters. Of the fatalities, five were due to drowning, three to falling material and two to falls; while of the other accidents, four were due to machinery, three each to falls and to falling material, and one to being scalded.

The Steamboat Inspection Board reports to the Marine Department, that there were 1,978 steam vessels, of 440,819 tonnage, known to the inspectors, on the Dominion register, and 162 steam vesels of 238,227 tonnage, not on the Dominion register, inspected. during the year ended Mar. 31, 1910. The amount collected in fees from the Dominion registered vessels, was $6,469.60. Thirty-two casualties were reported during the year, and penalties were enforced in two cases of passenger overcrowding.

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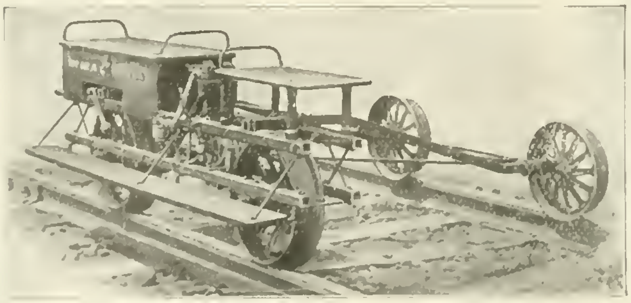

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Couplers, Car and Locomotive
Canadian Car & Foundry Co...Montreal.
McConway & Torley Co....Pittsburg, Pa.
Montreal Steel Works, Ltd.....Montreal.
Taylor & Arnold ....Montreal.

Couplers, Steam
Consolidated Car Heating Co., Albany, N.Y

Cranes
Brown Hoisting Machinery Co..Cleveland.
Northern Engineering Wks..Detroit, Mich.
Williams & Wilson, Ltd ....Montreal.

Cranes, Electric
Babcock & Wilcox ....Montreal.
Dominion Bridge Co. ....Montreal.
Mussens, Limited ....Montreal.
Northern Engineering Wks, Detroit, Mich.

Cranes, Locomotive
The Males Co., ... Cincinnati, O.

Cranes, Wrecking
Mussens, Limited ....Montreal.

Crowbars
B. J. Coghlin & Co..............Montreal.

Curtains and Fixtures, Car
The Holden Co., Ltd............Montreal.
Preston Car & Coach Co...Preston, Ont.

Cuts
Acton Burrows, Limited ....Toronto.

Cylinders
American Vanadium Co....Pittsburg, Pa.

Derricks
M. Beatty & Sons ....Welland, Ont.
Mussens, Limited ....Montreal.

Diaphragms, Vestibule
Guilford S. Wood..............Chicago, Ill.

Dies
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co. ......Hespeler, Ont.

Ditchers
M. Beatty & Sons ....Welland, Ont.

Diving Outfits
John Date ....Montreal.
Mussens, Limited ....Montreal.

Doors, Steel Rolling
Mussens, Limited ....Montreal.

Door Signs
Acton Burrows, Limited ....Toronto.

Draft Gear
The Holden Co., Ltd............Montreal.
McCord & Co. ....Chicago, Ill.
Standard Coupler Co.....New York City.
T. H. Symington & Co.....Baltimore, Md.

Draughtsmen's Supplies
John A. Hart & Co ....Winnipeg.

Dredges
M. Beatty & Sons ....Welland, Ont.
Polson Iron Works, Ltd.........Toronto.

Drills, Air
Canadian Rand Co..............Montreal.

Drills, Flat Twisted
Cleveland Punch & Shear Wks., Cleveland.

Dry Goods
The Hudson's Bay Co......................

Dump Cars, Contractors'
F. H. Hopkins & Co............Montreal.
Peteler Car Co. ......Minneapolis, Minn.
Western Wheeled Scraper Co..Aurora, Ill.

Dump Cars, Hand
Meaford Wheelba'ow Co., Ltd., Meaf'd, Ont.

Dynamos
Northern Electric & Mfg. Co.....Montreal.
Vandeleur & Nichols ....Toronto.

Dynamo and Electric Castings
Am. Brake Shoe & F'dry Co., Mahwah, N.J.

Economizers
Babcock & Wilcox, Ltd..........Montreal.

Electric Apparatus
Allis-Chalmers-Bullock Ltd. ....Montreal.
Chapman & Walker, Ltd........Toronto.
Northern Electric & Mfg. Co.....Montreal.
Vandeleur & Nichols ....Toronto.

Electric Car Route Signs
Acton Burrows, Limited ....Toronto.
Preston Car & Coach Co...Preston, Ont.

Electric Light Plant
Allis-Chalmers-Bullock Ltd. ....Montreal.

Elevators, Grain
John S. Metcalf Co. ....Chicago, Ill.

Enameled Iron Signs
Acton Burrows, Limited ....Toronto.

Engines, Automatic
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Russel Wheel & Fdry Co..Detroit, Mich.

Engines, Corliss
Allis-Chalmers-Bullock Ltd. ....Montreal.
John Inglis Co., Ltd. ....Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Engines, Gas
Allis-Chalmers-Bullock Ltd. ....Montreal.
Vandeleur & Nichols ....Toronto.
Williams & Wilson, Ltd ....Montreal.

Engines, Gasolene
Canadian Fairbanks Co., Ltd...Montreal.
Ontario Wind Engine & Pump Co. Toronto.
Vandeleur & Nichols ....Toronto.

Engines, Hoisting
Allis-Chalmers-Bullock Ltd. ....Montreal.
M. Beatty & Sons ....Welland, Ont.
John Inglis Co., Ltd. ....Toronto.
I. Matheson & Co......New Glasgow, N.S.
Polson Iron Works, Ltd.........Toronto.
Russel Wheel & Fdry. Co..Detroit, Mich.
Williams & Wilson, Ltd ....Montreal.

Engines, Pumping
John Inglis Co., Ltd. ....Toronto.

Engines, Stationary and Marine
John Inglis Co., Ltd. ....Toronto.
I. Matheson & Co.....New Glasgow, N.S.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Engines, Steam
Allis-Chalmers-Bullock Ltd. ....Montreal.
Vandeleur & Nichols ....Toronto.

Explosives
Standard Explosives, Limited ..Montreal.

Express Office Signs
Acton Burrows, Limited ....Toronto.

Fencing
Owen Sound Wire Fence Co., Ltd., O'n S'd.

Fenders for Electric Cars
J. M. Moorhouse................Winnipeg.

Ferro-Vanadium
American Vanadium Co. ..Pittsburg, Pa.

Fire Appliances
Missouri Lamp & Mfg. Co., St. Louis, Mo.

Flags
The Hudson's Bay Co.....................

Flour
The Hudson's Bay Co.....................

Forgings
Edgar Allen & Co., Ltd. .... Montreal.
American Vanadium Co. ..Pittsburg, Pa.
Canadian Car & Foundry Co...Montreal.
Cleveland City Forge & Iron Co., Cleveland.
Crossen Car Mfg. Co........Cobourg, Ont.
Hamilton Steel & Iron Co., Ltd., Hamilton.
Nova Scotia S. & C. Co., New Glasgow, N.S.
Standard Steel Works Co., Philadelphia, Pa.

Foundry Appliances
Goldschmidt Thermit Co. ....Toronto.
Ont. Wind Eng. & Pump Co., Ltd., Toronto.

Frames, Steel for Cars
Canadian Ry. Equip't Co., Welland, Ont.

Frogs
Canadian Ramapo Iron Wks.Niagara Falls.
Peteler Car Co. ......Minneapolis, Minn.

Furnaces, Corrugated
Continental Iron Works....Brooklyn, N.Y.

Furnaces, Oil
Railway Materials Co. ....New York

Furnaces, Shop
Railway Materials Co. ....New York.

Fuse Batteries
Standard Explosives Limited...Montreal.

Fuse Detonators
Standard Explosives Limited...Montreal.

Fuses, Electric
Standard Explosives Limited...Montreal.

Gaskets
Franklin Mfg. Co...........Franklin, Pa.
The Holden Co., Ltd............Montreal.
McCord & Co. ....Chicago, Ill.

Gates
Owen Sound Wire Fence Co., Ltd., O'n S'd.

Gates, Crossing
The N. L. Piper Ry. Supply Co...Toronto.

Gauges, Locomotive
Taylor & Arnold ....Montreal.
Utica Steam Gauge Co..........New York.

Gears
American Vanadium Co. ..Pittsburg, Pa.

Generators, Electric
Northern Electric & Mfg. Co.....Montreal.

Grates, Shaking
Babcock & Wilcox, Ltd..........Montreal.
Polson Iron Works, Ltd.........Toronto.
Vandeleur & Nichols ....Toronto.

Groceries
The Hudson's Bay Co.....................

Hammers, Cast Steel
American Brake Shoe & Fdry Co.Mahwah.
James Smart Mfg. Co....Brockville, Ont.

Handcars
Canadian Fairbanks Co., Ltd...Montreal.
Crossen Car Mfg. Co.......Cobourg, Ont.
F. H. Hopkins & Co............Montreal.
Mussens, Limited ....Montreal.
Rice Lewis & Son................Toronto.

Hardware
The Hudson's Bay Co.....................
Rice Lewis & Son................Toronto.

Headlights
Commercial Acetylene Co.........Toronto.
The N. L. Piper Ry. Supply Co...Toronto.
Pyle National Elec. Headlight Co..Chicago.

Headlinings
Crossen Car Mfg. Co.......Cobourg, Ont.

Heaters, Feedwater
Robb Engineering Co., Ltd..Amherst, N.S.

Heaters, Oil-burning
Tate, Jones & Co. Inc. ..... Pittsburg, Pa.

Heating, Car
Canadian Gold Car H'g & L'g Co..Montreal.
Consolidated Car Heating Co., Albany, N.Y.
Safety Car Heating & L'ting Co.New York.

Hoists, Pneumatic
Taylor & Arnold ....Montreal.

Hollow Staybolt Iron and Steel Bars
Edgar Allen & Co., Ltd. .... Montreal.

Hoppers, Car, Wet or Dry
Duner Co. ....Chicago, Ill.

Hose, Air Brake and Steam
Guilford S. Wood.............Chicago, Ill.

Hydrants
Canadian Fairbanks Co., Ltd...Montreal
Kerr Engine Co.........Walkerville, Ont

Illustrations
Acton Burrows, Limited.........Toronto

Injectors
T. McAvity & Sons ....St. John, N.B.

Inspections
R. W. Hunt & Co..............Montreal.

Insurance, Accident
Can. Casualty & Boiler Ins. Co...Toronto.
Canadian Ry. Accident Ins. Co...Ottawa.
Imp. Guarantee & Acc. Ins. Co..Toronto.
London Guar. & Accident Co., Ltd.Toronto

Insurance, Boiler
Can. Casualty & Boiler Ins. Co...Toronto.

Interlocking Plant and Signals
Montreal Steel Works, Ltd......Montreal
Railway Signal Co. of Canada....Montreal.
Saxby & Farmer, Ltd..........Montreal.

Iron, Pig
Nova Scotia S. & C. Co., New Glasgow, N.S.

Iron Signs
Acton Burrows, Limited.........Toronto.

Iron Staybolt Bars
Falls Hollow Staybolt Co..Cuyahoga Falls.

Jacks
Canadian Fairbanks Co., Ltd...Montreal.
H. & E. Lifting Jack Co..Waterville, Que.
F. H. Hopkins & Co., Ltd.....Montreal.
Montreal Steel Works, Ltd......Montreal.
Mussens, Limited ....Montreal.
A. O. Norton ....Coaticook, Que.
James Smart Mfg. Co....Brockville, Ont.
Williams & Wilson, Ltd ....Montreal.

Japans
The Dougal Varnish Co., Ltd...Montreal.

Journal Bearings
Canadian Bronze Co. ....Montreal.
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TORONTO, CANADA, FEBRUARY, 1911.

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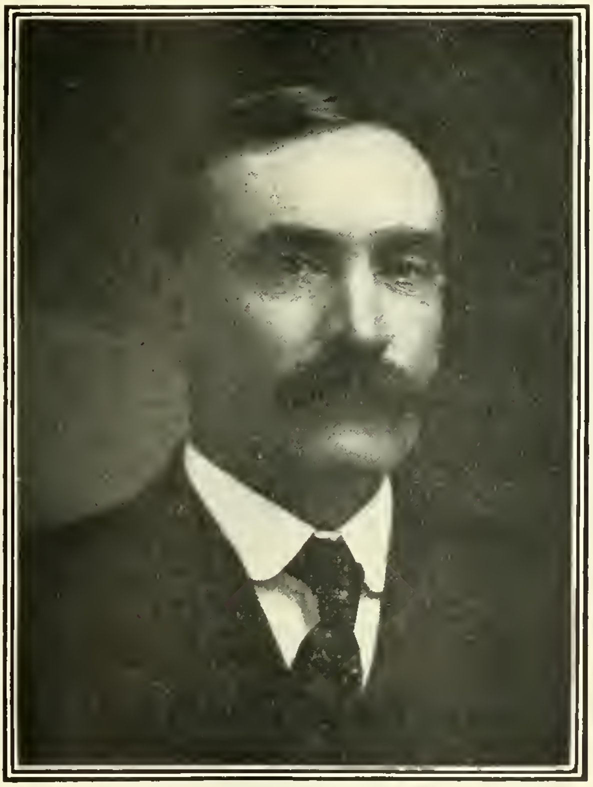
The Efficiency of Tools and Economy in Manufacture of Same.

By W. M. Townsend, Supervisor of Tools, Montreal Locomotive Works Ltd

I will endeavor to bring out, in the following, a few points relative to the making of cheap and efficient tools. Various kinds of milling machines are rapidly making their way prominent in removing surplus stock from machine and locomotive parts, hence the necessity of having durable milling cutters. To obtain an efficient milling cutter there are two points which are essential, namely, high speed steel and a spiral or helical cutting edge. The latter quality may not appeal to some, due to the fact that an inserted tooth cutter made from a mild steel body with a high speed steel blade inserted at an angle of about 12 degrees, answers fairly well. This, however, is a great mistake. To obtain a clean cut it is necessary to have a certain and constant angle of rake or lip to the milling cutter. This can be obtained only by having a helical or spiral cutting edge. To construct the milling cutter that will give the best results and still adhere to the principle of strict economy (the point which I wish to emphasize mostly in this paper), we must first of all consider its diameter. We will first speak of cutters having a diameter of over 6 ins. Keeping close to our principle of economy, we apply to the scrap heap for material; there we will find crop ends of billet steel sawn from the ends of driving axles, which make an ideal body for an inserted tooth high speed steel milling cutter. The scrap value of these crop ends is very small, hence the low cost for the body of the cutter. Now, to procure high speed steel for the blades in an economical manner (which if cut from the steel bar would cost 50c a pound), we collect all the broken and short high speed tools that cannot be further used on planers, shapers, lathes, etc. These are hammered into blades ⅝ x 1¼ x 5 ins. long. The cost of material for the blades is covered by the cost of labor in hammering out the steel plus its scrap value which is very small. So much for the economy in procuring material.

We will now turn our attention to the design, upon which depends the efficiency. The bodies, after having been bored, turned and faced, are milled with slots ⅝ in. wide, ¾ in. deep, 1½ in. apart, at an angle corresponding to a predetermined helix or spiral. The blades are then fitted and slightly caulked. The cutter is then set up on a universal milling machine, and the front of the blades milled spiral. This gives a constant angle of rake or lip from one end to the other. This insures an equal strain along the whole length of the blade. On the other hand, if the blades are merely put in on an angle and not milled spiral, the lip or rake of the cutter is irregular. It can readily be seen that from one end of the cutter to the centre there will be a decreasing lip, while from the centre to the other end of the cutter there will be an increasing drag. This causes an unevenness in the cut and also a tendency to break and pull out the blades on the drag side. So much for cutters having a diameter over six inches.

Inserted tooth cutters with a diameter much less than six inches are not practical, due to the fact that slot cut at an angle across the top of the cutter body would be very irregular in depth, hence the impossibility of holding the blade. Take for example a blank cutter body 5 ins. diameter 10 ins. long, cut a slot through the top at an angle of about 15 degrees, you would have a depth of about ¾ in. in the centre, while at either end there would be no depth to speak of. This can be avoided, however, by dividing the cutter into short sections, thereby lessening the unequal depth caused by cutting a slot at an angle to the axis of the cutter, but the high cost of this method does not warrant its adoption. The general practice, in making cutters of smaller dimensions, is to use carbon steel costing about 14c. a pound. This is altogether unnecessary and extravagant. Billet crop ends selected from high carbon billets such as are used for driving axles, pistons, and side rods, carefully hammered, outclass in every way the ordinary tool steel. In the first place, the cost, hammered to size, is about 1½c. a pound, as compared with 14c. a pound for tool steel. Secondly, they are tougher, and the teeth will not break when a heavy cut is put on, such as is the case with tool steel, and the cutting edge stands up equally as well. The success of this method of course depends upon the treatment of hardening. This, however, is very simple, and consists of carefully packing the tools to be hardened in a mixture of salt and raw bone, placed in an airtight box, which should be brought and kept to a heat of 1,00 deg. Fahr. from 24 to 48 hours, according to size, then drawn from the box and quickly immersed in running clear water. There is no need whatever of drawing the temper, the cutting edge has the correct hardness, while the body of the cutter remains very tough. The question that you would naturally raise at this point would be: How deep can cutters be hardened in this manner? A depth of ⅜ in. can be reached, or in other words, the cutter may be ground until the tooth is almost ground away, leaving no space for the chips to get away. When a cutter reaches this stage, it can be annealed, recut, and rehardened, as often as the thickness of material will allow, without affecting the quality of the cutter.



T. Kilpatrick,
Superintendent District 1, British Columbia Division, C.P.R.

Some three years ago a test was made at our works to determine the advantage of using high speed steel cutters for a certain class of work, namely—milling out jaws of side rods, transmission bars, radius bars, combination levers, etc. It was found that the high speed steel cutters broke from the vibration and pressure brought to bear upon them, whilst cutters of the same design, made from billet steel case hardened, did the work very satisfactorily without breaking, running at the same speed and feed. What I have said so far regarding milling cutters refers to cutters used for straight milling. Cutters used for milling gears, taps, reamers, and irregular shapes should, in my opinion, be made from high speed steel.

In studying the efficiency and economy of tools, we must not forget to consider the quality and quantity of work required of them. We now come to tools such as are used on lathes, planers, shapers and slotters. There are many brands of high speed steel on the market at the present time, and I have tried almost all of them, but will not express my opinion regarding their merits, as it would make this paper appear

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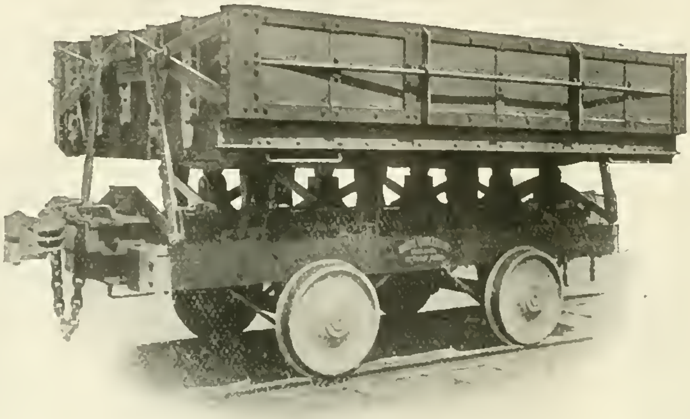

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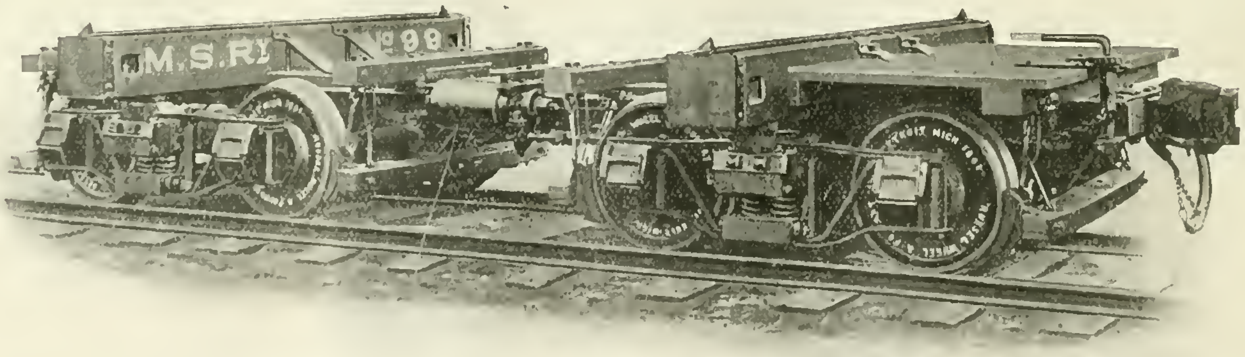

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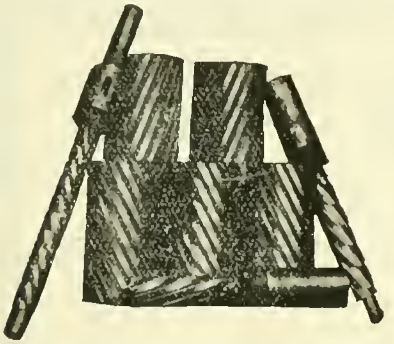

Fig. 1.—Illustrating depth to which cutter teeth may be ground, still retaining their proper hardness.

as an advertisement. I believe, however, that if we wish to ascertain which is the most efficient steel, we should give every brand an extensive trial, making an individual record of each, and determining which is the best, as compared to the price paid for it. Different shops have different materials to contend with and the formulæ used in the composition of steel differ, so that some brands are better for cutting one class of material, while other brands are better for cutting other classes of material. This is why I contend that each shop should test out every brand and see which is best adapted for its requirements.

High speed steel is an immense item in large machine shops, and great care should be exercised in order to avoid waste. A great saving may be made, by observing the following practice. In making finishing tools, instead of using a piece of high speed steel, say 1¼ x 2¼ x 15 ins. long, costing about $6, we go back to the old reliable, and use a piece of billet steel, leaving it as large as the tool post will admit, and weld a tip to it made of high speed steel. The finished cost of this tool is about one-eighth of the solid high speed steel tool and is just as efficient for these reasons: the billet steel is sufficiently strong to withstand the pressure brought upon it for a finishing cut. It does not require dressing any oftener than the solid tool, but it does require a little more care. I will explain a little more clearly how this tool is made. As stated before, we take a piece of high carbon billet from the scrap heap, and draw it out to the required dimensions. One end is then scarfed ready to receive the high speed steel tip which is wedge shaped. The toolsmith fits the two parts fairly well together before welding to ensure a neat weld. The parts after having been prepared are then heated, the tip being allowed to heat longer than the body, owing to the necessity of the former being of a much higher temperature than the latter to allow for welding. When both are at a welding heat they are quickly withdrawn, a piece of Lafitte welding compound is placed between them and hammered lightly together. The tool is then reheated, care being taken to place the nose of the tool in such manner that it will be most exposed to the fire. When the required heat is reached the tool is quickly withdrawn and placed between a former under a steam hammer and given a light sharp blow. In case of the tip being displaced it will not do to try and knock them into place again. The tip must be cut away and refitted, and a fresh piece of the compound used. The tool is then treated in the same manner as a high speed steel tool. These tools have been used until the tip has been ground right down to the weld. I would not advise making heavy roughing tools in this manner, as the billet steel body would not stand the pressure required by a roughing tool such as is used on a heavy planer. A tool of this description however, answers well when used on a lathe where the point does not project far from the tool post, also where the cut is continuous and not intermittent, as is the case on a planer. You can readily see where the saving comes in, if this method is only applied to finishing and lathe tools. Fig. 2 illustrates the preparation of parts for welding tool with high speed steel tip.

Twist drills made from carbon steel, with the exception of jobbers' drills, that is, drills up to ½ in. diameter, are almost a thing of the past, high speed steel drills having taken their place. The original design of the high speed drill was exactly the same as the ordinary carbon drill with the exception of the material used. This, however, has proven to be inefficient and expensive due to the following reasons: In the first place, to obtain proper results from a high speed drill, it is necessary to have adequate space to allow the chips to free themselves from the drill, as the flutes will soon choke up owing to the increased feed and the speed of the drill. The fluted high speed drill has not this advantage. It is expensive for this reason. To make a drill of this design, it is necessary to use a round bar of solid steel, cutting away 50% of it to form the flutes. Yet there are men who will tell you that this design of drill is the best and cheapest on the market.

I will now give my opinion as to which is the best high speed drill and the reasons why. A high speed steel drill with the twisted section about half way between the flat twisted section and the standard milled drill is the most efficient and economical, from the fact that it takes just one-third of the steel to make it, and efficient because of the adequate space for the chips to clear, thus preventing clogging and choking. The feed can be doubled, due to this advantage. I have found in my endeavor to reduce the cost of tools that in the average shop where locomotives and heavy machines are built, they have sufficient equipment to make efficient high speed drills with a saving from 10 to 50%. The same may be said of all kinds of taps, especially those used in boiler construction.

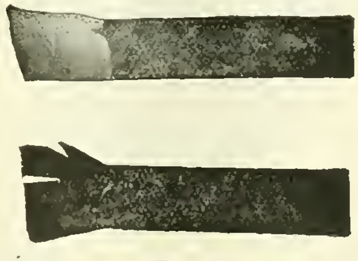

Fig. 2.

A few words may be said regarding reamers. There are many styles of straight reamers, all of which have their advantages, which leaves me nothing to say regarding them. Taper reamers are different in their action, however, inasmuch as the whole part of the reamer that comes in contact with the work is cutting equally, whereas, in the straight reamer, the extreme end is the only part that cuts, the rest of the reamer only acting as a guide. It is this difference of action that I now wish to discuss. In all railway shops there is a great amount of taper reaming to be done; this calls for a different class of reamer. Having visited some of the large locomotive works and enquired from others, I find that their practice is to use the straight fluted taper reamer—some of them have the teeth staggered, others equally spaced. I beg to state that this style of reamer is decidedly wrong. Reamers that are required to cut equally their full length of flute should be milled with a left hand spiral cutting edge, having an angle of about 20 deg.; the pitch or distance between the teeth should be about ¾ in., leaving ample space for the chips to clear, thus preventing clogging and tearing of the hole. The advantages of this style of reamer are: It takes about 30% less power to drive it; it never chatters; it never digs in; the tang does not twist off; the teeth do not break off; they are easy on crank shafts and can be driven with an air motor, where straight fluted reamers would stick. It may appear that I am claiming a little more than what is true, but these are actual facts that have been tried and proven. There are two reasons for the success of this style of reamer, namely, the spiral cutting edge which gives the reamer a shearing action instead of a straight drag (which must necessarily follow with a straight flute), also to the fact that the line of cut parallel to the length of reamer is divided, due to the angular cutting edge which is not parallel to the line of cut. The even and regular curl of chip made by this reamer will also convince you of the correctness of design. The cost of these reamers is a trifle less than the straight fluted reamers, on account of the fewer number of teeth to be cut. This applies generally to reamers having a diameter of 1½ ins. and under, with a flute of from 14 to 16 ins., standard taper 1-16 in. to 12 ins. Fig. 3 illustrates the difference of straight fluted and spiral fluted taper reamers.

A word or two may be said regarding reamers of large diameter, such as crosshead reamers both for piston and wrist pin fit. For cheapness and durability these may be made in the same manner as solid milling cutters, as mentioned in the previous part of this paper. Select a piece of high carbon billet from the scrap heap, have the forging well hammered, machine and caseharden, and you wil have a tool that is equal to the finest tool steel made. You will find that the cost will be about one-tenth of that of good tool steel.

There are many other items of interest whereby great savings can be made, but as our subject covers such a wide area, I must confine my remarks to one or two thoughts in general. An immense saving can be made by annealing all broken and worn-out tools, immediately they are out of service. This being done, they should be arranged in open bins or racks, so that when the foreman of the tool room requires material, he looks over his stock of annealed scrap (I mention annealed for the reason that very often a piece of scrap material is available, but it is necessary to wait while it is being an-

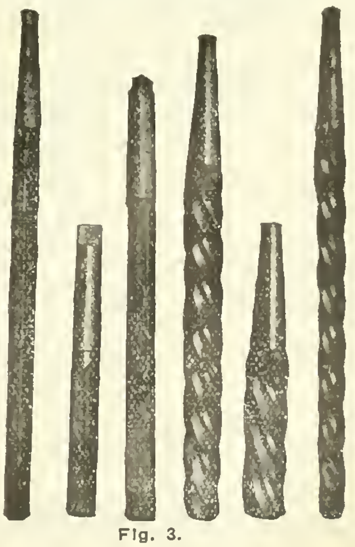

Fig. 3.

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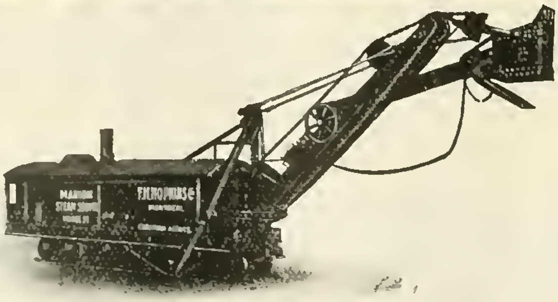

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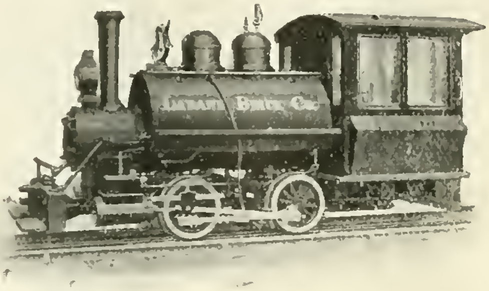

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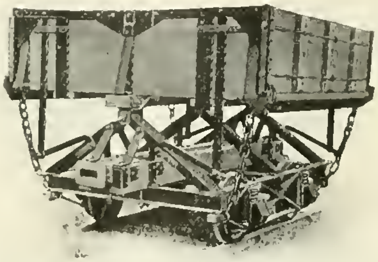

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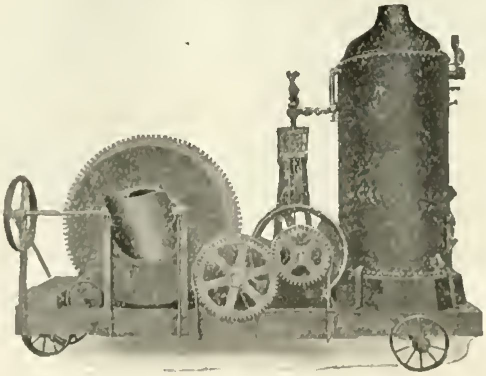

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nealed) and very often finds exactly what he wants without drawing from the regular stock.

Another feature regarding economy, is the correct distribution. I mean by this that every man should have all the tools he requires and no more. I say this because it is a well-known fact that workmen have a habit of collecting and storing up under lock and key, all the tools they can possibly lay their hands on, for their own individual use. You can readily see that with this practice, if not watched and kept in hand, in large plants many thousands of dollars may be invested and nothing accomplished.

It is absolutely necessary in large plants to have a man who is fully acquainted with every detail of tool design, tool purchasing, and tool distribution, to properly effect a system which would result in efficiency and economy. This cannot be expected of the tool room foreman, as his duties confine him to the tool room. Under these circumstances the man appointed to perform the duties of economizing in cost, and designing efficient tools, should have the liberty, to watch all machine shop operations, and to have full supervision of tool room practices. This system is in vogue in some of the large locomotive works in the United States and one that I know of in Canada. This system, if adopted by some of the other large plants, would, I feel sure, bring about results worth noting.

The foregoing paper was read before the Canadian Railway Club recently.

◆

Interpretation of General Interswitching Order.

The Assistant Chief Railway Commissioner, D'Arcy Scott, prepared the following under date of Nov. 26, 1910:—In an application, dated Mar. 4, 1910, the Board is asked by the Canadian Pacific, the Grand Trunk and the Montreal Terminal Railway Companies for an order interpreting the provisions of order 4988, known as the General Interswitching Order, dated July 8, 1908. Counsel for applicants and representatives of the Montreal Board of Trade and the Canadian Manufacturers Association, were heard at Ottawa on June 22, 1910.

The object of having a general interswitching order is to make the rate for the performance of an interswitching service uniform on all railways under the Board's jurisdiction, no matter what the extent of the movement (provided it is within the limit mentioned in the order), or the time or labor required in performing it. The order enables the shipping public and the railway companies to know exactly what service must be performed as interswitching, how much the company that performs the service is to receive, and how much the shipper or consignee is to pay for it. At some points, on account of local conditions, the provisions of the order are not as advantageous to the railway companies as they are at others, and in some cases one railway company may have to do more than another to earn the toll; but such conditions may, to some extent, be inevitable under a general order made to apply everywhere; and there is a certain amount of reciprocity in the working out of the order which should even up matters between the railways. But the intention of the Board in passing the order was chiefly to benefit the public by establishing a uniform rate and conditions of service for interswitching. This is well described by the late Chief Commissioner Killam in his judgment in the London interswitching case, in which he said:—

"With the progress of invention, new enterprises are continually supplanting or injuring old ones to the ruin or loss of those interested in the former. Railways have not only directly affected in this way former modes of transportation, but they have also been instrumental in building up particular localities or enterprises at the expense of others. It has never been the policy of the law to afford compensation for losses thus occasioned. When the Legislature authorizes the construction of new lines of railway in competition with those formerly existing, this is not done with a view to benefit the promoters of the new lines or to injure those interested in the old ones, but solely for the public good.

"The provisions of the Railway Act which require railway companies thus to interchange traffic at connecting points are introduced, not for the purpose of benefitting one railway company at the expense of another, but solely in the interest of the public. The law cannot recognize anything in the nature of a good-will of the business of either railway company thus affected for which another should give compensation. In my opinion the division between railway companies of the joint rates for traffic thus interchanged should be made upon the principle of giving reasonable compensation for the services and facilities furnished by the respective companies in respect of the particular traffic thus interchanged, and not by reference to the magnitude of the business of one company or the other at particular points or the respective advantages which each can offer to the other there, or a comparison of the loss which the one is likely to sustain with the gain likely to accrue to the other from the giving of the facilities which the law requires."

From what I have said and quoted, I think it is abundantly clear that an order such as the one before us, which is applicable at practically all points of interchange and to all roads under our jurisdiction, must contain arbitrary provisions which may appear easier to apply in some places than in others, but which, nevertheless, must be enforced in the same manner at all points.

From a High Mechanical Authority.

H. H. Vaughan, Assistant to the Vice President Canadian Pacific Railway, Montreal, writes:—

"I consider the Railway and Marine World a very valuable publication. the occurrences on Canadian and "It presents all information about other railways in so complete a form that I consider it of the greatest value."

The feature of the order to which the applicants have chiefly addressed themselves is the provision which makes it applicable to any interswitching movement not exceeding four miles from the nearest point of interchange. To quote the application, the Board is asked "to define whether or not the term 'interswitching' as used in the order, embraces the carriage of traffic from one point outside to a point within a terminal involving the haulage of goods from a point of connection which is a station, to a terminal, within a distance of four miles": in other words, to say that what they recognize to be an interswitching radius of four miles in one place may be cut down to an actual one mile or two mile radius in another. The effect of this would be to destroy the equality of principles of the order, and open the door to the giving of an undue preference to one locality over another. The order clearly means what it says, four miles from the nearest point of interchange, and I cannot see that it was ever the intention of the Board to put any limitation on this four mile provision, and I do not think it would be wise for the Board to do so now.

Apparently some of the companies to which the order applies have not been complying with its provisions, but have collected larger tolls than they are entitled to. In such cases the courts of law provide a means for obtaining redress. The true meaning of the order, with regard to the four mile limit, was made clear to the companies by circular 15, issued by order of the Board on Jan. 21, 1910, which said:—

"The maximum interswitching distance is unqualified, and means, as stated, 'any distance not exceeding four miles . . from the nearest point of interchange,' regardless of the location of the point of interchange, or of station yard limits, or any other limits or boundaries."

That being the meaning of the order, and the railway companies having been by that circular told what the meaning was, there is really nothing now to interpret, and the present application should therefore be dismissed.

The other feature of the application relates to clause 10 of the order, the purpose of which was to protect the railway companies at points of interchange against possible misinterpretation by shippers, who might claim the substitution of the interswitching toll for the local tariff rate on a purely local movement of one company. I am unable to see how any railway company could read this clause any other than its true meaning, namely, that the interswitching toll of the company which performs the terminal service does not supersede or modify any local freight rate published by that company to apply to its ordinary or local freight traffic between any two of its own stations.

To dispose of a question which arose at the hearing, I would add that the order was not intended to apply, and is not applicable, to traffic loaded at a point on one railway and destined to a point on another railway within the same switching district, or within adjoining switching districts, covered by local switching tariffs to and from the point of interchange.

Commissioners Mills and McLean agreed with Mr. Scott, and Chief Commissioner Mabee appended the following memo: "In view of the opinions of the other members of the Board and that of the Chief Traffic Officer, I do not dissent from the above disposition of this matter."

In connection with the foregoing, the Board's secretary has issued a circular stating that in view of the fact that the tariffs of many railway companies are not in accordance with the general interswitching order no. 4988, it is directed by the Board that such variation from that order be removed and new tariffs published and filed without delay.

◆

I. C. R. Blacksmiths' Shop Moncton.

Owing to an unfortunate oversight in proofreading, an article in our last issue on the I.C.R. blacksmith shop at Moncton, N.B., was credited to Arthur Rochell, instead of to Arthur Stockall, Foreman Blacksmith I.C.R., by whom it was written.

◆

Railway Employes and Wages.—The number of persons employed in the service of Canadian railways on June 30, 1910, was 123,768, against 122,341 in the previous year. The distribution is given as follows:—General officers, 372; other officers, 718; general office clerks, 6,835; station agents, 2,879; other stationmen, 12,578; enginemen, 4,419; firemen, 4,885; conductors, 3,323; other trainmen, 7,946; machinists, 2,935; carpenters, 4,348; other shopmen, 15,387; section foremen, 4,539; other trackmen, 30,131; switch tenders, 1,628; telegraph operators, 2,985; employes on floating equipment, 292; all other employes, 17,568. The salaries and wages paid were $67,167,793, distributed as follows:—Ways and structures, $15,502,902; equipment, $14,775,782; traffic expenses, $1,313,980; transportation expenses, $32,091,952; general expenses, $2,483,177. In addition there were 16,709 employes engaged in outside operations, to whom was paid $5,169,922.58 in wages.

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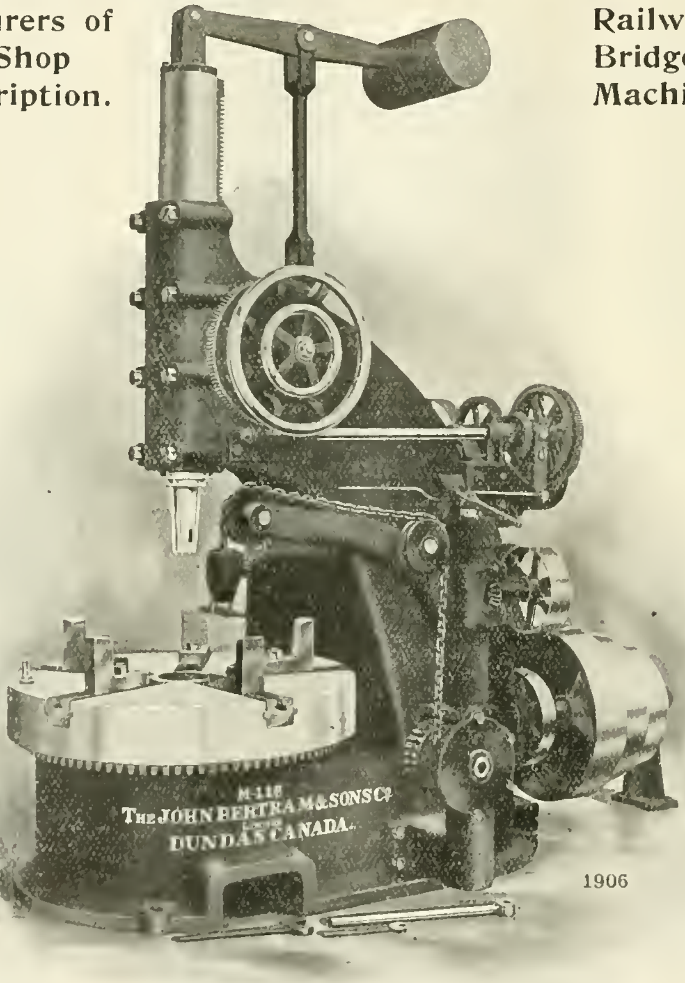
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STEAM RAILWAY STATISTICS FOR YEAR ENDED JUNE 30, 1910

The table given in our last issue showed the financial results of the operations of steam railways for the year ended June 30, 1910. The following table gives the percentages and the principal statistical information compiled by the companies. The table published last issue and the one given below contain all the information given prior to 1909 in our compilation of these statistics, but the columns have been rearranged so as to combine in the first table the financial and in the second the statistical information.

Name of Railway	Proportion of total passenger service train revenue of total earnings	Proportion of freight revenue plus switching revenue, &c., to total earnings	Revenue Train Mileage	Mileage of Non-Revenue Trains	Earnings per Train Mile	Passengers Carried	Passengers Carried One Mile	Passenger Earnings per Train Mile	Tons of Freight Carried	Tons of Freight Carried One Mile	Freight Earnings per Train Mile
Alberta Ry. & Irrigation Co.	29.46	64.81	129,116	2,777	$ 2.90	87,619	3,641.180	$ 1.24	178,090	8,727,325	$ 2.90
Algoma Cent. & Hudson Bay Ry.	5.21	59.21	53,424	4,341	7.43	16,206	545,549	.54	277,946	6,341,160	4.51
Atlantic & Lake Superior Ry.	39.13	55.64	93,900	....	.91	25.836	1,363,498	.35	31,169	1,122,084	.50
Atlantic, Québec & Western Ry.	33.57	65.69	17,044	125	.97	12,546	187,154	.33	14,974	277,252	.63
Bay of Quinte Ry.	23.90	72.61	164,162	....	1.02	93,071	1,483,422	.25	159,097	5,807,569	.74
Bedlington & Nelson Ry	13.28	86.75	1,452	5	.83	438	3,033	.11	6,600	19,741	.72
Bessemer & Barrys Bay Ry.	....	100.00	3,000	....	1.23	....	....	....	24,975	124,875	....
Brandon, Sask. & Hudson Bay Ry.	44.17	55.64	68.976	518	1.09	35,850	1,125,777	.75	66,623	2,881,863	1.67
British Yukon Ry.	23.79	74.93	58,288	9,003	5.64	11,015	987,998	1.36	23,744	2,023,641	4.34
Brockville, Westport & N.W. Ry.	53.78	46.20	57,330	180	1.04	61,721	1,851,630	.56	22.456	673,680	.97
Canada Southern Ry.	29.82	69.81	3.698.322	166,835	2.38	1,164,119	95,298,437	1.45	6,752,247	1,084,838,260	3.05
Canadian Gov't Railways—											
Intercolonial Ry.	33.98	64.96	6,781,677	250,750	1.40	3,716,154	156,861,219	1.08	3,984,054	1,106,777,165	1.47
Prince Edward Island Ry.	52.88	46.82	328,018	34,455	.96	352,528	7,932,277	.52	103,100	3,503,868	.80
Canadian Northern Ry.	19.02	73.05	5.841,446	510,976	2.37	1,268,296	106,217,424	1.07	3,809,856	1,356,351,140	2.59
Canadian Northern Ont. Ry.	29.73	66.77	446,361	15,772	1.14	136,275	6,280,602	.45	431,261	38,264,663	1.37
Canadian Northern Que Ry.	30.08	68.80	613,942	14,139	1.53	441,498	13,868,889	.69	641,052	49,293,363	1.90
Canadian Pacific Ry.	31.20	67.08	38,397,562	2,006,290	2.30	11,050.924	1,341,255,609	1.54	20,551,368	7,569,824,332	2.66
Cape Breton Ry.	68.55	31.14	19,468	....	.37	7,332	166.660	.25	2,869	58.092	.11
Caraquet Ry.	34.57	65.63	43,241	....	1.23	15,632	576,216	.42	26,218	1,179,810	.80
Carillon & Grenville Ry	60.08	2.09	2,418	....	.88	3,560	43,480	.53	45	585	.26
Central Ontario Ry.	29.13	68.37	199,378	6,446	1.54	147,588	3,431,460	.59	273.143	9,941,384	.20
Crows Nest Southern Ry.	15.00	84.13	109,378	10,060	1.44	22,528	558,711	.51	224.166	10,906,894	2.10
Cumberland Ry. & Coal Co.	33.11	66.89	36,132	....	1.35	28,102	457,019	.44	92,764	1.350,160	.90
Dominion Atlantic Ry.	47.47	52.20	556.342	8,056	1.50	370,843	16,317,092	.81	342,257	17,112,850	1.75
Elgin & Havelock Ry.	36.88	63.12	18,720	....	.56	10,903	141,739	.20	13.531	189,434	.52
Eastern British Columbia Ry.	13.73	86.06	7.584	....	3.91	6,131	71,128	.53	112.488	1.306,063	3.36
Grand Trunk Ry.	34.36	64.58	17,250,320	805,386	1.81	10.475,609	511,285,206	1.31	16,751,343	2,972,874,528	2.11
Canada Atlantic Ry.	22.61	75.28	1,412,947	73,842	1.44	544,323	17,901.491	.62	1,534,984	216,811,025	1.89
Halifax & South Western Ry.	50.82	48.66	341,926	9,510	1.20	177.644	7.227,160	.67	213,850	10,701,093	.78
Hereford Ry.	27.25	70.44	79,066	881	.84	26.730	655,158	.33	165,228	4,505,633	1.03
Inverness Ry. & Coal Co.	11.67	87.66	105,707	1,514	1.82	34,579	817,082	.52	290,658	16,202,735	1.59
Irondale, Bancroft & Ottawa Ry.	26.15	73.06	32,120	816	.87	11,392	208,931	.22	29,107	910,300	.64
Kaslo & Slocan Ry.	16.82	83.18	7,033	....	2.55	2,519	40,503	.43	15,081	278.188	2.12
Kent Northern Ry.	47.86	52.14	17,010	540	1.01	9,500	256,500	.49	6,961	187.947	.53
Kettle River Valley Ry.	18.43	81.57	2,136	....	1.05	1.029	10,447	.19	2,104	30.574	.86
Kingston & Pembroke Ry.	31.90	70.42	131,850	....	1.41	79,405	1,905,720	.46	106,983	5,242,167	1.29
Klondike Mines Ry.	21.38	77.37	9,886	....	5.46	3,241	72,277	1.16	14.961	150,718	4.22
Liverpool & Milton Ry.	4.34	95.66	9,450	....	1.12	9,240	36,960	.04	40,503	202,000	1.07
Lotbiniere & Megantic Ry.	17.35	81,59	19,636	....	1.80	11,737	175,326	.32	55,874	766,952	1.54
London & Port Stanley Ry.	31.81	67.61	121,568	844	1.02	169,706	2,995,973	.49	486,302	8,238,062	1.48
Manitoulin & North Shore Ry.	3.78	94.34	25,719	1,489	3.14	9,756	77,049	.22	412,486	3,307,418	3.00
Maritime Coal, Ry. & Power Co	11.89	88.08	28,755	....	2.29	22,730	208,537	.36	199,300	1,795,151	2.01
Massawippi Valley Ry.	34.57	64.49	177,620	1,340	1.11	157,073	2,879,969	.78	493,719	14,413,793	1.33
Midland Ry. of Manitoba	12.01	87.91	38,489	152	1.82	10,735	318,298	.25	102,436	6,050,936	1.87
Montreal & Atlantic Ry.	21.71	76.39	544,004	17,727	1.71	296,252	7,436,203	.67	1,110,564	59,614,174	1.75
Montreal & Province Line Ry.	52.11	46.18	96,890	3,870	1.08	169,175	2,382,795	.76	73,805	1,908,402	1.14
Montreal & Vermont Jct. Ry.	61.71	38.20	99,354	384	1.04	144,433	2,706,863	1.01	94,915	1,842,805	1.10
Morrissey, Fernie & Michel Ry.	9.66	90.34	35,424	....	3.12	105,310	642,391	.30	573,149	3,438,894	2.81
Moncton & Buctouche Ry.	34.65	65.35	21,390	1,024	1.31	21,025	427,028	.45	29,255	618,188	.86
Napierville Jct. Ry.	8.11	91.79	20,699	57	3.01	11,486	157,498	.29	228,897	6,485,250	2.76
Nelson & Fort Sheppard Ry.	39.66	56.40	55,721	4,755	1.33	21,165	682,133	.79	38,494	1,503,993	2.28
New Brunswick Coal & Ry. Co.	23.53	63.43	70,326	....	.93	22,938	516,336	.21	67,637	3,069,077	59
New Brunswick & P.E.I. Ry.	31.52	68.14	53,380	....	.57	18,241	364,820	.37	36,300	538,588	.33
New Brunswick Southern Ry.	52.50	47.21	58,682	10,980	.75	19,261	746,171	.44	20,562	1,256,443	.35
New Westminster Southern Ry.	36.73	62.92	10,744	48	3.68	23,034	323,590	1.35	40,644	424,890	2.32
North Shore Ry.	5.75	94.25	4,800	....	.72	782	6,256	.04	8,173	65,360	.68
Nova Scotia Steel & Coal Co.	38.23	61.77	17,528	....	.28	7,347	51,429	.10	7,100	59,010	.17
Orford Mountain Ry.	25.38	74.22	34,043	5,655	.66	11,470	189,255	.16	27,006	432,096	.49
Ottawa & New York Ry.	47.89	50.25	113,877	14,701	1.32	114,468	2,933,630	.95	141,486	5,506,691	2.05
Pere Marquette Rd.	6.32	93.38	1,290,387	8,472	1.90	303,486	6,161,438	.55	2,162,247	433,963,951	2.28
Phillipsburg Ry. & Quarry Co.	....	100.00	5,988	....	.91	....	....	....	13,281	79,686	.91
Princeton Branch W.C. Ry.	33.06	66.94	10,632	106	2.11	72,464	369,566	.73	160,474	818,417	2.18
Quebec Central Ry.	33.31	66.06	617,609	189,737	1.78	364,012	15,901,287	.81	688,151	48,562,639	2.42
Quebec & Lake St. John Ry.	40.87	57.71	391,104	14,156	1.48	325,329	11,052,901	1.03	260,134	22,615,614	1.68
Quebec Ry. Light & Power Co.	22.36	70.12	31,429	1,665	1.99	112,820	1,253,019	1.23	111,317	1,147,000	2.14
Quebec, Montreal & S. Ry.	43.09	56.78	217,937	1,894	1.27	280,854	4,450,839	.56	273,048	12,230,497	1.04
Red Mountain Ry.	25.03	71.31	13,079	182	1.18	9,710	84,929	.58	19,722	153,254	.84
Rutland & Noyan Ry.	69.34	30.66	6,732	....	2.01	121,269	411,102	1.39	170,944	579,500	.90

(*Continued on page 105*)

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A two years' test of Vanadium against ordinary steel in a large railroad shop shows an actual saving of $761.59 on a single item—a flue cutter weighing three ounces. In one year 1,049 carbon steel cutters were used to cut 145,444 flues; in the next year 68 Vanadium steel cutters cut 152,578 flues. The average number of tubes cut with the carbon steel tool was 139, the average for the Vanadium steel, 2,244. The cost of the carbon steel cutter per hundred flues was 54c., compared with 1 6-10c. per 100 with the Vanadium steel tool.

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Steam Railway Statistics for the Year Ended June 30, 1910—*(Continued from page 103)*

Name of Railway	Proportion of total passenger service train revenue of total earnings	Proportion of freight revenue plus switching revenue, &c., to total earnings	Revenue Train Mileage	Mileage of Non-Revenue Trains	Earnings per Train Mile	Passengers Carried	Passengers Carried One Mile	Passenger Earnings per Train Mile	Tons of Freight Carried	Tons of Freight Carried One Mile	Freight Earnings per Train Mile
Salisbury & Albert Ry	33.26	63.34	38,366	....	.92	14,646	336,653	.30	54,600	1,638,000	.58
Schomberg & Aurora Ry	45.74	54.26	21,843	....	.46	16,902	152,118	.21	8,188	114,632	.20
Stanstead, Shefford & Chambly Ry.	47.02	52.59	90,546	3,074	.86	182,912	1,216,076	.58	120,297	1,379,299	.89
St. Clair Tunnel	....	100.00	....	....	....	....	....	....	....	....	....
St. Lawrence & Adirondack Ry	37.80	62.13	287,116	5,363	1.79	450.803	11,021,528	1.06	669,564	24,858,622	3.04
St. Martins Ry	32.58	66.19	18,020	....	1.04	11,342	204,155	.34	18,715	330,746	.69
Sydney & Louisburg Ry	6.19	93.02	196,715	....	1.60	41,770	660,490	.53	2,660,644	41,203,162	1.83
Spokane & British Columbia Ry	3.02	96.42	1,144	....	2.86	748	2,767	.08	15,235	56,370	2.76
Temiscouata Ry	33.09	66.54	161,316	24,435	1.43	88,087	2,755,791	.52	138,254	5,903,922	1.75
Temiskaming & N. Ontario Ry	39.93	55.65	752,370	157,206	2.30	771,220	25,609,325	1.98	692,387	62,036,261	2.63
Thousand Islands Ry	31.88	61.72	33,312	....	1.12	30,643	183,858	.35	34,513	207,078	.69
Toronto, Hamilton & Buffalo Ry.	28.47	70.68	473,392	19,209	2.15	480,909	13,970,010	1.02	1,643,719	63,868,558	3.81
Vancouver, Victoria & E. Ry	30.79	68.38	291,865	130,621	2.18	213,554	6,023,850	.96	1,157,738	32,800,719	2.78
Victoria Term. Ry. & Ferry Co	48.20	51.26	1,849	....	2.83	56,609	64,534	1.36	34,252	39,047	2.14
Victoria & Sidney Ry	44.65	54.22	22,656	....	2.05	67,498	880,576	.91	35,766	495,843	1.60
Wabash Rd. in Canada	27.81	71.95	1,622,206	29,171	1.47	574,785	36,562,834	.93	1,366,666	324,598,514	1.90
Wellington Colliery Co	4.47	95.53	35,704	....	2.05	5,185	55,738	.72	378,560	4,069,520	1.96
York & Carleton Ry	41.23	58.77	8,502	....	.69	6,950	38,200	28	8,501	46,756	.40
Totals	....	....	85,409,241	4,581,534	....	35,894,575	2,466,729,664	....	74,482,866	15,712,127,701	....

February Birthdays.

Many happy returns of the day to—

S. A. Baker, Canadian Freight and Passenger Agent Chicago Great Western Ry., Toronto, born at Morrisburg, Ont., Feb. 1, 1877

B. H. Bennett, General Agent Chicago and North Western Ry., Toronto, born at Cobourg, Ont., Feb. 6, 1858.

F. L. C. Bond, Resident Engineer G.T.R., Montreal, born there Feb. 21, 1877.

T. Britt, General Fuel Agent C.P.R., Montreal, born there Feb. 3, 1871.

F. W. Churchill, C.P.R ticket agent, Collingwood, Ont., born in London, Eng., Feb. 6, 1853.

H. R. Charlton, General Advertising Agent G.T.R. and G.T.P.R., Montreal, born at St. John's, Que., Feb. 9, 1866.

F. W. Cooper, Resident Engineer C.P.R., London, Ont., born there Feb 16, 1880.

R. Crawford, Northwest Agent Northern Navigation Co., Winnipeg, Man., born at Kingston, Ont., Feb. 21, 1870.

E A. Evans, ex-Chief Engineer Quebec Ry., Light and Power Co., Quebec, born at Kensington, London, Eng., Feb. 26, 1855.

E. H. Fitzhugh, First Vice President G.T.R. and Vice President Central Vermont Ry., Montreal, born in Montgomery County, Mo., Feb. 1, 1853.

L. O. Genest, General Storekeeper C.P.R. Western Lines, Winnipeg, born at St. Henri, Levis County, Que., Feb. 16, 1856.

T. C. Hudson, Master Mechanic C N.Q.R. and Q. & L. St. J. Ry., Joliette, Que., born at Brockville, Ont., Feb. 20. 1873.

W. Jackson, C.P.R. ticket agent, Clinton, Ont., born there Feb. 4, 1860.

C. Gardiner Johnson, Lloyds' Agent for British Columbia, Vancouver, B.C., born at Dumblane, Perthshire, Scotland, Feb. 8, 1857.

R. S. Logan, Assistant to President G.T.R. and G.T.P R., Montreal, born at St. Louis, Mo., Feb. 13; 1864

D. C. Macdonald, City Freight Agent C.P.R., Winnipeg, born at Elmsdale, N.S., Feb. 9, 1874.

D. MacPherson, Assistant Chief Engineer National Transcontinental Ry Commission, Ottawa, born at Bath, Ont., Feb. 2, 1858.

T. McNabb, Master Mechanic Alberta Ry. and Irrigation Co., Lethbridge, Alta., born in Scotland, Feb. 16, 1849.

J. K. McNeillie, Superintendent District 2 Ontario Division C.P.R., London, Ont., born at Toronto, Feb. 23, 1874.

C. S. Maharg, Superintendent District 2 Alberta Division C.P.R., Calgary, born in Dufferin County, Ont., Feb. 4, 1867.

G. A. Montgomery, Superintendent Michipicoten Division Algoma Central and Hudson Bay Ry., Michipicoten Harbor, Ont., born at Bradford, Ont., Feb. 11, 1871.

A. Z. Mullins, Commercial Agent G.T.R., Grand Rapids, Mich., born at Appin, Ont., Feb. 14, 1862.

G. J. O'Dowd, City Freight Agent C.P.R., Quebec, born at Montreal, Feb. 4, 1874.

J. E. Proctor, District Passenger Agent C.P.R., Brandon, Man., born at Sarnia, Ont., Feb. 17, 1878.

A. H. Robinson, Superintendent Elgin and Havelock Ry., Havelock, N.B., born at Elgin, N.B., Feb. 2, 1862.

J. E. Robitaille, Accountant and Auditor Ha Ha Bay Ry., Chicoutimi, Que., born at Quebec, Feb. 17, 1870.

A. E. Rosevear, Assistant General Freight Agent G.T.R., Montreal, born Feb. 20, 1863.

H. H. Schaefer, Division Freight Agent Intercolonial Ry., St. John, N.B., born at Cologne, Germany, Feb. 10, 1848.

J. G. Scott, ex-General Manager Quebec and Lake St. John Ry., Quebec, born there Feb. 13, 1847.

G. Spencer, Superintendent District 1, Lake Superior Division C.P.R., North Bay, Ont., born in London, Eng., Feb 21, 1865.

H. E. Suckling, Treasurer C.P.R., Montreal, born at Gibraltar, Feb. 27, 1851.

Hugh Sutherland, Executive Agent Canadian Northern Ry., Winnipeg, Man., born at New London, P.E.I., Feb. 22, 1845.

Sir Wm. C. VanHorne, K.C.M.G., director C.P.R. and President Cuba Co., Montreal, born in Will County, Ill., Feb..

◆

J. Brown, C.P.R. city ticket agent Stratford, Ont., has been elected mayor of Stratford.

A Railway to Hudson Bay.

Referring to the reports current recently that Mackenzie, Mann & Co., contractors for putting in the foundations of the bridge over the Saskatchewan River at Le Pas, have abandoned the work having failed to find a suitable foundation after having bored to a depth of 250 ft., J. Armstrong, Chief Engineer, has stated that an excellent bottom had been found at less than 50 ft., and that the foundation work is being proceeded with. The foundations will be on solid hardpan, and piling will be unnecessary. The hardpan will be excavated to a depth of seven feet in order to get below any danger due from scouring, due to the rapid current.

Several meetings with the Dominion Government have been held for the discussion of the building of this line. Sir Wm. Mackenzie and Sir Donald D. Mann and other Canadian Northern Ry. officers had a conference with the Minister of Railways, Jan. 7, and it is reported that a preliminary agreement has been reached by which the Government will build the line, and the Canadian Northern Ry. will operate it at a rental of 3% on the cost, under substantially the same conditions as the G.T. Pacific Ry. is to operate the National Transcontinental Ry. The proposition has to be formally presented to the Government, and it will be brought before Parliament. (Jan. pg. 39.)

◆

Train Dispatching by Telephone.—The use of the telephone for the operation of trains is being extended over a considerable mileage of Canadian lines. The C.P.R. already has several lengthy lines in operation, and a proposition is under consideration for the installation of a telephone dispatching line between St. John, N.B., and McAdam Jct., on the Atlantic Division, during the current year, as well as on several sections of the Western lines. The G.T.R. is distributing wire for a telephone line in the vicinity of London, Ont., and the work is to be gone on with in the spring. The Michigan Central Rd. has ordered wire and instruments for the installation of a telephone circuit between Windsor and St. Thomas, Ont., for train operating purposes.

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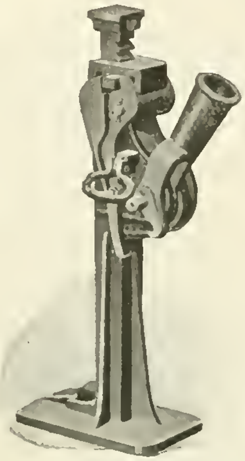

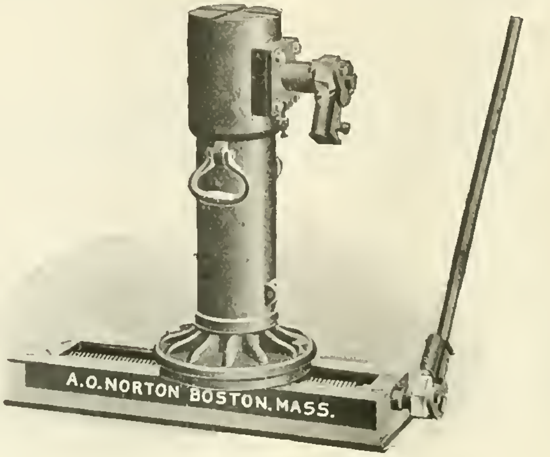
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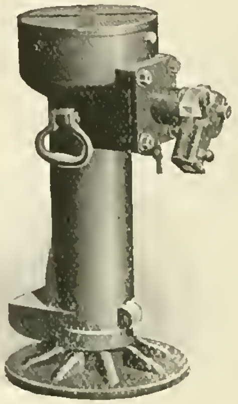

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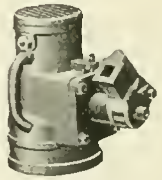

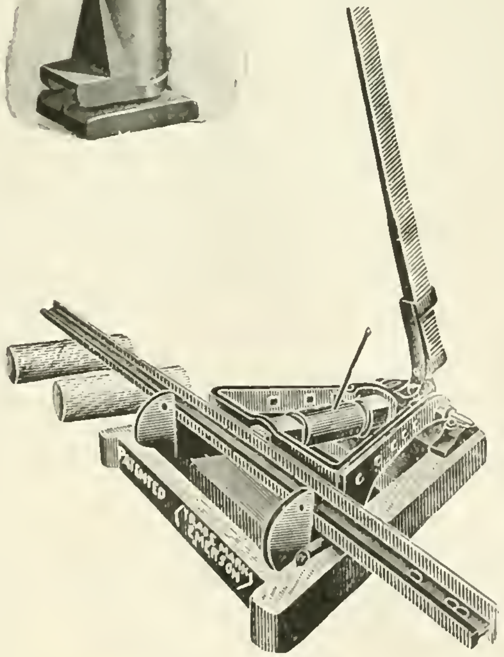

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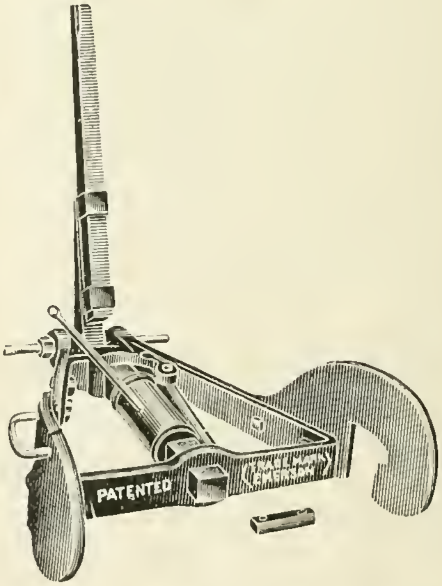

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Railway Statistics for 1909-10.

In submitting his annual statistical report upon Canadian steam railways for the year ended June 30, 1910, J. L. Payne, Comptroller of Railway Statistics, refers to the prompt return of statistical schedules to the department, which has done much to expedite the heavy work of tabulation.

The figures give information as to the operations of 24,730.86 miles of railway, an increase of 626.69 miles over the mileage reported June 30, 1909. The total mileage reported does not include a considerable mileage in actual operation, but officially regarded as under construction. The Grand Trunk Pacific Ry., for instance, is conducting a regular passenger and freight service between Winnipeg and Edmonton, as well as a freight service between Fort William and the junction with the National Transcontinental Ry., and is using the latter line for freight traffic between the junction with the Fort William line and Winnipeg, not a mile of which is included in the 24,730 miles. There are some other mileages under construction, which are being operated over by construction trains, so that it may be assumed that 1,500 miles of additional lines are really available throughout the Dominion, although returned as technically unfinished. The term "under construction" is regarded as being too comprehensive. It covers the work of building the line from the preliminary survey to the driving of the last spike. Assuming, however, that construction implies the active prosecution of positive work toward a completed railway, it is estimated that at least 4,500 miles of line were thus under way on June 30, 1910. The distribution of railway mileage, with the increase for the year, by provinces, is as follows:—

	Miles.	Increase or Decrease.
Ontario	8,230.25	+1.14
Quebec	3,794.94	+132.00
Manitoba	3,220.62	+15.32
Saskatchewan	2,931.90	+300.56
British Columbia	1,832.28	+36.34
New Brunswick	1,521.65	−25.43
Alberta	1,488.42	+166.90
Nova Scotia	1,350.56	+0.3
Prince Edward Island	269.33	......
Yukon	90.91	.....
Total	24,730.86	626.86

The decrease in New Brunswick is due to the elimination of the Albert Southern Ry., which has not been operated for many years. During the year there were added 79.43 miles of second track, while yard track and sidings were increased by 393.47 miles. During the four years ended June 30, 1910, there has been an increase of 2,279 miles of main line, 476 miles of second track, and 1,063 miles of yard track and sidings. Combining all these there were at the date of the report 31,767 miles of track in the Dominion in actual operation.

The total of outstanding obligations was $1,410,297,687, of which $687,557,387 was represented by capital stock, $696,677,305 by bonds, $8,365,077 by miscellaneous obligations, $5,036,546 by income bonds, and $12,661,372 by equipment trust obligations. In an endeavor to work out an approximate idea of the capital per mile of line, it is pointed out that the old method was to add to the total of the stocks and other obligations the amount of the subsidies paid over, and to divide the sum produced by the total railway mileage. On this basis the capital liability of each mile of line on June 30, 1910, was $64,727. This figure is stated to be delusive, as both the capital liability and the mileage are exaggerated. The capital liability of lines absorbed by the larger companies is included twice, first as liability of the original company, and secondly in the capital of the purchasing company, issued to acquire the stock, while other lines are owned by mining companies, and there is no separate stock issue in respect of them. The amount to be deducted in respect of these lines is estimated at $226,298,988, thus reducing the aggregate capital liability to $1,183,998,699. As regards the mileage there are 2,043.84 miles of Government lines, against which there are neither stocks or bonds outstanding, and 75.36 miles of lines against which no capital liability can be assigned, thus leaving 22,612 miles of line against which a definite capital liability can be assigned. This will give an actual outstanding capital per mile of line of $52,361. It is impracticable to estimate the actual cost of Canadian railways, but an earnest effort is to be made by the Department during the current year to gather together whatever data is available under that head. The facts in relation to the Government lines are readily available, as follows:—

	Mileage	Cost.	Per Mile.
Intercolonial	1,450	$ 92,273,074	$63,636
Prince Edward Island	267	8,465,365	31,705
Temiskaming and N. Ontario	266	15,315,672	57,577
New Brunswick Coal and Ry.	58	1,964,640	33,873

The cash subsidies paid during the year ended June 30, 1910, amounted to $1,789,723, of which $1,382,192 was paid by the Dominion. $248,531 by the provinces, and $159,000 by municipalities. From 1876 to June 30, 1910, financial aid was granted as follows:—

Dominion.	
Cash subsidies	$ 78 410 272 58
Loans	25 576 533 33
Cost of lines handed over to C.P.R.	37 785 319.97
Paid to Quebec Government	5 160 053.83
Total	$146,932,179.71
Provinces.	
Cash subsidies	$ 32 787.030.16
Loans	2,750,030.00
Subscriptions to shares	300 000.00
Total	$ 35,837,060.16
Municipalities.	
Cash subsidies	$ 12 739 824.98
Loans	2 404 498.62
Subscriptions to shares	2,839,500.00
Total	$ 17,983,823.60

In addition land grants have been made as follows:—Dominion, 32,040,378 acres; Quebec, 13,324,950 acres; British Columbia, 8,119,221 acres; New Brunswick, 1,647,772 acres; Nova Scotia, 160,000 acres. The Quebec grants, in nearly every case, gave an option to the company to take 52c. an acre in lieu of the land, and as this has in most cases been taken advantage of, comparatively little land has been alienated. Within the last few years the system of aiding railway building by a Government guarantee of bonds has been adopted, and to date the Dominion and provincial Governments have guaranteed bonds totalling $127,336,357, distributed as follows:—

Dominion	$ 52,439 865
Manitoba	20 899 660
Alberta	25 743 000
Saskatchewan	11 999 000
Ontario	7,860 000
Nova Scotia	5,022,000
British Columbia	2 196,832
New Brunswick	700 000
Quebec	476,000
Total guarantees	$127,336,357

The number of passengers carried during the year was 35,894,575; the number carried one mile was 2,466,729,664, and the number of passengers carried one mile per mile of road was 99,742, representing an increase in the density of passenger traffic of 15,400. The number of passengers carried per mile of line was 1,451, an increase of 96 as compared with the year ended June 30, 1909. Since 1907 there has been an increase of railway mileage of 2,279 miles, while the number of passengers carried per mile of line has increased by but 20, showing that railway construction has proceeded more rapidly than has the development of passenger traffic. The average revenue per passenger per mile was 1.866 cents, a decrease of .055 cent. The number of passengers per train was 59, an increase of eight; the average passenger journey was 69 miles, as compared with 62 miles in the previous year. The average revenue per passenger—that is from ticket sales—was $1.282, an increase of .087 Passenger trains ran a total distance of 35,022,541 miles, or 2,726,811 miles more than in the previous year, and mixed trains ran 6,441,440 miles, as against 7,061,580 in the previous year. The earnings per passenger train mile—using the aggregate earnings from ticket sales, mails, express, baggage, etc., as one of the factors—were $1.277, against $1.150 in the preceding year.

The volume of freight traffic was 74,482,866 tons, a gain of 7,640,608 tons, or 11.4% over the tonnage carried in the previous year. The number of tons hauled one mile was 15,712,127,701, as compared with 13,160,567,550; the number of tons hauled one mile per mile of line was 635,321, a betterment in the density of traffic of 89,330 tons. The average revenue per ton per mile was .739c., against .728c. The revenue from freight was $116,229,894.06, an increase of 21.4%; this was equal to $4,699.76 per mile of line, an increase of $728.85 per mile. The average number of tons hauled per freight train was 311, an increase of 33 tons; the average number of loaded cars per freight train was 18.15, against 16.37; the average number of tons per loaded freight car was 17.13, against 16.98. The average haul was 211 miles, an increase in distance of 14 miles. The revenue freight train mileage was 50,184,108 (including 6,441,440 of mixed train mileage), against 40,304,900 miles. The mileage of loaded cars increased from 775,543,414 to 910,858,711 miles. The tonnage of the different classes of freight carried as compared with the previous year is as follows:—

	1910. Tons.	1909. Tons
Products of mines	26,152 022	23,931.061
Products of forests	13,068.940	11,595.007
Products of Agriculture	12,891.351	11,963.263
Manufactures	10,014.279	7,902,592
Unclassified	7,073.078	6,234.372
Products of animals	2,765,006	2 807,487
Merchandise	2,518,190	2.393.285

The ratio of operating expenses to gross earnings was 69.2, or 2.9 better than in the previous year and the lowest since 1902. The net earnings were $53,550,776.71, against $40,456,251.76, a betterment of 32.3%. These net earnings were equal to $2,165.85 per mile of line, while the gross earnings were $7,033.93. Twelve lines earned 97% of the net earnings, and 24 lines showed deficits or managed to merely make ends meet. The operating expenses were $120,405,440.42, against $104,600,084.43, an increase of 15.1%. The operating expenses represented $4,868.60 per mile of line, an increase of $528.07, while the cost of running a train one mile was $1.409. The distribution of operating expenses compare as follows:—

	1910.	1909.
Way and structures	$27,035,603.46	$21,153,274.46
Equipment	26,002 301.30	21,510,303.59
Traffic expenses	4,366,176.92	3,798 824.57
Transportation	58,928,170.74	54,284,587.41
General expenses	4,073,188.00	3,853,094.40

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RAILWAY DEVELOPMENT.

Projected Lines, Surveys, Construction, Betterments, Etc.

Albert and Moncton Ry.—Application is being made to the Dominion Parliament for the incorporation of a company with this title to build a railway from Albert Mines in Hillsboro parish, via Hillsboro to Moncton, N.B., and a railway and general traffic bridge across the Petitcodiac River at Moncton. Pringle and Guthrie, Ottawa, are solicitors for applicants. (July, 1910, pg. 547.)

Alberta and Great Waterways Ry.—Among the acts passed last session of the Alberta Legislature was one providing that "any person or corporation claiming to have suffered damages in consequence of the passing of the act of forfeiture of the A. and G.W.R. Bonds Act," may file the same within three months with the Government, which will consider and report. Two claims were filed Dec. 20, one by T. K. Wright, for cutting and clearing about 20 miles of the right of way, and a second by a company for $10,000 worth of ties. The company's offices in Edmonton have been closed.

Two of the banks holding part of the proceeds of the bond issue have paid the money into court, but the third bank is going to fight the case, and has entered an appearance. The matter came before Justice Beck in chambers, Jan. 27, for the settlement of some preliminary questions.

The Dominion Government, on Jan. 9, seized the timber cut along the right of way for unpaid stumpage dues. (Jan., pg. 21.)

Alberta Central Ry.—The Board of Railway Commissioners has extended to July 1 the date by which the branch line at Rocky Mountain House, Alta., may be completed. (Dec., 1910, pg. 1013.)

Alberta Northwestern Ry.—A company with this title was incorporated by the Alberta Legislature in 1906, to build railways from Edmonton to Peace River, and from Edmonton to the International boundary, via Medicine Hat. It has been granted an extension of time for construction on several occasions, the latest being at the last session of the Legislature. (Dec., 1910, pg. 1013.)

Alberta Pacific Ry.—The Alberta Legislature, at its last session, changed the name of the Pincher Creek, Cardston and Montana Ry. Co. to that of the Alberta Pacific Ry. Co., and granted an extension of time for construction. A clause was inserted providing that a 30 mile section of the line has to be started at once. The annual meeting of the company was held at Pincher Creek, Alta., Jan. 2, when ordinary routine business was transacted. O. E. Culbert, Pincher Creek, is Secretary.

Plans for the projected railway from Pincher Creek to the International boundary are reported to have been approved by the Alberta Government, and it is said that further consideration is to be given to the plans for the line in the vicinity of South Kootenay Pass. (See Pincher Creek, Cardston and Montana Ry., Dec., 1910, pg. 1015.)

Alberta Western Ry.—The Alberta Legislature last session incorporated a company with this title to build railways in the province, with Lloydminster as a centre. The notice of application gave the proposed title of the company as the Lloydminster and Northwestern Ry., but it was changed to the above in passing through the Legislature. It is understood that the interests promoting this line are also behind the application being made to the Dominion Parliament for the incorporation of a company to build lines from Lloydminster to Fort McMurray, to Hudson Bay, to the International boundary at Milk River, Alta., and other points. (See Lloydminster and North Western Ry., Dec., 1910, pg. 1015, and Lloydminster to Fort McMurray, Jan., pg. 23.)

Algoma Central and Hudson Bay Ry.—The main line extends from Sault Ste. Marie to mileage 68, just beyond the crossing of the Chippewa River. From that point to the Montreal River the grade completed some years ago has been cleared up, and track will be laid, so as to get on with bridge construction over the Batchawana and Montreal rivers. Some grading was done beyond that point some years ago, and this is now being cleaned up and completed to Hawk Lake Jct., mileage 164.25. The route winds around between the Montreal and the Agawa rivers, and then follows the canyon of the Agawa River, keeping on the east bank, until clear of the canyon, and then proceeds in an almost straight line to Hawk Lake Jct., crossing the Michipicoten River, close to the mouth of the Shequamka River. From this point the line is under construction almost in a straight line to Hobon, on the C.P.R. transcontinental line, mileage 194.5. Track was laid in 1910 on the extension at the south end from mileage 69 to 81.6, and at the north end from mileage 170.5 to mileage 151.5, making altogether 31.6 miles of new track laid on the main line. Between Sault Ste. Marie and Hawk Lake Jct. there is only one short branch, at mileage 39.43, to the Superior Copper Mine.

From A Chief Engineer of Surveys and Construction.

Canadian Northern Pacific Railway,
Office of the Chief Engineer,
Vancouver, B.C., Jan. 4, 1911.

My Dear Burrows,—I am sending you today the information asked for on your new form, which makes it easier to keep you posted.

Knowing how much pains you always have taken to have your paper absolutely reliable, and considering the great amount of information interesting to railway men in all the departments which it always contains, I am glad to do what little I can to help. I feel that my subscription is quite inadequate to the value I receive in being kept in touch with all that is going on, connected with railways all over Canada, as well as with the men engaged in doing it.

Yours very truly,
T. H. WHITE.

The Michipicoten branch has been in operation for some years, and extends from Michipicoten Harbor, on Lake Superior to Hawk Lake Jct., about 20 miles, with the following spur lines: To Helen Mine, 1.96 miles; to Magpie mine, 9.08 miles; to Josephine mine, 0.96 mile. The spur to the Magpie mine was built during 1910, and an extension of 4.4 miles is being built. The O'Boyle Construction Co., Sault Ste. Marie, Ont., has the contract.

The Ontario Government is being asked to provide for an extension of time within which the lines under construction may be completed.

A Sault Ste. Marie press report states that two survey parties are shortly to be put in the field, to assist the one already at work on the location of an extension from Hobon, on the C.P.R., to a junction with the National Transcontinental Ry., a distance of 106 miles. (Jan., pg. 21.)

Atlantic, Quebec and Western Ry.—The Board of Railway Commissioners has authorized the company to open for traffic the portion of its line between Newport, mileage 35, and Grand River, mileage 51.5, and has approved plans for station buildings at St. Adelaide de Pabos, Grand River and Cape Cove, Que.

The Receiver in charge of the estate of the Charing Cross Bank, London, Eng., which was financing the construction of the line, is quoted as having stated that about 25% of the line to Gaspe had yet to be completed, and that the work would be continued during the present year. (Jan., pg. 21.)

British Columbia and Alaska Ry.—The President, J. Wolkenstein, and G. C. Moore, of New York, spent some time in Vancouver, B.C., in Dec., 1910. In an interview, the President stated that financial arrangements necessary for starting construction during 1910 had been completed, and that the company had secured power to build a line in Alaska, in continuation of the Canadian section. (Dec., 1910, pg. 1027.)

British Columbia and Alberta Ry.—See Northern Empire Ry.

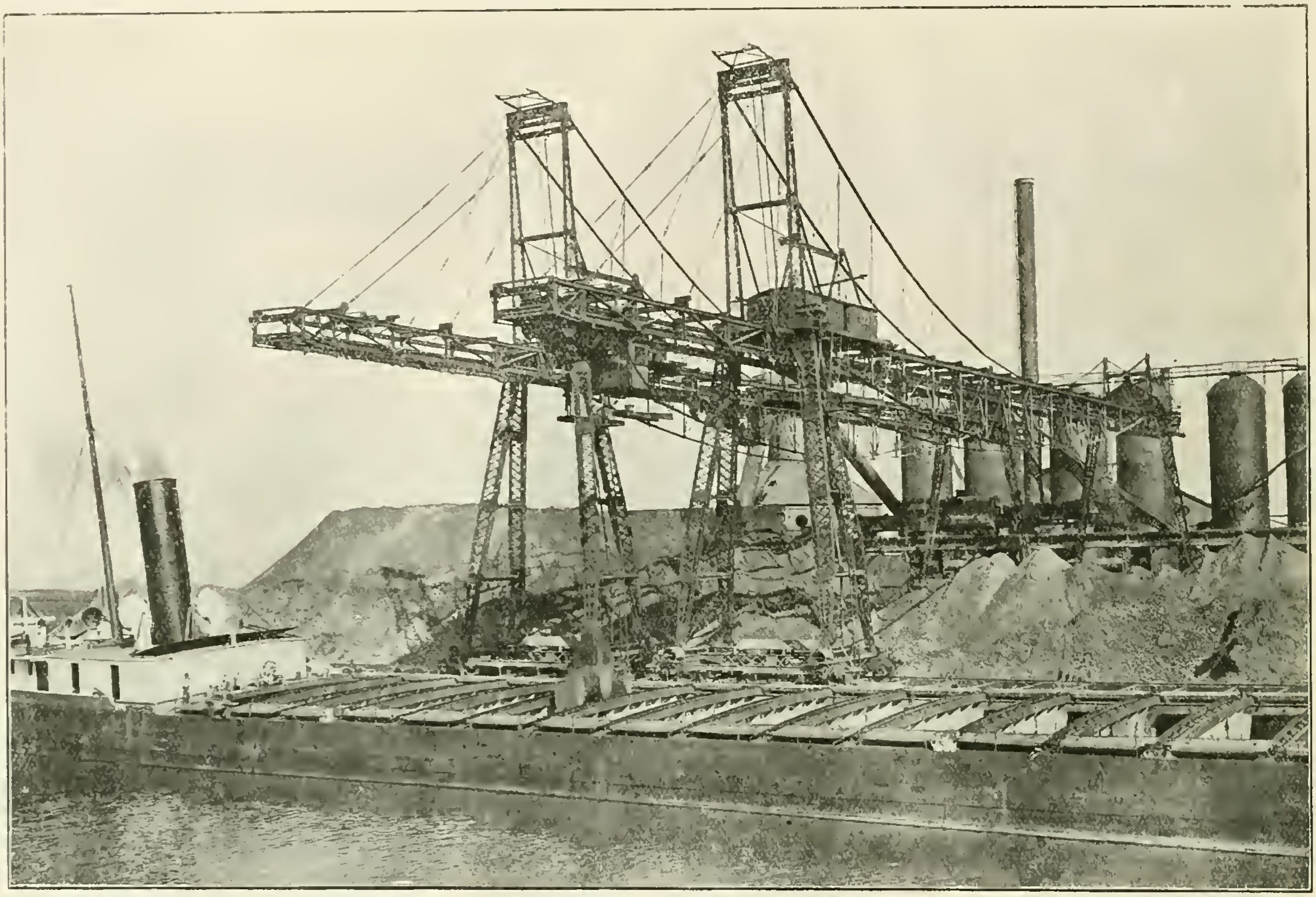
Burrard Inlet Tunnel and Bridge Co.—A proposition is under consideration by the city of Vancouver for taking $200,000 of shares in this company, towards the erection of a bridge across the Second Narrows of Burrard Inlet. The plans for the bridge have not been made public, but it is said that the span over the deepest part of the channel will be 150 ft. long, and have its bottom chord 35 ft. above high water at the highest spring tides; while there will be a 450 ft. span adjoining. The borings for the foundations show that it will only be necessary to clear away a few feet of deposit before reaching solid rock. (Jan., pg. 21.)

Canada and Gulf Terminal Ry.—The first section, extending from Ste. Flavie, on the Intercolonial Ry., to Matane, Que., 36 miles, was opened for traffic Dec. 29. A charter for building this line was originally granted to the Gaspesian Ry. Co. in 1883, but nothing was done. In 1902, the name of the company was changed to the Matane and Gaspe Ry., and a new charter obtained, and subsequently the name was changed to the C. and G.T. Ry. About two years ago the company was reorganized, and construction was started, the contract being let to H. Doheny, Montreal. Tracklaying was started May 7, 1910, and the completed section was taken over by the company for operation Dec. 7. The chief settlements secured by the line are Grand Metis, Little Metis, Sandy Bay, Riviere Blanche, Tessierville, and Matane, at which point the St. Lawrence is about 30 miles wide. The line is built to a high standard, and the track is laid with 80 lb. steel, with steel bridges over the larger rivers. The present rolling stock consists of three locomotives, two passenger coaches, 15 box cars, and 30 flat cars.

Surveys are being made for an extension from Matane easterly to Gaspe Basin, 178 miles, and it is proposed at an early date to have surveys made for an extension westerly from Ste. Flavie to St. Eleuthre, on the National Transcontinental Ry., about 100 miles. (Jan., pg. 21.)

Chestermere and Calgary Suburban Ry.—The Alberta Legislature at its last session incorporated a company with this title to build a railway to be operated by "electricity or by any other motive or mechanical power" from Calgary to Chestermere Lake, in tp. 24, range 28, west of the fourth meridian. E. F. Ryan, Calgary, Alta., was solicitor for the applicants.

Chibougamou, Que.—The report of the investigation into the resources of



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the Chibougamou district of Quebec, with a view to the building of a railway by the Quebec Government was laid before the Legislature Jan. 9. The Commissioners say that having weighed all the evidence collected "they cannot find the mineral deposits so far discovered are of sufficient merit to justify the spending of public money on the building of a railway as proposed from Lake St. John to Lake Chibougamou." (July, pg. 547.)

Chicago, Milwaukee and Puget Sound Ry.—There have been some purchases of large areas of land along the Fraser River, in the vicinity of Westminster Jct., reported recently, and it is stated that the purchaser is the C.M. and P.S. Ry. That company has secured a right of way for a line to the International boundary, and has been on the lookout for some time for a suitable property at deepwater in the vicinity of Vancouver for yards, warehouses, wharves and other terminal facilities. The reports state that the whole water front, from the Industrial cannery to Toby Island, a distance of two miles, has been purchased or is under option, that some 240 acres of other lands have been purchased, and that options have been obtained on about 300 acres additional. The reports further state that it is proposed to build a bridge across the river from Sunbury. (Jan., pg. 21.)

The Diamond Coal and Ry. Co. laid some additional switches at its collieries at Diamond City, Alta., during 1910, and has under construction an additional mile and a half of switches, also at the collieries. Its line extends from Diamond City to Kipp, Alta., on the C.P.R. (Nov., 1910, pg. 909.)

Dominion Central Ry.—The Dominion Parliament is being asked to extend the time for the construction of this projected railway authorized by chap. 90 of the statutes of 1904. The company desires to increase its bonding powers to $50,000 a mile. The application during the session of 1909-10 fell through. (Dec., 1909, pg. 881.)

The Empire Coal and Tramway Co.'s property and rights have been taken over by the Atlantic Coal Co., which has been organized under the Dominion Companies Act, with a capital of $290,000. The directors are: J. B. Shaffner, Halifax, N.S.; J. B. Sherry, Memramcook, N.S.; T. Nagle, P. M. O'Neill, S. E. Elkin, St. John, N.B.; J. H. Harris, Moncton, N.B.; W. S. Montgomery, Dalhousie, N.B. The colliery which the company is at present working is situated on the Maritime Coal, Ry. and Power Co.'s line, near Maccan, N.S., and it is not likely, therefore, that the company will undertake the building of any railway lines.

Essex Terminal Ry.—An additional mile of track between Walkerville and Windsor, Ont., was laid on this switching railway during 1910. No additional construction work is in hand or in contemplation at present. (Dec., 1910, pg. 1013.)

Ha Ha Bay Ry.—During 1910 the company laid 25 miles of new track, 20 miles being on the line from Chicoutimi to Bagotsville, Que., and five miles from Chicoutimi to Mathias station. A branch from the main line to Laterriere village, seven miles, is under construction, the contractors being Boulianne and Boulianne. Surveys are being made for a line from Mathias station to Roberval, on Lake St. John, 120 miles. J. F. Grenon, Chicoutimi, Que., is Chief Engineer.

The Quebec Public Utilities Commission has authorized the opening for traffic of the line between Chicoutimi and St. Alphonse, Que., 18.10 miles, subject to certain conditions as to the provision of safety switches, etc., and permitting a junction with the Quebec and Lake St. John Ry. at Chicoutimi, subject to an arrangement between the two companies. (Aug., 1910, pg. 627.)

Halifax and Eastern Ry.—A New Glasgow, N.S., press report says:—"It is now reported that the construction of a trunk railroad from Dartmouth to Guysboro via the Musquodoboit and St. Mary's Valleys, is to be abandoned, and the provincial government will make an effort to get the Dominion Government to build a spur of the Intercolonial into Musquodoboit and another from New Glasgow to Guysboro." (Jan., pg. 21.)

High River and Hudson's Bay Ry.—The Alberta Legislature last session incorporated a company with this title to build a railway as previously described. (Dec., 1910, pg. 1013.)

The Howe Sound and Northern Ry. is reported to be under construction from Newport, at the head of Howe Sound, B.C., in the direction of Pemberton Meadows. Some track is reported to have been laid, and the line is being used for logging purposes. A press report states that J. D. Nelson is engineer in charge of a party engaged in making a survey between Anderson and Seaton Lakes, and that the party started from some westerly point, and is working towards Lillooet. (Aug., 1910, pg. 627.)

Intercolonial Ry.—The lines under construction are:—A diversion of 8.28 miles from Nelson to Chatham, N.B., the contractors for which are Morrison and Clarke, Summerside, P.E.I., and a diversion of 9.2 miles between George River and Sydney Mines, N.S., the contractor for which is D. G. Kirk, Antigonish, N.S. (Dec., 1910, pg. 1015.)

International Ry. of New Brunswick.—The accounts of the province for the year ended Oct. 31, 1910, show that $43,000 was paid on account of the subsidy of this line. (Jan., pg. 23.)

Kamouraska and L'Islet Ry.—The Quebec Legislature is being asked to incorporate a company with this title to build the following lines:—From Ste. Anne de la Pocatiere to the Intercolonial Ry., southerly to the National Transcontinental Ry. in the parish of St. Perpetue, and on to a junction with the Quebec Central Ry. in L'Islet county; from Ste. Anne de la Pocatiere northerly to Pointe Riviere Ouelle, and on to the wharf there, making a junction with the Intercolonial Ry. branch line. A. Stein, Fraserville, Que., is attorney for applicants.

Kettle Valley Lines.—In addition to the powers previously announced as being applied for at the current session of the Dominion Parliament, the Kettle Valley Ry. is asking authority to build a railway to Allison or Princeton in the Similkameen Valley, B.C., and thence to the Granite Creek coal areas, near the junction of Granite Creek with the Tulameen River. Authority is also being asked to change the name of the company to the Kettle Valley Ry. Co.

The Board of Railway Commissioners has approved of the location of the extension of the line, now under construction, from station 0 to station 513, division 1A, west of Midway, B.C. The construction programme in Canada includes the building of about 250 miles of line, connecting up the existing line at Midway to Merritt, B.C., of which there are under contract a ten mile section from Midway to Rock Creek, which had been partially graded by the old Midway and Vernon Ry., and a 30 mile section from Merritt to the Coldwater summit. The contractors are L. M. Rice & Co., at Midway, and Macdonell, Gzowski & Co. at Merritt. Press reports in Dec. stated that track had been laid between Midway and Rock Creek, and that it was expected to lay a further ten miles by the end of the year, but we were advised, Jan. 6, that no track had been laid.

The United States end of the line is the Spokane and British Columbia Ry., which has in contemplation the building of a line from Republic, the present southerly terminus of the line, southerly to Spokane, Wash., 140 miles. (Jan., pg. 23.)

London and Port Stanley Ry.—The mayor of London, Ont., who, by virtue of his office, is President of the L. and P.S. Ry., in his inaugural address, Jan. 9, suggested that the question of the use of electricity as motive power be considered at an early date. This matter was of importance in view of the fact that the lease to the Lake Erie and Detroit River Ry. (Pere Marquette Rd.) will expire Jan. 1, 1914. (July, 1910, pg. 549.)

Manitoulin and North Shore Ry.—The extensions for which tenders are under consideration. will connect up the section completed between Sudbury and Crean Hill, Ont., and the 61 mile section under construction from Whitefish Bay to Little Current, on Manitoulin Island. The contract is being let in two sections, from Crean Hill, mileage 22.7, from Sudbury to Espanola, mileage 44.5, and from Espanola to mileage 61 at Whitefish Bay. The first of these two sections is on a revised location, and is some miles shorter than the route originally surveyed. The maximum gradient is 1.25, compensated at the rate of 0.04 per degree for curvature, the maximum curvature being 10 degrees. The bridge structures over the rivers and the large openings will be of steel on concrete abutments, but temporary timber structures will be erected. The location plans show that the line will trend southerly from Crean Hill, and run between the Spanish River, and the C.P.R. crossing that line west of Nairn Centre, and crossing the Spanish River some distance south of the C.P.R. The Vermillion River will be crossed west of the point where the Spanish River runs in, and the old location will be joined at Tullock Lake. The alternate location, starting from Crean Hill, will run through the northern portions of Denison and Drury tps., and southerly and westerly through Hyman and Baldwin tps. to Espanola, on the C.P.R., crossing that line and working southerly and easterly to Tullock Lake. From that point the line will run between Anderson and Loon lakes, past Raven Lake, crossing the northwest corner of the Indian reservation, and entering the reservation again south of Charlton Lake, to the Indian village at Whitefish.

A locomotive repair shop has been built at Clara Belle Jct., just outside of Sudbury, Ont. (Jan., pg. 23.)

The Michigan Central Rd. is building a bridge over the Welland Canal at Welland, Ont. It is a double track structure of the Baltimore truss centre bearing swing type, having a total length of 260 ft. centre to centre of end bearings, 35 ft. chords, 42 ft. chords on tower, and 31 ft. 8 in. centre to centre of trusses. Its weight complete is about 1,000 tons, and it will be swung by electric power. The foundations are of concrete, 0 ft. deep, using coffer dams, and the superstructure will be erected on falsework. Temporary trestles have been erected around the side of the old bridge to carry the traffic during the construction of the new bridge. The cost is estimated at $300,000. (Nov., 1910, pg. 911.)

Montreal and Northern Colonization Ry.—Application is being made to the Quebec Legislature to incorporate a company with this title to build a railway, to be operated by steam or electricity, from Montreal north and northwesterly, "up to a point to be fixed by engineers and approved by the Lieut.-

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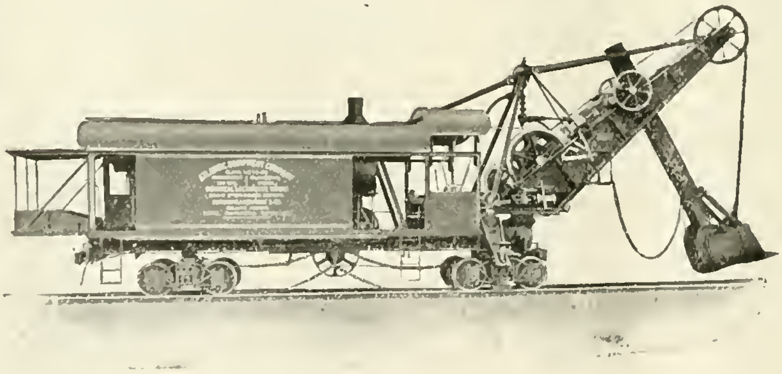

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Governor in Council." Geoffrion, Geoffrion and Casson, Montreal, are solicitors for applicants.

Montreal and Southern Ry. and Power Co.—The Quebec Legislature is being asked to incorporate a company with this title to construct "a steam or electric railway," from Caughnawaga, southwesterly to the International boundary near St. Francis, Que., "to develop water powers and electricity, and to construct an artificial canal along the Beauharnois canal." Geoffrion, Geoffrion & Casson, solicitors, Montreal, are solicitors for applicants.

Montreal Central Terminal Ry.—A proposition has been laid before the Montreal board of control by C. L. Armstrong and J. M. Shanly, civil engineers, on behalf of the company. The board promised to give consideration to the proposals if they were submitted in writing, and accompanied by plans. (July, 1910, pg. 549.)

Naas and Peace River Ry.—The British Columbia Legislature is being asked to incorporate a company with this title to build a railway to be operated by steam, electricity or other motive power, from the head of Nasoga Gulf, up the Naas River, the Kitmacool River, the Babine River, the Neel-Kit-Kwa River, the Nation River, the Pine River, and through the Pine River pass to the eastern boundary of the province, and such branch lines as may be desirable. A. Martin, Victoria, B.C., is solicitor for applicants.

Naas and Skeena River Ry.—The British Columbia Legislature is being asked to incorporate a company with this title to build a railway from Groundhog Valley, down the south side of the Skeena River to its junction with the Slan Geest River, following that river to the fifth cabin on the Yukon telegraph line, and westerly to above Blackwater Lake and down Blackwater River to the Naas River, thence along Naas River to Naas Bay, with a branch line from the junction of the Skeena and Carrier rivers to Blackwater River. Barnard and Robertson, Victoria, B.C., are solicitors for applicants.

New Brunswick Coal and Ry. Co.—The financial statement of the province for the year ended Oct. 31, 1910, showed that there had been expended by the Commission on repairs to the N.B.C. & Ry. Co.'s line, $3,297.45. (Dec., 1910, pg. 1015.)

Northern Empire Ry.—Suit has been entered by H. Roy, Ottawa, against the N.E. Ry. Co. and its associated company, the British Columbia and Alberta Ry., and the directors, for $25,000 damages for breach of contract. Roy is a civil engineer and was practically the owner of the two charters named. It is alleged that C. W. Patton, one of the defendants, undertook to organize a company, Roy to receive $15,000 cash and certain stock. (May, 1910, pg. 353.)

Pacific and Hudson Bay Ry.—Application is being made to the Dominion Parliament to incorporate a company with this title to build a railway from Kimsquit at the head of Dean channel on the Pacific coast, northeasterly following the Dean River, Sigutla Lake, Kwalchola Lake, the Entiaco River and the upper Nechaco River to Fort Fraser, thence northeasterly to Fort McLeod, thence across the Parsnip River, through Pine River Pass and along the Pine River to Coalbrook, and Dunvegan and along the Peace River to Peace River Landing, thence easterly, passing the headquarters of the Bear River to the Athabasca River and Fort McMurray, thence crossing the Athabasca River and following the Clearwater and Churchill rivers to a junction with the proposed railway to Hudson Bay, south of Washalowaka Lake, and thence to Churchill or Nelson, on Hudson Bay. W. F. Brougham, Vancouver, B.C., is solicitor for applicants.

Pacific Coast Mines.—During 1910 the company built a line from Fiddicks Jct., on the Esquimalt and Nanaimo Ry., to its mines near South Wellington, B.C., 1.8 miles, and has under construction a mile of line from the main line to the low level at Boat Harbor. Surveys have been made for a branch from Port McNeill to Suquach, seven miles. S. H. Reynolds, Victoria, B.C., is Managing Director. (Jan., 1910, pg. 23.)

Peace River Great Western Ry.—The Alberta Legislature at its last session incorporated a company with this title to build a railway from Edmonton to the Peace River Pass, crossing the Athabasca River at Holmes Crossing, and skirting the west end of Lesser Slave Lake. (Jan., pg. 23.)

Pincher Creek, Cardston and Montana Ry.—See Alberta Pacific Ry.

Prince Edward Island Ry.—There is under construction a branch line from Harmony to Elmira, 9.9 miles, the contractors for which are Whitehead Bros., Fredericton, N.B.

Tenders were received to Jan. 17 for the supply of 20,000 cedar ties, 20,000 hemlock ties, and for a quantity of switch ties.

Prince Rupert and Port Simpson Ry.—Press reports state that surveys have been made for a line from Port Simpson to Prince Rupert, B.C., 27 miles. The surveys are said to show two summits between the terminals, one at Georgetown of 300 ft., and the second close to Prince Rupert, of 240 ft. The gradient to the Georgetown summit will be one per cent., and the other 1.8%, with a 1.2% gradient coming back to the harbor. (Aug., 1909, pg. 575.)

Quebec and Great North Western Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build the following railways: from Port Arthur, Ont., easterly to New Liskeard, to some point between Baskatong Lake and Maniwaki, Que., and on to Quebec city from about 75 miles west of Maniwaki northerly to a junction with the National Transcontinental Ry., and southerly via the valley of the Coulonge River to Ottawa, Ont.; from New Liskeard to the National Transcontinental Ry. east of Lake Abitibi, Ont.; from New Liskeard southerly to Timiskaming station on the C.P.R. from Mattawa, from the point of crossing the Missinaibi River to Michipicoten on Lake Superior, Ont. Power is asked to build branches of the above, such branches not to exceed in any one case 25 miles. E. J. Daly, Ottawa, is solicitor for applicants.

Quebec and New Brunswick Ry.—Application is being made to the Dominion Parliament to extend the time for the building of this projected railway. (July, 1910, pg. 549.)

Quebec Central Ry.—Some little time ago the roundhouse at L'Enfant Jesus, Beauce county, was destroyed by fire, and when the company started to rebuild it the municipality filed a complaint with the Public Utilities Commission. The municipality objects to the continuance of the roundhouse, tank and shunting yard. The Chairman and the engineer of the Commission visited the place Dec. 22, heard what was urged by the municipality, and will report.

The company has under survey an extension of its St. Francis branch from St. Sabine road, to which track was laid in 1910, to Cabano, Que., about 100 miles, and from Scotts to Quebec Bridge, about 19 miles. (Jan., pg. 1015.)

Quebec, Montreal and Southern Ry.—The Dominion Parliament is being asked to extend the time for the completion of the lines authorized to be built by chap. 150 of the statutes of 1906. (Aug., 1909, pg. 575.)

Richmond, Magog and Stanstead Ry.—Application is being made to the Quebec Legislature to incorporate a company with this title to build a railway from Richmond to Magog, thence to Stanstead Plain, and branch lines, not to exceed 20 miles in any one case, together with power to build a bridge across the St. Francis River between Richmond and Melbourne. Hurd, Fraser, Macdonal and Rugg, Sherbrooke, Que., are solicitors for applicants.

St. John River Valley Ry.—The cost of the surveys made on behalf of the New Brunswick Government for the projected railway from St. John to Woodstock, during the past season, is given in the provincial accounts for the year ended Oct. 31, 1910, as $19,290.46. (Jan., pg. 23.)

Shaw Lumber and Ry. Co.—Application is being made to the Saskatchewan Legislature to incorporate a company with this title, having power, among other things, to build the following railway lines:—From Shaw siding in tp. 45, range seven, west of the second meridian, southwesterly for a distance of about 30 miles to timber berth 981; a branch line from the above, at the southwest corner of tp. 44, range eight, west second meridian, for a distance of 15 miles to timber berth 960, in tp. 43, range ten; and from Shaw's Siding for a distance of 30 miles, to timber berth 960, in tp. 49, range seven. The application is signed by T. Shaw, Regina, Sask.

Skidegate to Indian Village.—In connection with the application to the British Columbia Legislature for the incorporation of a company to build a line on Graham Island, connecting up the above points, it is to be noted that the terminal point is at Naden Harbor, where the whaling and fishing company, in which Mackenzie, Mann & Co.'s interests are prominent, is building. (Jan., pg. 23.)

The Sydney and Louisburg Ry. during 1910 built one mile of track on a new location in substitution for a mile of old location, and relaid 1.5 miles of the Sydney branch with 80 lb. steel. It has under survey a branch from Balls Creek to Limestone Quarry, 1.5 miles, and a branch from Morien station to Birch Grove Mine, 2.5 miles. C. M. Odell, Sydney, is Resident Engineer. (Jan., pg. 23.)

Temiskaming and Northern Ontario Ry.—One half mile of track between mileposts 60 and 60½ represents the total additional track laid during 1910, but a second track was laid between Cobalt and North Cobalt, Ont., five miles. The contractor was A. J. McGar. A branch from Iroquois Falls, near Matheson, into the Porcupine country, 32 miles is under construction. In a recent interview the Ontario Minister of Public Works, said the steel will be laid to Frederick House by the end of March, and it is expected to reach the Mattagami River by the end of the year. If the developments west of that point warrant, a bridge will be built across the river and the line continued to Godfrey.

Montreal press reports that the G.T.R. or the G.T. Pacific Ry. is negotiating with the Ontario Government for a lease of the line are denied by the Premier of Ontario, and the Chairman of the T. and N.O. Ry. Commission, but it is said that the G.T.R. wishes to secure running rights over it.

The Chairman of the Commission stated Jan. 13 that about eight miles of the right of way of the Porcupine branch had been cleared, that there had been 2.5 miles of grading done, and that about 22 miles of the right of way had been marked out. (Jan., pg. 23.)

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The Toronto, Hamilton and Buffalo Ry.'s Chief Engineer and the city engineer of Hamilton had a conference Jan. 10 with respect to the operation of the line by electricity. The Chief Engineer, in an interview, said he had been directed to prepare plans and estimates as to the cost of electrification of the entire line from Hamilton to Welland, and Hamilton to Waterford, but he could not say anything as to the company's intention. The city engineer, in a subsequent interview, said at one time the T.H. and B. Ry. carried all the local passenger traffic between Brantford and Hamilton, but that it now nearly all went over the electric line, known as the Brantford and Hamilton Ry. He was of opinion that the T. H. and B.R. has an idea of operating the Hamilton-Brantford section of the line by electricity, obtaining power from the Hydro-Electric station at Dundas. (Jan., pg. 25.)

Western Alberta Ry.—The Dominion Parliament is again being asked to extend the time within which the company may build the lines authorized by chap. 90 of the statutes of 1898, as amended by subsequent acts in 1900, 1903, 1905 and 1908. Smith and Johnson, Ottawa, are solicitors for applicants. (Jan., 1909, pg. 23.)

The Western Canadian Lumber Co. is building a logging railway in the Comox district of Vancouver Island. As the timber is being cleared the land is being taken up for agricultural purposes, and a general traffic over the line is expected to be developed. (See Comox Ry. and Logging Co., Aug., 1910, pg. 627.)

Winnipeg to Springfield.—The Manitoba Legislature is being asked to incorporate a company to build the following lines of railway, which may be operated by electricity or other motive power:—From Winnipeg through the municipalities of St. Paul, Kildonan and Springfield, and from St. Boniface through the same municipalities. A. E. Hoskin, Winnipeg, is solicitor for applicants.

York and Carleton Ry.—No advance was made during 1910 with the projected extension of the line from Ryan Brook to Napidoggan, N.B., the divisional point on the National Transcontinental Ry., a distance of 9.5 miles, previously reported. (June, 1909, pg. 453.)

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Accidents on Canadian Railways.

During the year ended June 30, 1910, 615 persons were killed and 2,139 injured on Canadian railways, against 505 killed and 2,186 injured in the previous year. Of these 524 were killed and 1,441 were injured as the result of the movement of trains. Those killed included 60 passengers, 214 employes, 175 trespassers, 74 non-trespassers, and one postal clerk, and those injured included 270 passengers, 926 employes, 148 trespassers, 77 non-trespassers, and 20 postal clerks. In accidents caused otherwise than by the movement of trains, two passengers, 81 employes, and eight postal clerks were killed, and nine passengers, 679 employes and 10 postal clerks injured. From the movement of trains one passenger in every 598,243 was killed and one in every 132,943 was injured. One trainman in every 199 was killed, and one in every 33 injured; one trackman in every 550 was killed, and one in every 98 injured; one switch tender in every 181 was killed, and one in every 65 was injured. Through accidents at highway crossings 63 were killed and 61 injured; 28 being killed and 45 injured at urban crossings, while 35 were killed and 16 injured at rural crossings.

Railway Freight Statistics.

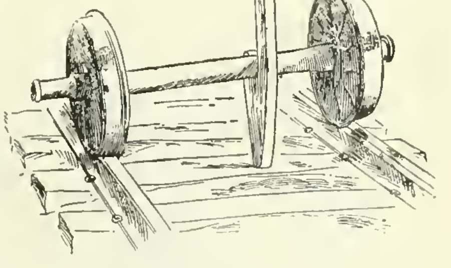
The aggregate tonnage of freight carried by Canadian railways during the year ended June 30, 1910, was 74,482,866 tons, against 66,830,019 tons in the previous year. Of the total tonnage 42,279,812 tons originated on the home roads, against 36,075,101 the previous year, and 32,203,054 tons were received from other lines, against 30,754,918 tons the previous year. The following table gives the details for the various lines:—

Name of Railway.	Tonnage originating on road.	Tonnage received from connecting roads and other carriers.	Total freight tonnage.
Alberta Railway and Irrigation Co......	72,170	105,920	178,090
Algoma Central and Hudson Bay.........	268,580	9,366	277,946
Atlantic and Lake Superior......	15,858	15,311	31,169
Atlantic, Quebec and Western	4,069	10,9 5	14,974
Bay of Quinte	78,145	80,952	159,097
Bedlington and Nelson.	6,542	58	6,600
Bessemer and Barry's Bay	24,975	....	24,975
Brandon, Saskatchewan and Hudson Bay....	66,263	360	66,623
British Yukon	23,744	....	23,744
Brockville, Westport and Northwestern	8,959	13,497	22,456
Canada Southern.......	692,134	6,060,113	6,752,247
CanadianGov Railways			
Intercolonial........	2,838,061	1,145,993	3,984,054
Prince Edward Island	103,100	....	103,100
Canadian Northern.....	2,987,236	822,620	3,809,856
Can. Northern Ontario.	389,194	42,067	431,261
Can. Northern Quebec..	292,218	348,839	641,052
Canadian Pacific......	14,456,851	6,094,517	20,551,368
Cape Breton	1.543	1,326	2,869
Caraquet............. .	16,384	9,334	26,218
Carillon and Grenville.	13	32	45
Central Ontario........	190,995	82,148	273,143
Crow's Nest Southern..	78,291	145,875	224,166
Cumberland Railway & Coal Co...	79,346	13,418	92,764
Dominion Atlantic.....	282,205	60,052	342,257
Elgin and Havelock....	10,394	3,137	13,531
Eastern British Columbia	111,162	1,326	112,488
Grand Trunk	6,088,300	10,663,043	16,751,343
Grand Trunk (Canada Atlantic)	1,117,820	417,164	1,534,984
Halifax and Southwest'n	189,876	23,974	213,850
Hereford......	162,202	3,026	165,228
Inverness Railway and Coal Co	280,365	10,293	290,658
Irondale, Bancroft and Ottawa	26,679	2,428	29,107
Kaslo and Slocan	14,834	247	15,081
Kent Northern.........	2,701	4,260	6,961
Kettle River Valley....	2,104	....	2,104
Kingston and Pembroke	79,134	27,849	106,983
Klondike Mines........	14,961	.. ..	14,961
Liverpool and Milton...	40,503	....	40,503
London & Port Stanley	296,202	190,100	486,302
Lotbiniere & Megantic	53,275	2,599	55,874
Manitoulin and North Shore	412,456	30	412,486
Maritime Coal Railway and Power Co........	190,566	8,734	199,300
Massawippi Valley .. .	125,039	368,680	493,719
Manitoba Great Northern	61,205	41,231	102,436
Moncton and Buctouche	21,031	8,224	29,255
Montreal and Atlantic..	143,048	967,516	1,110,564
Montreal and Province Line	15,187	58,618	73,805
Montreal and Vermont Junction	2,293	92,622	94,915
Morrissey, Fernie and Michel	554,515	18,634	573,149
Napierville Junction...	5,910	222,969	228,879
Nelson and Fort Sheppard	28,220	10,274	38,494
New Brunswick Coal and Railway Co...	56,967	10,670	67,637
New Brunswick & Prince Edward Island	26,875	9,425	36,300
New Brunswick South'n	20,108	454	20,562
New Westminster Southern.....	40,644	....	40,644
North Shore	8,173	....	8,173
Nova Scotia Steel and Coal Co.............	6,039	1,070	7,109
Orford Mountain... . .	22,472	4,534	27,006
Ottawa and New York.	40,821	100,665	141,486
Pere Marquette (in Canada)................	1,695,893	466,354	2,162,247
Philipsburg Railway & Quarry Co....	5,401	7,880	13,281
Princeton Branch of Washington Ry.......	160,474	....	160,474
Quebec Central	545,913	142,238	688,151
Quebec & Lake St. John	160,206	99,928	260,134
Quebec Ry. Light & Power Co.	103,248	8,069	111,317
Quebec, Montreal and Southern...........	62,238	210,808	273,046
Red Mountain.........	19,570	152	19,722
Rutland and Noyan....	222	170,722	170,944
Salisbury and Albert.. .	47,358	7,242	54,600
Schomberg and Aurora	5,349	2,839	8,188
Stanstead, Shefford and Chambly	2,996	117,301	120,297
St. Clair Tunnel..... .	....	....	....
St. Lawrence and Adirondack	10,237	659,327	669,564
St. Martins	16,155	2,560	18,715
Sydney and Louisburg (Dominion Coal Co.)	2,563,591	97,053	2,660,644
Spokane and British Columbia	14,603	632	15,235
Temiscouata	112,029	26,225	138,254
Temiskaming & Northern Ontario	367,056	325,331	692,387
Thousand Islands	15,179	19,334	34,513
Toronto, Hamilton and Buffalo............	190,902	1,452,817	1,643,719
Vancouver, Victoria and Eastern	1,153,398	4,340	1,157,738
Victoria & Sidney, B.C.	22,297	13,469	35,766
Victoria Terminal and Ferry Co............	7,022	27,230	34,252
Wabash Railway Co., in Canada	1,366,666	... .	1,366,666
Wellington Colliery Co.	375,572	2.988	378,560
York and Carleton ...	7,285	1,216	8,501
Total	42,279,812	32,203,054	74,482,866

◆

Lever for Lifting Car Wheels on Axles.

Sometimes it is necessary to turn a pair of car wheels in the shop, and this is a difficult matter without some means of raising the flange of one wheel over the rail. A lever cut from an old piece of scrap hard wood, as shown in the sketch, will make the job easy. The hook is placed under the axle and the wheel is raised by pushing against the lever. As the height of axles varies, the lever should be made to fit the lowest, and a plank or board may be used under the lever to adjust it for higher axles.—U. A. Towle, Portland, Me.



◆

Railway Lands Patented. — During Nov., 1910, letters patent were issued, covering Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Calgary and Edmonton Ry.	471.00
Canadian Northern Ry.	5,476.33
Canadian Pacific Ry. grants	1,116.838
Canadian Pacific Ry. grants, Souris Branch	252.00
Grand Trunk Pacific Ry.	326.26
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	800.00
Total	8,442.428

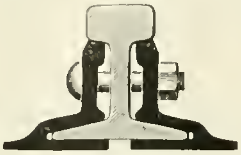
At the opening of the British Columbia Legislature recently, it was announced that among the new legislation proposed was a bill for the inspection of railway construction camps.

ADDITIONAL SAFETY AND ECONOMY IN

TRACK MAINTENANCE

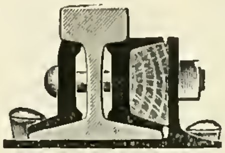
has been proved by the use of Continuous, Weber and Wolhaupter base-supported rail joints—after fifteen (15) years' service, having a record of over **50,000 miles in use**—the extent of which is evidence of their excellence. Made in Canada.

HIGHEST AWARDS
Paris, 1900;
Buffalo, 1901; St. Louis, 1904



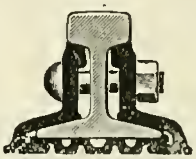
Continuous Joint

Over
50,000
miles
in use



Weber Joint

Rolled
from Best
Quality
Steel



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THE RAIL JOINT COMPANY OF CANADA, LIMITED

OFFICES: BOARD OF TRADE BLDG., MONTREAL, CAN.

Makers of Base Supported Rail Joints for Standard and Special Rail Sections, also Girder, Step or Compromise, Frog and Switch, and Insulating Rail Joints, protected by Patents.

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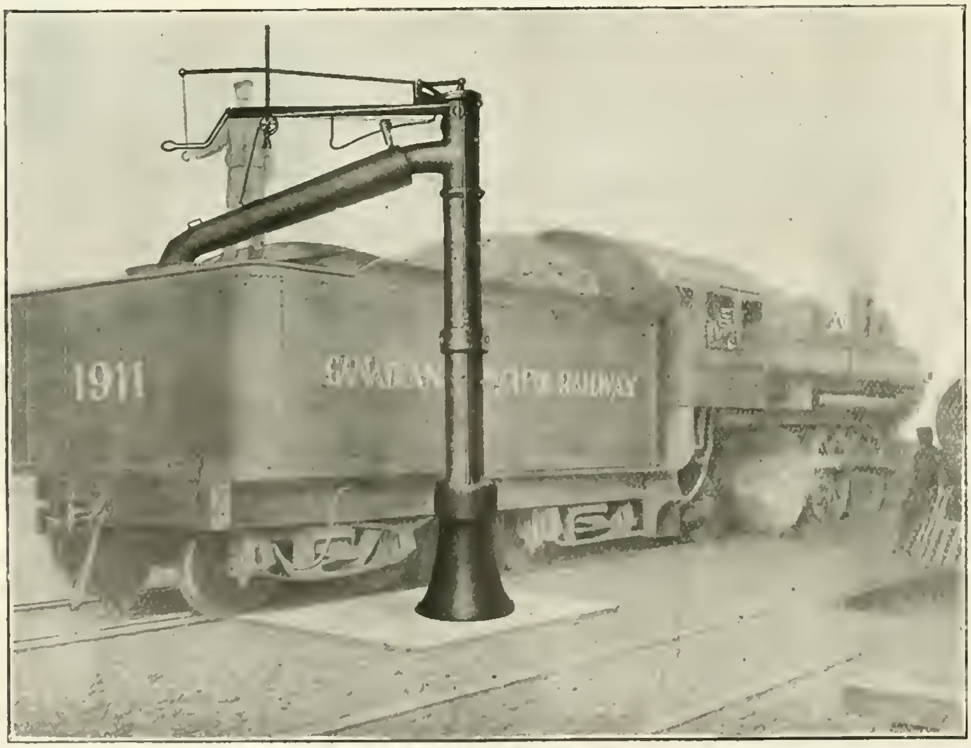

Telescopic Spout and Sheffield Type Valve

Operating rods outside of column when not in use automatically returns to and locks parallel with track.

Operated by one Man from Tender

SELF DRAINING
NON - FREEZING

In use on C. P. R., G. T. P. and I. C. R.

T. McAVITY & SONS, Limited, - St. John. N.B.

National Transcontinental Railway.

In a recent interview at Montreal E. J. Chamberlin, Vice President and General Manager G. T. Pacific Ry., said the last spike of the line from Moncton to Prince Rupert would be driven early in 1913. Whether this prediction will be realized is a matter upon which more than one opinion is expressed, but the reports from all parts of the line indicate that the work is being pushed forward with the object of having the entire line in operation by the fall of 1913. It is stated that while perhaps 166 miles from Moncton westerly may be opened for traffic during the current year, it will be well into 1912 before the line is ready for traffic to Point Levis. The 166 miles referred to carries the line from Moncton to McGivney Jct., where it crosses the Intercolonial Ry. Canada Eastern section, and beyond this point, there is a very heavy piece of bridge work across the Salmon River valley, the structure being 4,000 ft. long and 200 ft. high. Considerable progress has been made on the several contracts for the rest of the distance between Salmon River and Point Levis, Que., some sections having been completed, with the exception of ballasting, and others requiring the erection of bridge superstructures, before further track laying or ballasting can be done, while on some other sections there is a small percentage of grading to be done. During 1910, track was laid on an additional 130 miles, on the sections in New Brunswick, and some 30 miles of track has been laid between the New Brunswick boundary and Point Levis, while altogether in the district east and west of the Quebec Bridge track was laid on 135 miles, to about five miles west of Weymontachene. On the section north of the St. Lawrence River, a good deal of ballasting has been done, and the substructures for a number of the bridges are ready for the steel work. On the next district, east and west of Cochrane, Ont., and easterly from Graham (Lake Superior Jct.), track was laid on 172 miles during 1910. This makes 437 miles of track laid during 1910, which added to the 565 miles laid to Dec. 31 1909, makes a total of 1,002 miles of track laid, leaving 801 miles of line on which track has to be laid between Moncton and Winnipeg.

Replying to questions in the House of Commons Jan. 11, the Minister of Railways said the work of the arbitration board constituted to determine questions as to overbreak, overclassification, etc., on the eastern division of the N.T.R., had been completed, with the exception of making the award. The time occupied by the first board of arbitrators—H. D. Lumsden, B. B. Kelliher and C. Schreiber, C.M.G., in investigating the matter was 39 days, and the second board, on which G. Grant succeeded H. D. Lumsden, spent 58 days upon the investigation. On the following day, Jan. 12, the Minister stated that he expected to be able shortly to lay on the table the report of the arbitrators. Press reports from Ottawa, state that the amounts disallowed aggregate $400,000 of which $275,000 is on the Lake Superior Division.

Tenders have been asked by the Commissioners for the demolition of the buildings at Champlain market, Quebec, the site for the station building.

A return made to the House of Commons, Jan. 16, with respect to the Quebec Bridge, showed that the old company did not take any steps to notify the guarantee company of the failure of the contracting company to carry out its contract, on the collapse of the bridge, and that the notice subsequently given by the Government was not the "prompt notice" ,which the terms of the bond called for. The Government is therefore unable to collect the $100,000 mentioned in the bond.

GRAND TRUNK PACIFIC RAILWAY.

During 1910 the company laid 335 miles of new line, exclusive of second track and sidings, distributed as follows: Branch lines in Saskatchewan;—northerly from Melville, mileage 17 to Canora; southerly from Melville, from Balcarres to mileage 48; from Young to mileage 25, on the projected branch to Prince Albert; total in Saskatchewan, 77 miles; and mileage 879 on main line to Prairie Creek, Alta., and Tofield-Calgary line, from Camrose to Red Deer River; total in Alberta, 158 miles, and from Prince Rupert to Copper River, B.C., 100 miles. The lines under construction include the remainder of the main line from Prairie Creek to Copper River, 665 miles, of which about 400 miles is not yet under contract; and the following branch lines:—Melville to Regina, from mileage 48 to Regina, 48 miles; from Regina towards the International boundary, to mileage 90; from Regina westerly to Moose Jaw, 45 miles; Young to Prince Albert, from mileage 25 to Prince Albert—87 miles; from Oban to Battleford, 48 miles; Tofield-Calgary line, from Red Deer River to Calgary, 121 miles; from Bickerdike, Alta., southwesterly, 59 miles. In addition to these lines, surveys are being made from mileage 90, southerly from Regina to the International boundary, 52 miles.

Provision is being made for the enlargement of the yards at Edmonton, Alta., an additional area of about 20 acres having been acquired. The construction on the main line is expected to make rapid progress during the year, special efforts having been made by the contractors to obtain men for the work from Europe during the winter. On the branch lines it is expected that track will be laid into Regina by about July, and that the extension westerly to Moose Jaw and southerly towards the International boundary, will have some miles opened for traffic by the end of the year. It is reported that some surveys have been made for a line from Wainwright, Alta., to Battleford, Sask. The line to Prince Albert is expected to be completed this season. In connection with the Tofield-Calgary line, no further track laying will be proceeded with until the bridge at Lignite is completed. The bridge will be over 1200 ft. long, and 125 ft. high. A good deal of the concrete work has been completed, and the steel gang is at work. It is expected that the bridge will be finished during the summer and that track will be laid into Calgary by the end of the year. The plans for the entry into Calgary have been filed and show a route crossing the Bow River, about 200 ft. north of the C.P.R. bridge, and on to the R.N.W.M.P. barracks between Sixth and Seventh sts.

A branch from Edson to the Brazeau River coal fields is under construction and recent reports state that the right of way has been cleared for 55 miles, and that the grading outfits have reached mile 36. Surveys for the line from Fort George to Vancouver, B.C., continue, but no definite statement as to construction has been made. Land for terminal purposes is reported to have been purchased in Vancouver, and a passenger and ticket office is being built at Victoria. (Jan. pg., 37.)

◆

The Canadian Ticket Agents Association has admitted the following as members: J. Connolly, C.P.R., Cornwall, Ont; T. C. Lockwood, G.T.R., Brighton, Ont.; R. A. Harrison, C.P.R., Dunnville, Ont.; L. J. Rivet, C.N.Q.R., Montreal; G A. Boyd, C.P.R., Sault Ste. Marie, Ont.; W. R. Thom, N.N. Co., Sault Ste. Marie, Ont.; H. W. Sanders, C.P.R., Stouffville, Ont.

G.T.R. Betterments, Construction, Etc.

The Southern New England Ry. obtained power to build a line in Massachusetts and Rhode Island, in 1910, to give the Central Vermont Ry., which is controlled by the G.T.R., an outlet at Providence. To reach this line the C.V. Ry. has running powers over a section of the Boston and Maine Rd. in Vermont. The control of the B. and M. Rd. has recently passed to the New York, New Haven and Connecticut Rd., and this line has withdrawn the privilege of running rights. As a result the C.V. Ry. has applied to the Vermont Legislature for permission to build a 50 mile line paralleling the B. and M. Rd. in the State, over which it now has running powers.

Ottawa-Toronto Line.—We are advised that while there is no question but what the G.T.R. will eventually have a direct line from Ottawa to Toronto, there is nothing in contemplation at present. Press reports referring to this matter state that the new line from Ottawa to Toronto, instead of passing through Coteau Jct., as at first planned, would run almost direct from Ottawa to Brockville, and pass through Perth and Smiths Falls.

Deviation at Barrie, Ont.—The Board of Railway Commissioners has authorized a deviation from the existing line in Vespra tp., and on lot 5 east of Bradford St., Barrie, Ont.

Toronto Belt Line.—The section of the old Belt Line from Fairbank Jct., on the Toronto-North Bay line, easterly to Yonge St., was reopened for traffic recently.

Waterdown, Ont.—The Board of Railway Commissioners has authorized the replacing of the bridge across the tracks at milepost 0.45, west of Waterdown station, Ont., by a steel structure.

Niagara Falls to London, Ont.—Press reports dated Jan. 11 stated that the G.T.R. "will begin double tracking the section from London to Niagara Falls, 204 miles, and used 100 lb. rails." The G.T.R. has been operating a double track line between Montreal and Chicago, Ill., via Hamilton, Brantford and London, except for a few miles in Michigan, and from Hamilton to Niagara Falls for some years. Within the last three years it has been laying 100 lb. steel on certain sections of the double track line, and using the 80 lb. steel taken up elsewhere. This work is to be done between London and Niagara Falls during the current year.

Superintendent Bowker stated Jan. 12, that the relaying of the double track between Niagara Falls and London, will be started Mar 15, three gangs being employed, one working from each end, and the third at some intermediate point. It is expected that the work will be completed by the end of the year. A. Cordasco, Montreal, will provide the labor.

Guelph, Ont.—The city engineer has approved the company's plans for improvements at its station. The building will have a frontage on the tracks of 120 ft., with a depth of 43 ft. Two subways and a foot passage way will be provided under the tracks adjacent to the station, and additional sidings will be laid on a strip of land adjoining the Jubilee Park.

Branch Line at Mount Bruno, Que.—An order has been issued by the Board of Railway Commissioners for the building of a branch or spur line to Mount Bruno station, Que.

◆

The C.P.R. has offered a prize of $1,000 for the best hard red wheat produced from its irrigated lands in Alberta to be shown at land and irrigation fair at New York in Nov.

The Cars which are building the new
Railroads
of
Canada

The Cars which are maintaining the old
Railroads
of
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Agents for Quebec: Watson Jack & Co., 709 Power Building, Montreal

OFFICE AND WORK

ESPLANADE STREET EAST, TORONTO

Canadian Northern Ry. Earnings, Etc.

Gross earnings, working expenses and net profits from July 1,, 1910, with increases over, or decreases from, those of 1909-10 :

	Earnings.	Expenses.	Net. Earnings	Net Increase.
July	$1,225,100	$876,900	$348,200	118,600
Aug.	1,093,000	830,000	263,000	58,600
Sept.	1,279,900	898,700	381,200	69,700
Oct.	1,627,800	1,047,300	580,500	99,800
Nov.	1,565,400	1,006,500	558,900	11,500
	$6,791,200	$4,659,400	$2,131,800	$358,200
Inc.	$1,162,100	$803,900	$358,200	....

Approximate gross earnings for Dec. 1910, $1,255,400 and for two weeks ended Jan. 14, $372,000 agains $1,160,300, and $360,000 for same periods, 1909 and 1910 respectively.

◆

C.P.R. Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases over 1909-10, from July 1, 1910 :

	Earnings.	Expenses.	Net Profits.	Net Increase
July	$8,869,214.32	5,384,594.73	3,484,619.50.	1,004,748.86
Aug.	9,255,331.67	5,563,659.34	3,691,672.33	727,614.46
Sept.	9,315,213.67	5,403,614.03	3,911,599.64	479,710.47
Oct.	10,229,370.77	5,724,210.25	4,505,160.52	118,863.33
Nov.	9,413,238.22	5,676,115.96	3,737,122.26	44,784,31
	$47,082,368.65	$27,752,194.31	$19,330,174.34	$2,375,721.43
Inc.	$5,371,615.27	$2,995,893.84	$2,375,721.43	....

Approximate gross earnings for Dec., 1910, $8,603,000, and for two weeks ended Jan. 14, $2,503,000 against $8,112,000 and $2,657,000 for same periods 1909 and 1910 respectively.

DULUTH, SOUTH SHORE AND ATLANTIC RY.—Operating revenue for Nov., 1910, $257,525.93; operating expenses, $177,336.53; net revenue, $80,189.40, against $270,967.59 operating revenue; $193,187.57 operating expenses; $77,780.02 net revenue for Nov., 1909. Aggregate operating revenue for five months ended Nov. 30, 1910, $1,485,194.68; operating expenses, $959,081.65; net revenue, $526,113.03, against $1,483,377.76 aggregate operating revenue: $984,981.55 operating expenses; $498,396.21 net revenue for same period 1909. Approximate earnings for Dec., 1910, $233,192, and for two weeks ended Jan. 14, $97,821, against $235,080 and $91,877 for same periods 1909 and 1910 respectively.

MINERAL RANGE RD.—Operating revenue for Nov., 1910, $62,782.24; operating expenses, $65,369.10; net expenses, $2,586.86, against $70,838.12 operating revenue; $59,705.72 operating expenses; $11,132.40 net revenue for Nov., 1909. Aggregate operating revenue for five months ended Nov. 30, 1910, $314,941.15; operating expenses, $318,047.67; net expenses, $3,106.52, against $369,495.17 aggregate operating revenue; $308,188.37 operating expenses; $61,306.80 net revenue for same period 1909. Approximate earnings for Dec., 1910, $56,011, and for two weeks ended Jan. 14, $24,276, against $72,484 and $29,102 for same periods 1909 and 1910 respectively.

MINNEAPOLIS ST. PAUL AND SAULT STE. MARIE RY.—Operating revenue for Nov., 1910, $1,209,891.80; expenses and taxes, $759,701.49; operating income, $450,190.31, against $1,613,666.45 operating revenue; $790,740.86 expenses and taxes; $822,925.59 operating income for Nov., 1909. Aggregate operating revenue for five months ended Nov. 30, 1910, $6,161,759.74; expenses and taxes, $3,810,925.89; operating income, $2,350,833.85, against $7,547,707.71 aggregate operating revenue; $3,889,505.62 expenses and taxes; $3,658,202.09 operating income for same period 1909. Approximate earnings for Dec., 1910, $1,692,881, and for two weeks ended Jan. 14, $683,426, against $1,586,725 and $682,846 for same periods 1909 and 1910 respectively.

CHICAGO DIVISION.—Operating revenue for Nov., 1910, $769,205.09; expenses and taxes, $597,842.78; operating income, $171,362.31, against $720,135.71 operating revenue; $537,649.24 expenses and taxes; $182,486.37 operating income for Nov., 1909. Aggregate operating revenue for five months ended Nov. 30, 1910, $3,996,689.69; expenses and taxes, $2,925,948.77; operating income, $1,070,740.92, against $3,703,604.71 aggregate operating revenue; $2,490,302.81 expenses and taxes; $1,213,301.90 operating income for same period, 1909.

◆

Grand Trunk Ry. Earnings, Expenses, Etc.

The following figures show the earnings, expenses, etc., of the G.T.R., C.A.R., G.T. Western Ry., and D.G.H. & M.R. for Nov., 1910, and 1909, respectively:

GRAND TRUNK RAILWAY.

	1910.	1909.
Earnings	$2,989,500	$2,965,000
Expenses	2,340,100	2,209,000
Net earnings	$ 649,400	$ 756,000

CANADA ATLANTIC RAILWAY.

	1910.	1909.
Earnings	$ 176,700	$ 209,000
Expenses	138,800	143,000
Net earnings	$ 37,900	$ 66,000

GRAND TRUNK WESTERN RAILWAY.

	1910.	1909.
Earnings	$ 477,100	$ 492,000
Expenses	427,800	392,000
Net earnings	$ 49,300	$ 100,000

DETROIT, GRAND HAVEN AND MILWAUKEE RY.

	1910.	1909.
Earnings	$ 202,200	$ 173,000
Expenses	136,000	123,500
Net earnings	$ 66,200	$ 49,500

Approximate gross receipts for Dec., 1910, $3,857,822, and for two weeks ended Jan. 14, $1,506,798, against $3,564,380 and $1,379,910 for same periods 1909 and 1910 respectively.

TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate from July 1 to Dec. 31:—

	1910.	1909.
Grand Trunk Ry.	£3,696,455	£3,605,806
Canada Atlantic Ry.	199,456	227,217
G.T. Western Ry.	627,425	629,514
D G.H. & M. Ry.	218,388	215,591
Totals	£4,741,724	£4,678,128

◆

Great Northern Ry. Lines in Canada.

Manitoba Great Northern Ry.—A letter was received by the Winnipeg city clerk Dec. 27, 1910, stating that construction would not be proceeded with on the proposed yards, etc., in Winnipeg, before the spring.

Kaslo and Slocan Ry.—A resolution has been passed by the Kaslo, B.C., Board of Trade, asking the B.C. Government to cancel the charter, owing to the company's failure to live up to its obligations.

Victoria and Sidney Ry.—A station building has been erected on Blanchard St., Victoria, B.C., replacing the public market building, which had been used for some time.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—J. J. Hill, on the occasion of his recent visit to Vancouver, B.C., said it would be impossible at present to fix a time when the line would be completed, but it was being built from both ends. The difficult section was that through the Hope Mountains, and the engineers had, after a great deal of trouble and many surveys, found a feasible route, without having to bore an eight mile tunnel. It was an expensive piece of construction, however, and it would take time and money to put it through. As to the Vancouver terminals, work would be started immediately on the filling in of the north and east shores of the head of False Creek, and when this was done, the laying out of yards and the erection of the station and other terminal buildings would be taken in hand. The plans for the reclamation of False Creek were submitted to the Vancouver city council, Jan. 6, and after having been approved will go to the Board of Railway Commissioners. (Jan. pg. 17).

◆

Atlantic, Quebec and Western Ry.—Quebec Oriental Ry., etc.—Notice was given in the House of Commons, Jan. 11, of a motion asking for copies of all correspondence of every description between the liquidators of the Charing Cross Bank or of A. W. Carpenter, or any one on their behalf, or any member of the government or official thereof, regarding the affairs of the A.,Q. & W. Ry., the Quebec Oriental Ry., or the New Canadian Co., Limited. Hon. R. Lemieux, Postmaster General, who returned from England Jan. 17, said there was no truth in the reports as to his connection with these railways, and it was his intention to make a statement on the subject in the House of Commons shortly.

Duty on Re-Rolled Steel Rails.

The Dominion Government passed an order in council, Dec. 23, 1910, stating that it being satisfied that a mill had been established in Canada, adapted and equipped for re-rolling in substantial quantities rails for railway tracks weighing not less than 56 lbs. per lineal yard when re-rolled, the customs duty specified in the Customs Tariff 1907, item 388a, be abolished upon publication of the order, and that thereafter all such rails, when imported, shall be subject to such duty as otherwise provided in the tariff.

Item 388a reads as follows:—

"Iron or steel railway bars or rails, which have been in use in the tracks of railways in Canada, and which have been exported from Canada and returned thereto after having been re-rolled, and weighing not less than 56 lbs. per lineal yard when re-rolled, and which are to be used by the railway company importing them on its own tracks, under regulations prescribed by the Minister of Customs. Provided that the value for duty of such re-rolled rails shall be the cost of re-rolling the same. Provided also that whenever the Governor in Council is satisfied that a mill adapted and equipped for re-rolling such rails in substantial quantities has been established in Canada, the Governor in Council may by order in council, to be published in the Canada Gazette, abolish the duty specified in this item, and thereupon all such rails when imported shall be subject to such duty as otherwise provided in the Customs Tariff."

Under the foregoing item the duty was 25%, being the same under the British preferential, the intermediate and the general tariff. By the abolition of that item, the duty will be under the British preferential tariff, $4.50 a ton, under the intermediate tariff $6 a ton, and under the general tariff, $7 a ton.

The mill referred to in the order in council is that of the Provincial Steel Co., Ltd., at Cobourg, Ont., of which A. L. Reading is Manager.

◆

Recent Alberta Legislation.

At the last session of the Alberta Legislature the following acts affecting steam and electric railways were passed:

Alberta and Great Waterways Ry.—Respecting alleged claims in connection with the company, and a second respecting the guarantee of the company's bonds.

Alberta Northwestern Ry.—Amending act of incorporation.

Alberta Pacific Ry.—Changing name of the Pincher Creek, Cardston and Montana Ry., and extending time for construction.

Alberta Ry. and Irrigation Co.—Providing for registration of a transfer of Galt Park from the company to the city of Lethbridge.

Alberta Western Ry.—Incorporation.

Chestermere and Calgary Suburban Ry.—Incorporation.

High River and Hudson Bay Ry.—Incorporation.

Edmonton Interurban Ry. — Incorporation.

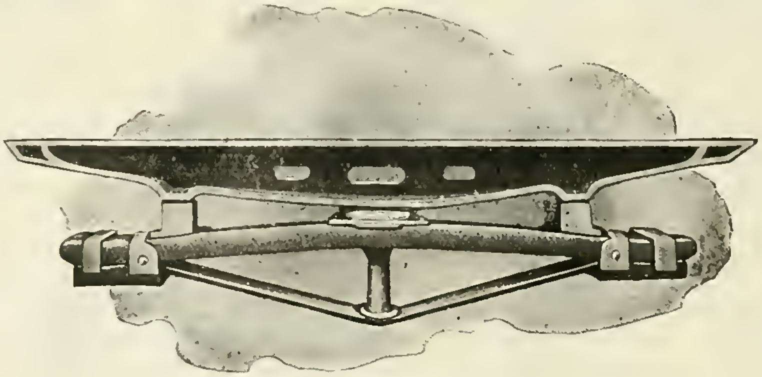
Lacombe and Blindman Valley Electric Ry.—Extending time for building authorized lines.

Lacombe, Bullocksville and Alix Electric Ry.—Extending time for construction.

Peace River Great Western Ry.—Incorporation.

◆

The Canadian Society of Civil Engineers' Toronto Branch, at its annual meeting, Jan. 8, elected the following officers for the current year: Chairman, Prof. E. T. Haultain; Secretary, A. C. D. Blanchard; Executive Committee, T. C Irving, Jr., P. Gillespie, E. A. James, W. E. Douglas and G. G. Powell.



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Orders by the Railway Commissioners.

Beginning with June, 1904, we have published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the hearing took place and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the date assigned to them

12504. Dec. 9.—Ordering G.T.R. to establish and maintain tri-weekly passenger service between Ste. Martine and Beauharnois, Que., effective Jan. 1, 1911; to remove weeds and other combustible matter from right of way between those points and provide station and agent at Beauharnois.

12505. Sept. 17.—Ordering city of Calgary, Alta., to repay C.P.R. half cost of building bridge over C.P.R. yard there.

12506. Sept. 15.—Dismissing C.P.R. application for approval of station location at Kipp, Alta.

12507. Dec. 12.—Authorizing city of St. Boniface, Man., to lay sewer under C.P.R. on Mission St.

12508. Dec. 16.—Authorizing C.N.O.R. to build bridge over Riviere des Milles Isles, between Two Mountains and Laval counties, at mileage 37.9, from Hawkesbury.

12509. Dec. 15.—Authorizing Ontario Hydro-Electric Power Commission to use its wires erected at eight points.

12510. Dec. 13.—Authorizing C.P.R. to build spur and siding for Lethbridge Collieries, Ltd., across road allowance on west boundary, s.w. ¼ sec. 21, and across said ¼ sec., and s.e. ¼ sec. 21, tp. 9, r. 22, w. 4 m., Alta.

12511. Dec. 16.—Authorizing city of St. Boniface, Man., to build Marion St. across C.P.R. Emerson branch.

12512. Dec. 15.—Ordering White Pass & Yukon Route and British Yukon Ry. to permit J. H. Conrad to load ore where he had previously been permitted to load it, at or near Caribou crossing, until application for siding is disposed of or same is built.

12513. Dec. 6.—Dismissing application of White Pass and Yukon Route for re-hearing as to order 11819, Sept. 7, 1910, re J. H. Conrad's complaint, alleging excessive freight rates charged by White Pass & Yukon Route on ores from Carcross to Skaguay and on mining machinery and camp supplies from Skaguay to Carcross.

12514 to 12516. Dec. 9.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across C.P.R. telegraph wires in Brantford tp., and Bell Telephone Co.'s wires in Wilmot and Etobicoke tps.

12517. Dec. 13.—Authorizing S. Hamilton, Amaranth tp., Ont., to lay pipe under C.P.R.

12518. Dec. 12.—Authorizing Niagara, St. Catharines & Toronto Ry. to erect trolley wires across M.C.R. and T.H. & B.R., in Welland, Ont.

12519. Dec. 12.—Authorizing C.P.R. to open for traffic its second track in Lambton, Ont., to east end of bridge over Etobicoke River, mileage 6.6 to 8.6.

12520. Dec. 10.—Ordering C.P.R. and C.N.R. to publish and file new freight tariffs, to take effect not later than Apr. 1, 1911, removing discrimination existing to points in Manitoba, Saskatchewan and Alberta, from Fort William, Port Arthur and points east, in favor of Winnipeg and other points in Manitoba, and against points west thereof, by reducing rates from Fort William, Port Arthur and points east to Regina, and Moose Jaw, Sask., and other points west of the said favored points.

12521. Dec. 13.—Authorizing C.P.R. to build three spurs for West Canadian Collieries, Ltd., at Bellevue, Alta.

12522. Dec. 12.—Authorizing C.N.R. to build across nine highways in r. 20, 21 and 23, w. 2 m., Sask.

12523. Dec. 16.—Authorizing C.P.R. to build two tracks across McKellar and Duncan Sts., Fort William, Ont.

12524. Dec. 13.—Authorizing C.N.R. to build bridge over Red Deer River, sec. 9, tp. 29, r. 20, w. 4 m., Alta.

12525. Dec. 12.—Ordering C.P.R. to provide means whereby water brought down by it on to the lands of Amos Morgan, situated on lot 1, con. 9, on the town line between Rawdon and Huntingdon, near Crookston, Ont., may be carried off.

12526. Dec. 16.—Authorizing C.P.R. to build two tracks across road allowance on east boundary of s.e. ¼ sec. 20, tp. 8, r. 14, w. 2 m., at Weyburn, Sask.

12527. Dec. 12.—Authorizing C.P.R. to build additional track across road allowance between n.e. ¼ sec. 2, tp. 17, r. 11, w. 3 m., and n.e. ¼ sec. 1, tp. 17, r. 11, w. 3 m., at Rush Lake, Sask.

12528. Dec. 14.—Authorizing Western Fuel Co. to lay pipe under Esquimalt & Nanaimo Ry., near Nanaimo, B.C.

12529. Dec. 16.—Extending to July 1, 1911, time within which C.P.R. may build spur across Jarvis St., Winnipeg.

12530. Dec. 12.—Authorizing G.T.R. to replace by iron bridge present bridge carrying highway between lots 8 and 9, con. 1, East Flamboro tp., over its tracks at mileage 3.77, west of Waterdown station, Ont.

12531. Dec. 12.—Dismissing application of city of Hamilton, Ont., for order directing T.H. & B. Ry. to provide protection at retaining walls built by company at east end of its tunnel on Hunter St.

12532. Dec. 12.—Approving proposed deviation of G.T.R. as already constructed between n.e. ¼ lot 21, con. 12, Vespra tp., and lot 5, east of Bradford St., Barrie, Ont.

12533. Dec. 12.—Amending order 10055, Mar. 22, 1910, by providing that gates at Tillson Ave. crossing, Tillsonburg, Ont., be operated day and night, cost to be borne, 10% by the town and 90% by the company.

12534. Dec. 12.—Authorizing C.N.O.R. to build branch in Trenton across certain streets and through Gilmour Door Co.'s property to junction with Central Ontario Ry.

12535. Dec. 12.—Authorizing Consumers Gas Co. to lay pipe under G.T.R. on Ellis Ave., Toronto.

12536. Dec. 17.—Authorizing Niagara, St. Catharines & Toronto Ry. to erect trolley wire across G.T.R. at Port Colborne, Ont.

12537. Dec. 17.—Authorizing N. St. C. & T. Ry. to erect trolley wires across G.T.R. at station 13.91 miles from Thorold, Ont.

12538. Dec. 16.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across Bell Telephone Co.'s wires at lot 1, con. 3, Downie tp.

12539. Dec. 17.—Authorizing C.P.R. to open for traffic that portion of its Ingersoll Branch from Ingersoll Jct., mileage 0 to 4.8, Ont.

12540. Dec. 17.—Approving location of C.N.R. through tps. 46-44, r. 6-8, w. 3 m., Sask.

12541. Dec. 2.—Ordering C.N.Q.R. to provide platform and shelter for freight and passenger traffic at Pointe aux Trembles, which is to be made a regular stop for local trains between Joliette and Montreal, and also to afford facilities for handling express traffic.

12542. Dec. 9.—Authorizing railway companies to use Blaugas gas for lighting passenger cars, subject to certain conditions.

12543. Dec. 19.—Amending order 12444, Dec. 1, re application of W. Raymond, of Ste. Agathe des Monts, Que., regarding farm crossings.

12544. Dec. 19.—Recommending to Governor-in-council for sanction, lease entered into between New Brunswick Southern Ry. and C.P.R., Oct. 6, 1910.

12545. Dec. 16. — Authorizing Canadian Light & Power Co. to lay pipes under G.T.R. at Cote St. Paul, Que.

12546. Dec. 16. — Authorizing Canadian Light & Power Co. to erect wires across N.Y.C. & H.R. Rd. at Primeau Road, Que.

12547. Dec. 19.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across G.N.W. Telegraph Co.'s wires at lot 51, con. 2, Ancaster tp.

12548, 12549. Dec. 19.—Authorizing Canadian Light & Power Co. to erect wires across N.Y.C. and H.R. Rd.'s siding at Beauharnois, and near St. Louis River, Que.

12550. Dec. 19.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across G.N.W. Telegraph Co.'s wires at Mill St., Ingersoll.

12551. Dec. 17.—Authorizing C.N.R. to build spur from Russell to Fifth St. and between Van Horne and College Aves., Brandon, Man.

12552. Dec. 19.—Extending to July 1, 1911, time within which Alberta Central Ry. may complete branch at Rocky Mountain House.

12553. Dec. 19.—Ordering C.N.R. to build farm crossing at west end of station platform at Banning, Ont., to be completed, with the exception of gates, by Dec. 31, 1910, gates to be installed by June 1, 1911.

12554. Dec. 19.—Amending order 12500, Dec. 10, 1910, made upon application of C.P.R. regarding spur for University of Saskatchewan.

12555. Dec. 19.—Authorizing Walkerton & Lucknow Ry. (C.P.R.) to operate passenger trains over Hanover Portland Cement Co.'s narrow gauge railway at mileage 29.1, in lot 69, con. 2, north of Durham Road, Brant tp., at a rate not to exceed 10 miles an hour, Hanover Portland Cement Co.'s trains to be brought to a stop before passing crossing.

12556. Dec. 19.—Approving revised location of C.N.O.R., mileage 57.11 to 58.23, from Sudbury Jct.

12557. Dec. 17.—Approving C.N.O.R. drawing for one 24 I beam span at mileage 24.96, Pickering tp.

12558. Dec. 19.—Authorizing C.N.O.R. to build across Foster Ave., Belleville.

12559. Nov. 7.—Authorizing C.P.R. to build bridge 28.0 on its Muskoka section, Ontario Division.

12560 to 12563. Dec. 17.—Authorizing Ontario Power Co., Niagara Falls, to erect wires across Bell Telephone Co.'s wires at four points in St. Catharines.

12564. Dec. 20.—Authorizing Burrard Lumber Co. to build roadway across C.P.R. at mileage 123.53 from North Bend, B.C.

12565, 12566. Dec. 20.—Authorizing G.T.P. Branch Lines Co. to build across highway in s.w. ¼ sec. 36, tp. 26, r. 4, w. 2 m., and across highway in sec. 1, tp. 28, r. 4, w. 2 m., Sask.

12567. Dec. 17.—Authorizing Bell Telephone Co. to lay wires under Montreal Terminal Ry. at Dickson St., Parc Terminal, Que.

12568. Dec. 19.—Authorizing C.P.R. to build across highway at mileage 10.2, Lethbridge Branch, Alta.

12569. Dec. 12.—Dismissing application of city of Hamilton, Ont., for further protection at Main St.

12570. Dec. 19.—Ordering C.P.R. to install improved crossing signal bell at crossing of public road by Guelph & Goderich branch, between Moffatt and Corwhin stations, Ont., by Jan. 21, 1911.

12571. Dec. 20.—Authorizing G.T.P. Branch Lines Co. to divert road in sec. 21, tp. 30, r. 24, w. 4 m., Alta.

12572, 12573. Dec. 20.—Approving Atlantic, Quebec & Western Ry. plans for stations at Grand River and Cape Cove, Que..

12574. Nov. 28.—Authorizing C.N.R. to build across 48 highways west of principal meridian.

12575, 12576. Dec. 20, 19.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across Bell Telephone Co.'s wires in Middlesex tp., and G.N.W. Telegraph Co.'s wires in Brantford tp.

12577 to 12579. Dec. 20.—Authorizing Seymour Power & Electric Co. to erect wires across Bell Telephone Co.'s wires in Brighton tp. and Murray tp., Ont.

12580, 12581. Dec. 21.—Ordering G.T.R. to erect shelters at Barrytown and Quays, Ont., before June 1, 1911.

12582. Dec. 20.—Authorizing New Brunswick Southern Ry. to build spur across Prince William St., Nepean tp.

12583. Dec. 20.—Extending to May 20, 1911, time within which G.T.P.R. may construct shelter at Redford, Sask.

12584. Dec. 21.—Authorizing C.P.R. to use bridges 3.2, 4.1, and 5.0 on its St. Marys Branch, Ont.

12585. Dec. 21.—Approving C.N.O.R. Standard Passenger Tariff C.R.C. 89, Dec. 15, 1910, at 3c. a mile between all its stations.

12586. Dec. 19.—Authorizing C.P.R. to open for traffic that portion of its double track on its Broadview subdivision from mileage 0 to 8.2, being a diversion of line for improving alignment.

12587. Dec. 21.—Authorizing C.P.R. to build spur for Empire Sand & Gravel Co., Ste. Elizabeth parish, Que.

12588 to 12590. Dec. 20.—Authorizing C.P.R. to build spurs for Saskatchewan Cartage & Warehouse Co., Saskatoon; Burn Grain Co., Sedgewick, Alta., and Bitulithic & Contracting Co., Regina, Sask.

12591. Dec. 20.—Approving location and plans of Atlantic, Quebec and Western Ry. station at Ste. Adelaide de Pabos, Que.

12592. Dec. 19.—Authorizing G.T.R. to build spur for Love Brothers, Toronto.

12593. Dec. 20.—Extending to Sept. 30, 1911, time within which C.P.R. may build branch for the Provincial Reformatory, Guelph, Ont.

12594. Dec. 19.—Authorizing C.P.R. to build spur for Wilson Box Co., at mileage 13.41, north of its St. John section, N.B.

12595. Dec. 20.—Ordering that crossing of New Westminster Southern Ry. by Vancouver Power Co.'s tracks at Cloverdale, B.C., be protected by interlocking plant.

12596, 12597. Dec. 20.—Authorizing G.T.P. Branch Lines Co. to build across the highways in s.w. ¼ sec. 1, tp. 27, r. 4, and s.w. ¼ sec. 25, tp. 27, r. 4, w. 2 m., Sask.

12598. Dec. 20.—Extending to June 1, 1911, time within which Montreal Terminal Ry. may complete spur across Victoria Ave., Montreal East.

12599. Dec. 21.—Reporting to Governor-in-council for sanction, lease of St. Maurice Valley Ry. to C.P.R., dated Oct. 6, 1910, for 999 years.

12600. Dec. 21.—Amending order 4420, Mar. 6, 1908, which authorized junction of Essex Terminal Ry. with Lake Erie & Detroit River Ry., respecting protection.

12601. Dec. 21.—Authorizing Bethesda & Stouffville Telephone Co. to install telephone in G.T.R. station at Unionville, Ont., on party wire instead of private wire, as stipulated in agreement with G.T.R., June 28, 1909.

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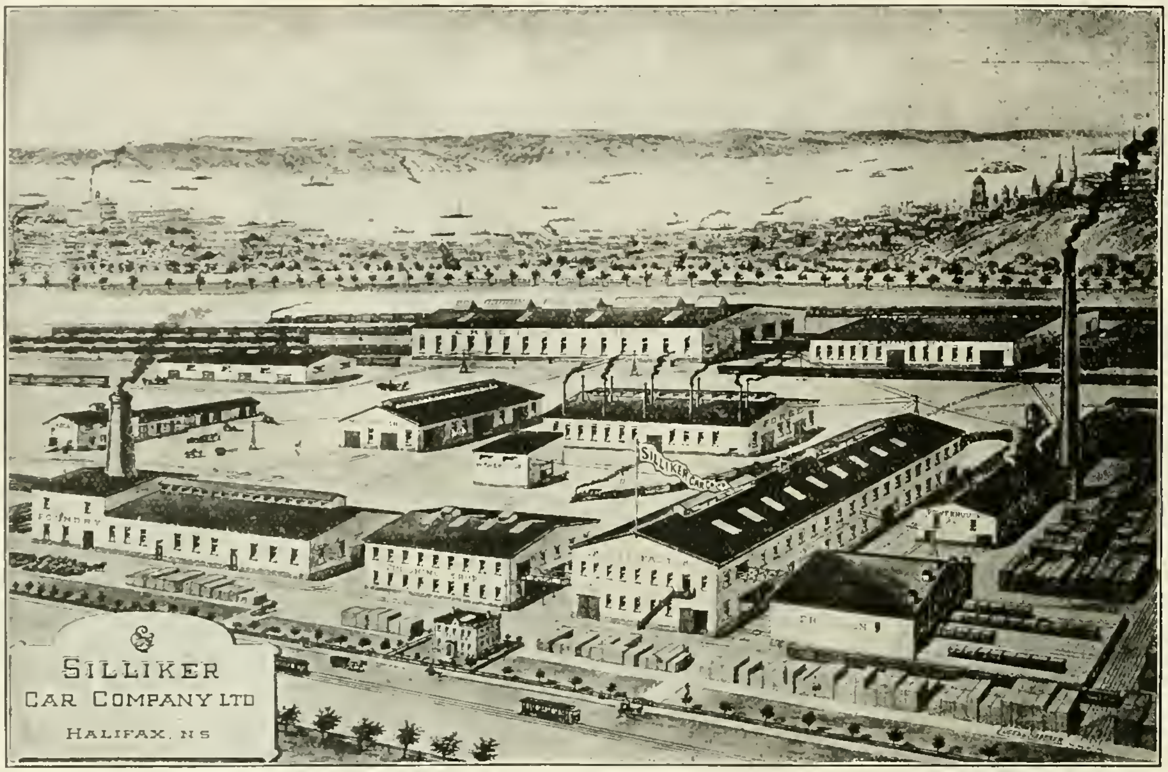

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12602. Dec. 21.—Reporting to Governor-in-council for sanction lease of Kootenay Central Ry. to C.P.R., Oct. 6, 1910, for 999 years.

12603. Dec. 20.—Authorizing C.N.O.R. to erect telegraph wires across private wires at stations 149.31 and 151.09, York tp.

12604. Dec. 21.—Authorizing Ontario Power Co., Niagara Falls, to erect wires across C.P.R. telegraph wires at Frank St., St. Catharines, Ont.

12605. Dec. 20.—Authorizing Seymour Power and Electric Co. to erect wires across North American Telegraph Co.'s wires, Murray tp., Ont.

12606. Dec. 21.—Authorizing C.P.R. to build spur for Canadian Linderman Co., Woodstock, Ont.

12607. Dec. 21.—Authorizing G.T.R. to build two branches to St. Lawrence Pressed Brick & Terra Cotta Co., Laprairie, Que.

12608. Dec. 21.—Authorizing Ontario Hydro-Electric Power Commission to use its wires at lots 11-12, con. 2, Brantford tp.

12609. Dec. 21.—Extending for one month from Dec. 15 time within which T.H. & B.R. may file detail plan of gates to be installed at Wentworth St., Hamilton, Ont.

12610. Dec. 22.—Authorizing N. St. C. & T.R. to erect wires across G.T.R. 13.91 miles from Thorold, Ont.

12611. Dec. 22.—Authorizing Consumers Gas Co. to lay pipe under G.T.R. on Ellis Ave., Toronto.

12612. Dec. 22.—Authorizing Armstrong Cartage & Warehouse Co. to lay sewer under T.H. & B.R. and G.T.R. in Hamilton, Ont.

12613. Dec. 22.—Authorizing town of Blairmore, Alta., to lay pipes under C.P.R. at two points.

12614. Dec. 23.—Authorizing Stratford, Ont., Light & Heat Commission to erect wires across G.T.R. at Victoria Park.

12615. Dec. 23.—Authorizing village of Dundalk, Ont., to erect wires across C.P.R. at Grey St.

12616. Dec. 23.—Authorizing A. Doughty, Moulton, Ont., to lay pipe under G.T.R. in lot 5, con. 3.

12617. Dec. 23.—Certifying correction of range 23 to range 24 in plan approved under order 7934, Aug. 21, 1909 re G.T.P.R. construction in Edmonton, Alta.

12618. Dec. 23.—Certifying amendments in plan approved under order 11074 made upon application of G.T.P. Branch Lines Co., re location of its Melville-Regina Branch.

12619. Dec. 23.—Approving proposed reinforcement and strengthening of east abutment of G.T.R. bridge over public road east of canal at Ste. Anne de Bellevue, Que.

12620. Dec. 22.—Authorizing C.P.R. to build spur across s.e. ¼ sec. 17, tp. 11, r. 4, e. p. m.; n.e. ¼ sec. 8, tp. 11, r. 4, e. p. m., and road allowance between same, and three sidings from said spur, in Winnipeg, Man.

12621. Dec. 22.—Authorizing G.T.R. to build branch for Municipal Construction Co., Lochiel tp., Ont.

12622. Dec. 12.—Authorizing C.P.R. to build subway across Jane St., York tp., Ont.

12623. Dec. 24.—Authorizing C.P.R. to build additional track across Dominion Ave., Frank, Alta., and to build highway across its main line, the centre being about 523 ft. westerly along the main line from its intersection with east boundary of British Columbia Ave.

12624. Dec. 24.—Approving corrections in plan approved by order 7052, May 21, 1909, re the G.T.P.R. construction in North Alberta.

12625. Dec. 14.—Ordering Bell Telephone Co. to file tariffs applying same tolls within the present limits of Toronto, as now apply within the company's Toronto exchange limits for Toronto exchange services, to become effective not later than Jan. 1, 1911, and to be without prejudice to the company filing tariffs covering that section of the city, which was formerly West Toronto, continuing in effect tolls for local or limited service to those who do not desire the whole of the Toronto exchange service.

12626. Dec. 24.—Authorizing Ontario Power Co., Niagara Falls, to erect wires across G.N.W. Telegraph Co.'s wires at Frank and Queenston Sts., St. Catharines, Ont.

12627. Dec. 24.—Authorizing Canadian Niagara Power Co. to erect wires across Bell Telephone Co.'s wires at Jarvis St. and Central Ave., Bridgeburg, Ont.

12628. Dec. 24.—Authorizing Seymour Power and Electric Co. to erect wires across G.N.W. Telegraph Co.'s wires, Murray tp., Ont.

12629. Dec. 24.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across Bell Telephone Co.'s wires at lot 6, con. A, London tp.

12630. Dec. 12.—Approving subject to certain terms, extension of Grand Valley Ry. in Brantford, Ont., except that portion on Marlborough St. between Murray and Clarence Sts., and ordering that crossings of G.T.R. on Nelson St.; Brantford & Hamilton Ry. on Murray St.; T.H. & B. Ry. on Cayuga St., and Western Counties Electric Co.'s canal, be protected by half interlocking plants to be installed by Grand Valley Ry., with the exception of the canal crossing.

12631. Dec. 24.—Extending to Mar. 5, 1911, time within which electric bell may be installed at C.P.R. crossing at Mechanicsville, Ottawa.

12632. Dec. 24.—Extending to Apr. 15, 1911, time within which electric bell may be installed at C.P.R. crossing at William St., Carleton Place, Ont..

12633. Dec. 24.—Authorizing C.P.R. to build spur for Burrard Grain Co., Baysland, Ont.

12634. Dec. 24.—Extending to Apr. 26, 1911 time within which electric bell may be installed at C.P.R. crossing, Lake Ave., Carleton Place, Ont.

12635. Dec. 28.—Approving C.N.O.R. location between Sydenham and Harrowsmith, mileage 159.70 to 162.27.

12636. Dec. 28.—Authorizing Kettle River Valley Ry. to build across road at station 223.60, subdivision 1a, west of Midway, B.C.

12637. Dec. 28.—Approving revision in grade of C.P.R. main line from mileage 65.63 to 69, Ops and Fenelon tps., Ont.; the revision in location from mileage 69 to 70.5, and location from mileage 70.5 to 72.88 in Lindsay, Ont.

12638. Dec. 28.—Approving location of Kettle Valley Lines from stations 0.00 to 513, division 1a, west of Midway, B.C.

12639. Dec. 24.—Authorizing Kilmer and Holland to lay pipe across C.P.R. from D.L. 186, known as Vancouver Heights, B.C.

12640. Dec. 21.—Authorizing Woodstock Gas Light Co. to lay pipe under C.P.R. at Tecumseh St., Woodstock, Ont.

12641. Dec. 28.—Authorizing Hamilton Cataract Power, Light & Traction Co. to erect wires across G.T.R. at con. 1, West Flamboro tp., Ont.

12642. Dec. 27.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across Bell Telephone Co.'s wires at Mutual and Carnegie Sts., Ingersoll.

12643. Dec. 27.—Declaring that at present no further protection is necessary at C.P.R. Dundas and Church Sts. crossings, Etobicoke tp., Ont.

12644. Sept. 1.—Declaring conditions under which draw or swing bridge of Esquimalt & Nanaimo Ry. across northern arm of the harbor, Victoria, B.C., shall be operated.

12645, 12646. Dec. 28.—Authorizing Ontario Power Co., Niagara Falls, to erect wires across G.T.R. at two points in St. Catharines.

12647 to 12649. Dec. 28.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across Bell Telephone Co.'s wires at two points in London tp., and in Brantford tp.

12650. Dec. 28.—Authorizing town of Galt, Ont., to erect wires across C.P.R. at Kerr St.

12651. Dec. 12.—Authorizing C.N.O.R. to build branch in Trenton, from south side of Dundas St., through Gilmour Door Co.'s property and to connect with its main line by transfer tracks running north and south between Meyers and Paul Sts., crossing James and Peter Sts.

12652. Dec. 20.—Ordering Bell Telephone Co. to maintain connection of D. Crozier, Merrickville, with A. Newsome, Kilmarnock, Ont.

12653. Dec. 28.—Rescinding order 12413, May 12, 1910, made upon application of G. Taylor, Winnipeg, re rates charged by C.N.R. on grain from Buchanan, Sask., to Headingly, Man.

12654. Dec. 12.—Approving revised location of James Bay & Eastern Ry. from mileage 7.46 to 9.93, from Roberval, Ouiatchouan Indian Reserve, and Ashuapmouchouan tp., Que.

12655. Sept. 20.—Declaring that application of W. S. Tilston Manager Montreal Board of Trade Transportation Bureau on behalf of Laprairie Brick Co., for order prescribing joint through rate of 3c. per 100 lbs. on brick from Laprairie to Mile. Que., falls within terms of General Interswitching Order, 4988, July 8, 1908.

12656. Dec. 29.—Authorizing Atlantic Quebec & Western Ry. to open for traffic that portion of its line between Newport Station, mileage 35, and Grand River Station, mileage 51.5, Que.

12657. Dec. 29.—Authorizing Seymour Power & Electric Co. to erect wires across G.T.R. between lots 8 and 9, con 1, Murray tp., Ont.

12658. Dec. 29.—Approving plans and specifications of Dauphinais drain, to be built across G.T.R. lands and track in Rochester tp., Ont.

12659. Dec. 28.—Authorizing C.P.R. to erect wires under the Orillia municipal power lines at five points in South Orillia tp., Ont.

12660. Dec. 30.—Authorizing Erindale Power Co. to erect wires across G.T.R. on Church St., Etobicoke, Ont.

12661. Dec. 30. — Authorizing Seymour Power and Electric Co. to erect wires across Central Ontario Ry. at lot 5, con. 2, Murray tp., 32½ miles from Picton, Ont.

12662. Dec. 29.—Authorizing G.T.P. Branch Lines Co. to build across seven highways in Saskatoon District, w. 2 m., Sask.

12663. Dec. 30.—Authorizing C.N.O.R. to build between lots 78 and 80, St. Eustache parish, Two Mountains county.

12664, 12665. Dec. 30.—Authorizing G.T.P. Branch Lines Co. to build across highway in s.w. ¼ sec. 30, tp. 32, r. 23, and across highway in s.w. ¼ sec. 5, tp. 33, r. 23, w. 4 m., South Alberta District.

12666. Dec. 30.—Approving changes of C.P.R. Regina, Saskatoon and North Saskatchewan branch.

12667. Dec. 30.—Extending to June 30, 1911, time within which Guelph & Goderich Ry. shall remove mound on southeast side of highway at crossing of road between cons. 9 and 10, Morris tp., Ont.., at mileage 62.5.

12668. Dec. 31.—Approving C.P.R. plan of 20 ft. arch at bridge 78.7, Toronto subdivision.

12669. Dec. 31.—Authorizing G.T.P. Branch Lines Co. to divert road in n.w. ¼ sec. 29, tp. 41, r. 21, w. 4 m., on its Calgary branch, Alta.

12670. Dec. 30.—Authorizing C.P.R. to build spur for C. C. Snowdon at Calgary Jct., Alta.

12671. Dec. 30.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across G.N.W. Telegraph Co.'s wires at Queen St., St. Marys.

12672. Dec. 31.—Authorizing Trenton Electric & Water Co. to erect wires across G.T.R. between Trenton and Belleville, at lot 28, con. 2, Sidney tp., Ont.

12673. Dec. 31.—Approving C.N.R. revised location through tps. 29 and 28, r. 23, w. 3 m., Sask., mileage 125.

12674. Dec. 20.—Declaring illegal, rates on finnan haddies, charged higher than third class, in less than carloads, and fifth class in carloads.

12675. Dec. 12.—Authorizing C.P.R. to change location of its line crossing Eramosa Road, Norwich St., and City lane, and approving location of proposed station, Guelph, Ont.

12676, 12677. Dec. 31.—Authorizing C.P.R. to build spurs for Imperial Oil Co., and Canadian Oil Co., in Calgary, Alta.

12678. Jan. 3.—Ordering G.T.R. within 48 hours to remove its tracks at east end of Richmond Road viaduct, Ottawa, and directing that it be liable to a penalty of $100 a day for every day it shall be in default in carrying out the order.

12679. Jan. 3.—Authorizing C.P.R. to build spur for Ontario Wind Engine & Pump Co. in Winnipeg, Man.

12680. Jan. 4.—Extending until June 30 time within which C.P.R. shall build spur for Great West Felt Co., Elmira, Ont.

12681 to 12683. Jan. 4.—Authorizing London, Ont.., Water Commissioners to erect wires across London and Port Stanley Ry. at two points, in city of London, Ont., and across G.T.R.

12684. Jan. 4.—Authorizing Canada Atlantic Ry. Co. (G.T.R.) to operate trains past southeast corner Somerset Street Bridge abutment, Ottawa, by a clearance of 3¼ ft.

12685. Sept. 23.—Ordering C.P.R. to publish and file, on or before Feb. 15, 1911 freight tariff placing the rates from Port Arthur and Fort William, Ont., to all stations intermediate to Winnipeg upon same relative scale, with due regard to mileage, as rates from Port Arthur and Fort William to Winnipeg; and further ordering that on or before same date it publish and file special town tariff of rates on general merchandise distributed from Kenora and Keewatin, Ont.

12686. Jan. 4.—Authorizing G.T.R. to build branch to Mount Bruno Station, Que.

12687. Jan. 4.—Authorizing C.P.R. to build spur for Riverside Lumber Co., Calgary, Alta.

12688. Dec. 1.—Authorizing Quebec Ry., Light & Power Co. to build branch from Beauport Station, in a northeasterly direction to Montmorency village.

12689. Dec. 2.—Ordering Montreal and Southern Counties Ry. to improve condition of right of way in Montreal South.

12690. Jan. 3.—Authorizing C.N.O.R. to take certain lands in Darlington tp. for diverting highway.

12691, 12692. Jan. 4.—Authorizing Ontario Hydro-Electric Commission to erect wires across Bell Telephone Co.'s wires, and M.C.R. at Concession St., Tillsonburg.

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THROUGH TRAINS between BOSTON (via Boston & Maine R.R. and Cent. Vermont Ry.) MONTREAL, TORONTO and CHICAGO.

THROUGH TRAINS between NEW YORK, TORONTO and CHICAGO via Lehigh Valley R. R. and Niagara Falls.

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The Lines of this Great System reach all the Principal Cities and Towns in Quebec and Ontario

W. E. DAVIS, Passenger Traffic Manager, Montreal. G. T. BELL, Asst. Pass. Traffic Manager, MONTREAL.
G. W. VAUX, Gen. Passenger Agent, MONTREAL

Electric Headlight Saves Train

(From Daily Papers)

"Wednesday night B——— forgot to deliver an order to hold Eastbound Passenger Train No. 6, and only the fact that the Electric Headlight of the oncoming Passenger train was seen at a great distance by the Engineer of the Westbound Freight prevented a head end collision in the ——— Canyon near ———. The warning light was seen in time to enable the freight to get back on to the siding at ———."

PYLE-NATIONAL ELECTRIC HEADLIGHT CO.

CHICAGO

12693. Jan. 4.—Authorizing London, Ont., Water Commissioners to erect wires across G.T.R. at Clarence St.

12694. Nov. 11.—Authorizing city of Lethbridge, Alta., to maintain sewer under C.P.R. and Alberta Ry. and Irrigation Co.'s line at Galt St.

12695. Jan. 5.—Authorizing Canadian Northern Pacific Ry. to build under Esquimalt and Nanaimo Ry. near Parson's Bridge, Esquimalt District, B.C.

12696. Jan. 5.—Authorizing C.P.R. to build spur for Canadian Cooperage Mfg. Co., Smiths Falls, Ont.

12697. Jan. 7.—Authorizing town of Galt, Ont., to maintain drain under G.T.R. at James St.

12698. Jan. 7.—Authorizing W. J. Aikens, Dunnville, Ont., to lay main under G.T.R. on Hamilton Road, Cainsville.

12699. Jan. 3.—Rescinding order 11246, July 14, 1910, which authorized C.P.R. to build spur to G. F. & J. Galt's premises, Calgary, Alta., on application of J. I. Case Threshing Machine Co., Calgary.

12700. Dec. 12.—Authorizing C.P.R. to build additional track across Main St., Clive, Alta.

12701. Jan. 5.—Authorizing C.P.R. to join city of Toronto's industrial track on east side of River Don.

12702. Jan. 3.—Ordering C.N.O.R. to insert diamond in G.T.R., track at its Harwood Branch crossing, Cobourg, to be protected by interlocking plant, derails and home and distant signals

12703. Jan. 9.—Authorizing C.P.R. to change main line as located through Kamloops, B.C., and to cross Lorne St. with new location.

12704. Jan. 9.—Approving rebised location Georgian Bay & Seaboard Ry. (C.P.R.) from lot 6, con. 11, Thorah tp., at mileage 44.22, in a southeasterly direction to lot 17, con. 1, Eldon tp., at mileage 47.42, Victoria county, Ont.

12705. Jan. 9.—Amending order 12504 re inadequate train service by G.T.R. between Ste. Martins and Beauharnois, Que.

12706. Jan. 9.—Ordering C.N.R. to provide suitable highway crossings at highway between lots 5 and 6, Paipoonge tp., work to be completed by May 15.

12707. Jan. 4.—Authorizing Armstrong Cartage and Warehouse Co. to build sewer under T.H. & B.R. and G.T.R. in Hamilton, Ont.

12708. Jan. 9.—Approving plans of subway under C.P.R. at Broad St., Regina, Sask.

12709. Jan. 9.—Approving revised location of C.N.O.R. Shannonville Station grounds, Tyendinaga tp.

12710. Jan. 9.—Authorizing Saraguay Electric and Water Co. to erect wires across C.N.Q.R. at Broadway Ave., Montreal East.

12711. Dec. 30.—Authorizing Richmond municipal council, B.C., to lay pipes under Vancouver and Lulu Island Ry.

12712. Jan. 4.—Authorizing Montreal Park and Island Ry. to build branch to Dominion Bridge Co.'s yard, Jacques Cartier county, Que.

12713. Jan. 9.—Authorizing C.P.R. and C.N.R. to operate their trains over crossing in Camrose, Alta., without first being brought to a stop.

12714. Dec. 12.—Authorizing G.T.R. to expropriate lands required for diversion of highways at Raike's and Woodlands crossings, Oro tp., Ont.

12715. Dec. 12.—Approving location of proposed C.P.R. station at Guelph, Ont.

12716 to 12722. Dec. 6 to Jan. 9.—Authorizing C.N.O.R. to build between lots 20 and 21, lots 21 and 22, con. 2; lots 10 and 11, lots 11 and 12, and across and divert Stanley Ave., and across Metcalfe Road on lot 18, by overhead structure, Gloucester tp.

12723. Dec. 6.—Authorizing C.N.O.R. to build across Hurdman's Road, Nepean tp., subject to certain conditions.

12724. Jan. 10.—Ordering C.N.R., before May 1, to install proper crossing signs and cattle guards along its line between Lloydminster and Aberfeldy, and directing a fine of $25 a day for failure to do so.

12725. Jan. 10.—Authorizing city of Toronto to erect wires across G.T.R., the G.N.W. Telegraph Co.'s wires, and under Toronto and Niagara Power Co.'s wires.

12726. Jan. 10.—Authorizing Seymour Power and Electric Co. to erect wires across C.N.O.R. in lot 27, con. B, Brighton tp.

12727. Jan. 10.—Authorizing Weston village, Ont., to erect wires across G.T.R. at Weston Road.

12728, 12729. Jan. 10.—Authorizing Ontario Hydro-Electric Commission to erect wires across Bell Telephone Co.'s wires at lot 3, r. 2, Etobicoke tp., and across G.T.R. at Concession St., Tillsonburg.

12730. Jan. 10. — Authorizing Canadian Light and Power Co. to erect wires across C.P.R. at Lachine Canal, South Bank.

12731. Jan. 11.—Authorizing Quebec Ry., Light and Power Co. to erect wires across C.P.R. on Prince Edward St., Quebec.

12732. Jan. 11.—Authorizing city of Winnipeg to alter its wires across C.P.R.

12733, 12734. Jan. 11.—Authorizing city of Winnipeg to lay pipes under C.P.R. at Magnus and Pritchard Aves.

12735, 12736. Jan. 11, 10.—Relieving M.C.R. from further protection of crossing ½ mile south of ship yards, Niagara Division, and at Town Road crossing, Townsend Station, Ont.

12737. Jan. 10.—Approving location of Alberta Central Ry. from mileage 40 to 80 easterly from Red Deer.

12738. Jan. 11.—Authorizing Qu'Appelle, Long Lake and Saskatchewan Ry. to build across Short St. produced and Beaver St. produced, and to close and divert Government road allowance between secs. 3 and 4, tp. 44, r. 2, w. 3 m., Duck Lake, Sask.

12749. Jan. 10.—Approving plans of train shed for elevated passenger yard Union Terminal, Winnipeg.

12740. Jan. 11.—Authorizing Alberta Government to build highway across C.N.R. in sec. 11, tp. 38, r. 5, w. 3 m.

12741. Jan. 11.—Authorizing Tilsonburg, Lake Erie and Pacific Ry. to build spur to Ingersoll Nut Co.'s premises, Ingersoll, Ont.

12742. Jan. 11.—Authorizing C.P.R. to build additional main track across Main and Tupper Sts., Portage la Prairie, Man.

12743. Jan. 11.—Authorizing G.T.R. to build spur upon and across Thackeray St., Dickens St. and Carlaw Ave., Toronto.

12744. Jan. 11.—Authorizing C.P.R. to build spur for Pine Lumber Co., mileage 129.96, Chapleau Subdivision, Ont.

12745. Jan. 9.—Approving forms used in transmitting messages by C.P.R., G.N.W., Canadian Northern, North American, Western Union, Anglo-American, Marconi Wireless, and G.T.P. Telegraph Cos., and White Pass and Yukon Route for four months from date, or until further order.

◆

Transportation Conventions etc. in 1910.

Feb. 15, 1911.—American Association of General Baggage Agents, San Antonio, Tex.
Mar. 14-15.—International Association of Ticket Agents, Norfolk, Va. Side trip to Havana, Cuba.
Mar. 21, 22, 23.—American Railway Engineering and Maintenance of Way Association, Chicago, Ill.
Mar. 30.—Eastern Association of Car Service Officers, Washington, D.C.
April 26.—Association of American Railway Accounting Officers, New Orleans, La.
May 15-18.—International Railway Fuel Association, Chattanooga, Tenn.
May 17.—American Railway Association, at New York City.
June 14-16.—American Railway Master Mechanics Association, Atlantic City, N.J.
June 19.—Association of Railway Telegraph Superintendents, Boston, Mass.
June 19-21.—Master Car Builders Association, Atlantic City, N.J.
June 20.—American Association of Freight Agents, Kansas City, Mo.
June 20.—Train Dispatchers Association of America, Baltimore, Md.
June 20-21.—Association of Transportation and Car Accounting Officers, Cape May, N.J.
June 21.—Freight Claims Association, St. Paul, Minn.
June 22.—American Association of Demurrage Officers, Niagara Falls, N.Y.

◆

Highway Crossings of Railways.—The statistical report of the condition of Canadian railways for the year ended June 30, 1910, shows that there were 20,012 crossings of highways, of which 1,187 were protected and 18,825 unprotected. Of the protected crossings, 161 were protected by gates, 345 by overhead bridges, 400 by subways, 147 by bells, and 134 by watchmen. There were 630 protected and 1,902 unprotected crossings in urban districts, and 557 protected and 16,923 unprotected crossings in rural districts.

The Cowan Construction Co. is applying to the Manitoba Government for an order changing its name to the Union Construction Co.

Reduction of Pullman Car Fares.

Upon the cases of G. S. Loftus vs. Pullman Co. being called for rehearing, the Interstate Commerce Commission decided Dec. 12 that the orders heretofore entered should be modified so that the maximum rate for a lower berth from St. Paul to Seattle shall not exceed $11, and for an upper berth, $8.80; from St. Paul to Chicago the upper-berth rate not to exceed $1.60; from St. Paul to Superior, the upper-berth rate not to exceed $1.25; and from St. Paul to Fargo or to Grand Forks, the upper-berth rate not to exceed $1.60.

In the cases of the State of Oklahoma intervener and the States of Kansas, Indiana and Arkansas vs. the Pullman Co. et al, the Commission on the same day made an order directing the Pullman Co. to fix rates upon upper berths not exceeding 80% of the rates applicable under its tariffs upon lower berths, whenever such lower-berth rate is $1.75 or over, and in cases where the lower-berth rate is $1.50, the upper-berth rate shall be fixed at a rate not to exceed $1.25. The reductions in lower berths which are proposed by the Pullman Co., not being involved in the complaints filed by the various states, have not been made the subject of an order by the commission.

◆

Eastern Canadian Passenger Association.

At a meeting in Montreal Jan. 10, the following were elected for the current year:

Chairman.—E. O. Grundy.

Executive Committee—G. W. Vaux, W. Stitt, T. Henry.

Rules Committee.—G. W. Vaux, W. Stitt, G. Tombs, J. W. Hanley, C. Hartigan, F. F. Backus, W. H. Underwood, J. M. Lyons, Neil Mooney.

Secretary.—G. H. Webster.

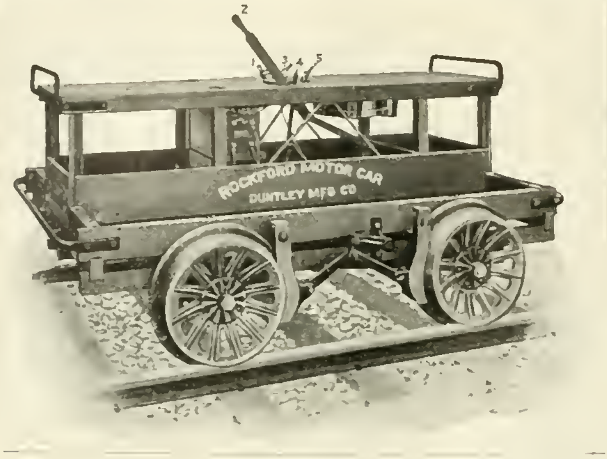
◆

Railway Rolling Stock Statistics.

During the year ended June 30, 1910, the additions to the rolling stock of the various Canadian railways included 110 locomotives, 138 passenger cars, 1,934 freight cars, and 789 cars for the company's own service. On that date there were in service 4,079 locomotives, 4,320 passenger cars, 119,713 freight cars, and 8,648 company cars. In addition there are 71 locomotives and 1,729 cars under lease. The returns show 1,090 passenger, 2,601 freight, and 388 switching locomotives, a total of 3,989, or 90 less than the number of locomotives stated to be in service. The cars in the company's service consisted of 80 officers' and pay, 2,645 gravel, 127 derrick, 1,893 caboose, and 3,892 miscellaneous cars. The aggregate capacity of the cars of the various classes in freight service was 3,514,106 tons, of which 2,211,963 tons represented the capacity of the 75,983 box cars. The average capacity of box cars was 29.1 tons, against 27.6 tons in the year ended June 30, 1909. The tractive power of locomotives has also considerably increased within the same period. The available supply of rolling stock per 1,000 miles of line has been computed as follows:—Locomotives, 165; freight cars, 4,840; passenger cars, 174. The service performed by each freight car during the year was equivalent to the moving of 622 tons, equal to 55 tons better than the performance of the previous year. This increase is due to the use of heavier units and the steady extension of double trackage. Of the 132,681 cars of all classes, 125,831 were fitted with air brakes, and 128,321 with automatic couplers.

◆

R. A. Waite, who was the architect of the G.T.R. general office building, Montreal, died in New York, Jan. 7, aged 62, of pneumonia.



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Workmen are taken to and from work in one third of the time.
All of their energy is saved for track work.

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OF COBOURG, LIMITED

MODERN HIGH-CLASS

ROLLING STOCK

Passenger, Freight and Electric Railway

Ruggles' Rotary Snow Plows

CAR CASTINGS, FORGINGS AND REPAIR PARTS

How to run in Transition Curves without Tables.

By C. P. Howard, M. Am. Soc. C. E.

There are a number of fieldbooks and tables for transition curves which are more or less satisfactory to those who use them, but an ordinary spiral of given length can be run in without fieldbook or tables.

When running in by transit the main thing is to put in the intermediate deflections with transit at one end. Beyond this it is only necessary to know a few important characteristics of the spiral (practically the cubic parabola within the limits of ordinary railway practice). The principal facts to be remembered are:

1. The total angle, 1, of spiral is equal to its length multiplied by half the degree of curve; that is, calling D the degree of the circular curve and L the length of the spiral 1=½ L D, or where L is in feet 1=L D/200.

2. The total deflection angle at the tangent end of spiral is one-third the total angle 1. At the curve end it is two-thirds; or Angle T=⅓ 1; angle C=⅔ 1.

3. Deflections from the tangent end to points on spiral are as the squares of their distances from tangent ends.

4. The middle point of spiral bisects the gap, p, between the P. C. and tangent.

EXAMPLE.—Approaching the curve from the tangent; degree of circular curve D=6° 00′; length of spiral L=240 ft.; P. C. of circular curve to be opposite station 38+20.

The ends of spiral by Principle 4 will be 120 ft. each way from the P. C., making the tangent end, S T, at 37+00 and the curve end, S C, at 39+40. Suppose we run it in by chords of any convenient length, say 6 chords of 40 ft. Then by Principle 1 the total angle 1 of the spiral is equal to 240 ft. of 3° curve=7° 12′. By Principle 2, with transit at S T the total deflection angle to S C, the curve end of Spiral, is T=⅓1=2° 24′. By Principle 3 the deflection for each intermediate chord point is to the total deflection as the square of its distance to the square of the whole distance. Taking the distance from S T in fractions of the total length we multiply 2° 24′ by $(1/6)^2$, $(1/3)^2$, $(1/2)^2$, $(2/3)^2$, and $(5/6)^2$ to get deflections to the intermediate chord points, making

37 S T	
+40	0° 04′
+80	0° 16′
38+20	0° 36′
+60	1° 04′
39	1° 40′
39+40 SC	2° 24′

With transit at S C and backsight on S T turn the angle C, or ⅔ I=4° 48′, to get on the common tangent to circular curve and spiral. That is all there is to it. If, however, it is desired to locate points at the even stations and +50's, the deflections would be figured similarly. The distances to intermediate points being 50, 100, 150 and 200, their deflections would be 2° 24′ multiplied by $(50/240)^2$, $(100/240)^2$, $(150/240)^2$, and $(200/240)^2$.

If we approach the spiral from the curve, we note another characteristic:

5. Starting at the curve end the spiral diverges from the circular curve produced the same as it does from the tangent produced when starting at the tangent end.

Therefore to get the deflections from the curve end of spiral we compute them the same as from the tangent end, except that we subtract them from the deflections of the circular curve produced instead of turning them from the tangent.

For instance, in the example above if we wish to run in the deflections from the curve end, we start with a tangent to the curve at S C, write out the deflections for the chord points on the circular curve produced, and subtract the deflections figured above thus:

Station.	Circular Curve.	Deductions.	Spiral.
37 S T	7° 12′	2° 24′	4° 48′
+40	6° 00′	1° 40′	4° 20′
+80	4° 48′	1° 04′	3° 44′
38+20	3° 36′	0° 36′	3° 00′
+60	2° 24′	0° 16′	2° 08′
39	1° 12′	0° 04′	1° 08′
39+40 S C			

Then having put in the spiral by deflections 1° 08′, 2° 08′, 3° 00′, 4° 48′, we move transit to tangent end, S T, and with backsight on S C, turn the angle T=2° 24′ to get on tangent.

The division of the spiral into equal chord lengths has the advantage of using the same deflections, no matter which way we run it, turning from the tangent in one case and from circular curve deflections in the other.

OFFSETS.—If it is desired to compute the offsets with the tangent, the following additional characteristics may be noted:

6. Offsets from tangent to points on the spiral are as the cubes of their distances from the tangent end. This is indicated by the name "cubic parabola." The distances may be taken approximately as measured on the centre line of spiral.

7. Offsets from the circular curve produced to points on the spiral are also as the cubes of their distances from the curve end of spiral, being the same as offsets from tangent to spiral for corresponding distances from the tangent end.

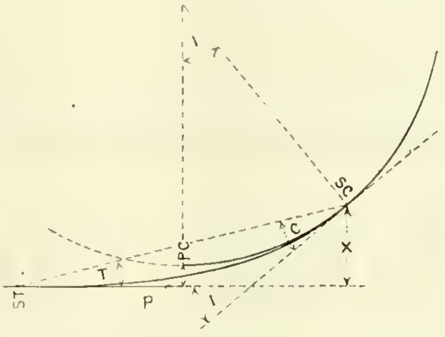

Diagram of Transition Curve.

8. The gap, p, between tangent and P C of the circular curve is one-fourth the offset, X, from tangent to end of spiral.

The main offset, X, at the end of spiral is evidently equal to the sine of the angle T times the long chord of spiral, and as the chord nearly equals the length of spiral, approximately:

X=L sin T ....(1)*

and by Principle 8 the gap, p, =¼X.

If the transitman happens not to have a table of sines with him, he need not worry, so long as he remembers the sine of 1° 00′. As the sines of angles are practically proportional for any probable value of T, he has simply to multiply T in degrees and decimals by .01745.

Occasionally, on location where the profile is rough, it may not be possible to see from one end of the spiral to the other. In this case, perhaps the simplest and easiest way is by offsets as follows:

Offset the distance p=¼X from tangent to P. C. of circular curve, or vice versa, and put in the points S T and S C at distances ½ each way. For points on the half-length of spiral next S T offset from the tangent, and for points on the other half offset from the circular curve.

For instance, in the preceding example the main offset is X=L sin T=240 sin 2° 24′=10.05, and p=¼ X =2.51.

The offsets from the tangent to spiral, according to the cubes of their distances from S T in fractions of L, are X multiplied successively by $(1/6)^3$, $(⅓)^3$, $(½)^3$, etc., making 0, 05, 0.37, 1.255, etc.; but we need only these three. The offsets from the circular curve for corresponding points and distances from S C are the same, namely, 0.05, 0.37, and 1.255, the last offset, 1.255 in each case being the offset to the middle point of spiral at the P. C. of circular curve. Added together they make the gap p=2.51.

Approaching the curve from the tangent, and reading up the page, curve being to the left, notes may be shown as follows:

Station.	Def.	Offseta.	
39+40°	3° 36′	S C,	0.0
39	2° 24′		0.05 R
+60	1° 12′		0.37 R
38+20°	Offset 2.51′ L to P.C 6° L (apiral 1.25′)		
+80			0.37 L
+40			0.05 L
37°		S T,	0.0

OTHER POINTS ABOUT THE SPIRAL.—If the gap, p, between P. C. and tangent is given, the length of spiral, L, may be obtained approximately by the rule of thumb.

$$L=371\sqrt{\frac{P}{D}}$$

taking L to the nearest foot.

A suggested length for spirals is: elevation of main curve in inches multiplied by speed in miles per hour.* A six-degree curve elevated 6 ins. corresponds to a speed of 39 mi. per hr. Multiplying this speed by 6, we would get a length of 234 ft.; or 258 ft. for 43 mi. per hr., which is 10% excess speed. Where practicable, longer spirals might be of some advantage in giving a longer run off for the elevation.

SUGGESTIONS AS TO TRACK CENTRES.—Attention should be called to the necessity for accurate instrumental work in running the track centres, and to the doubtful advantage of putting the points very close together. For instance, on a spiral 360 ft. long, one or two points may be 300 ft. or more from the transit. An error of ½ minute in deflection in that distance would throw the point off 0.00145 × 3=.043 ft. If the centres are 50 ft. apart, one centre off line that much would increase the middle ordinate of 100 ft. by the same amount, changing the degree of curve 0° 12′; but if centres are 25 ft. apart, it would change the degree of curve 0° 48′ for 50 ft., and perhaps give the trackman a poor idea of the transitman's ability, especially if the next centre and others are similarly off in opposite directions. However, if the transitman has any doubt of the accuracy of points at the far end of spiral, he may readily check back on one or two points with transit at the other end.

It may also be suggested as a good plan in running track centres between two hubs on a curve or spiral, that the chaining be done towards the instrnment

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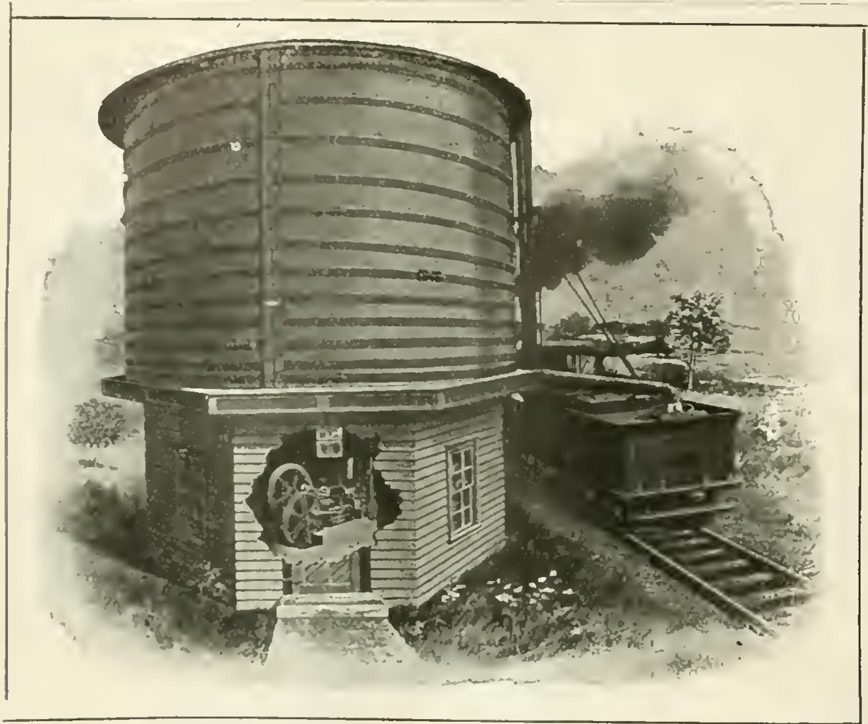
*The main offset X = L sin T is more correctly X = C sin T; C being the long chord of spiral, whence p = ¼ C sin T. The difference is hardly appreciable. The long chord of spiral is approximately that of a simple curve of same length whose degree of curve is half that of the main curve. The error in value of p, using L instead of C, for certain spirals of different lengths and degrees of curve is as follows:

Degree.	I.	Length L.	Error in p.
4°	7° 12′	360′	0.0027 ft.
6°	7° 12′	240′	0.0016 ft.
10°	10° 00′	200′	0.0038 ft.
10°	12° 30′	250′	0.0098 ft.

It will be observed that the error does not approach 0.01 ft., except for the 10° curve with total angle of 12° 30′.



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The train leaves as follows:

Leave North Parkdale - - -	9.15 p.m.	Arrive Ottawa, 6.50 a.m.
Leave West Toronto - - -	9.30 p.m.	Arrive Montreal 7.00 a.m.
Arrive North Toronto - - -	9.40 p.m.	Daily except Sunday.
Leave North Toronto - - -	10.00 p.m.	Will Stop at Westmount.

¶ The residents of Toronto are adjacent to either North Parkdale, West Toronto or North Toronto stations, same being easily accessible and closer to residential districts.

¶ The North Toronto route is over an hour faster and overcomes a long hill climb for the train out of Toronto, obviating any inconvenience and ensuring early arrival at Montreal and Ottawa.

¶ The roadbed has been improved till it is unexcelled in Canada.

¶ The equipment is "Canadian Pacific Standard," a synonym for the "best" and attentive porters, non-obsequious, ensure efficient service.

SLEEPING CAR SPACE HELD

Toronto City Office, 16 King St. East

North Toronto Station **King Edward Hotel** **West Toronto Station**

so that any error in distance will fall at the instrument instead of at the far end, where the line of sight is at a considerable angle across the track.—Engineering News.

Robt. S. Beard, of Kansas City, Mo., writes in reference to the above:—Mr. Howard's article prompts me to submit a formula for the length of spiral, which I developed several months ago while converting tables of spirals into metric units for use in Mexico.

Using the following notation:

E=elevation of curve in inches.
g=gauge of track.
V=velocity in miles per hour.
v=velocity in feet per second$=\frac{22}{15}V$
D=degree of curve.
R=radius of curve.
L=Length of spiral in feet.

the formula for theoretical superelevation is,

$$E=\frac{g\,v^2\times 12}{32.16\ R}=\frac{g(\frac{22}{15}V)^2D}{32.16\times5730}\times 12$$

$$=.0001404\ DV^2g$$

$$=.000661\ DV_2 \text{ when } g=4 \text{ ft. } 8\tfrac{1}{2} \text{ ins.}$$

$$=.000689\ DV^2 \text{ for 85-lb. rail with } 2\ 9\text{-}16\text{-in head.}$$

$$=.000685\ DV^2 \text{ for 55-lb. rail with } 2\tfrac{1}{4}\text{-in. head.}$$

Prof. A. N. Talbot's formula, $E=.00069\ DV^2$, is based on the fact that the track level gauge is the width of the rail head wider than the track gauge.

The reports on spirals from all the main roads in the country to the American Railway Engineering and Maintenance of Way Association in 1909 brought out the fact that the maximum rate of attaining elevation on curves without discomfort to passengers is about 1⅛ in. per sec. on tangent and spiral, and according to the New York Central report by C. J. Parker, Prin. Asst. Engr., ⅝ in. per sec. where the runoff is on straight track (see pp. 420, 422, Part 1, Vol. 10 of the A. R. E. & M. W. Assoc. Proceedings).

Since the elevation of the curve is E inches, at the rate of 1⅛ inches per second it would take $\frac{E}{1\frac{1}{8}}$ or $^6/_7$ E seconds to attain the full curve elevation. The distance traveled in attaining this elevation would be $\frac{6}{7}$ E v feet.

Therefore the length of spiral,

$$L=\frac{6}{7}E\,v$$

$$=\frac{6}{7}\times.00066\ DV^2\times\frac{22}{15}V=.000830\ DV^3$$

$$=\frac{DV^2}{1200}$$

Calling a the rate of change of degree of curve in 100 ft.,

$$a=\frac{100\ D}{L}=\frac{120000}{V^3}$$

To find the formula for any other rate multiply the above formula by the inverse ratio of the new rate to the rate of 1⅛ ins. per sec.

The run-off rate of ⅝-in. a second requires that

$$L={}^7/_5\times.00083\ DV^3=.00116\ DV^3,$$

Using Prof. Talbot's formula for elevation, $E=00069\ DV^2$, and a rate of 1 in. per sec., the formulas are,

$$L=\frac{D\ V^3}{1000} \text{ and } a=\frac{100000}{V^3}$$

The value found from the above agrees with his recommended lengths of spirals for different speeds.

It is my opinion that the spiral should receive the same grade compensation as the curve with which it connects as a rough allowance for the extra resistance on the spirals due to the force required to twist the trucks, change the relative position of the cars, and attain the curve elevation.

W. G. Raymond writes from the Iowa State University as follows:—If the curve be laid in with six equal chords, the deflection for the first chord in seconds is the length of the chord in feet multiplied by the degree of the central curve, and the following deflections are 4, 9, 16, 25, and 36 times this.

If the curve be laid in with ten equal chords, the first deflection in minutes is the length of the chord stations multiplied by the degree of the central curve, and the following deflections are as before.

These are both approximate rules, but entirely good for spirals whose total central angles do not exceed 15°. Both rules are given in the subscriber's Railroad Field Geometry. The second rule is due to Jenks B. Jenkins.

Railway Rolling Stock Notes.

The G.T.R. has received the last consignment of 1,000 box cars, which were ordered in the U.S. last May.

The G.T. Pacific Ry. has received 162 flat cars, nos. 361438 to 361599, and 132 box cars, nos. 312325 to 312456, from the Canadian Car and Foundry Co., Montreal.

The G.T.R. has received 101 automobile cars, being the last consignment of 500, of which we have already given details, and which were ordered in the U.S.

The C.P.R., between Dec. 11 and Dec. 31, 1910, ordered 50 vans, 50 freight refrigerator cars, 50 passenger refrigerator cars and six D.10 locomotives, to be built at its Angus shops, Montreal.

The Algoma Central and Hudson Bay Ry. has ordered 10 superheater consolidation freight locomotives, weight in working order 194,000 lbs.; cylinders, 22½ in. by 28 in.; driving wheels 56 in. diar., from the Montreal Locomotive Works.

The Intercolonial Ry., between Dec. 17 and Jan. 18, placed the following replace orders at its Moncton shops: 50 steel frame box cars, 60,000 lbs. capacity; 50 wood box cars, 60,000 lbs. capacity; three colonist cars, 36 platform cars, 80,000 lbs. capacity.

The five second class and baggage cars, which the Canadian Northern Ry is having built by the Preston Car and Coach Co., Preston, Ont., will be 72½ ft. long over body, with inside finish of birch, lighted with acetylene gas, and equipped with six-wheeled trucks with journals 4¼ in. by 8 in., and Westinghouse air brakes, type P.M. 1612.

The C.P.R., between Dec. 11 and Dec. 31, 1910, received the following additions to rolling stock: Six horse cars, one first class car, two second class cars, four baggage and express cars, three flangers and three D.10 locomotives from its Angus shops, Montreal; 20 tank cars and six steel snow plows from the Canadian Car and Foundry Co., Montreal, and one rotary snow plow from the Montreal Locomotive Works.

Following are the chief details of the 250 steel underframe flat cars, which the Canadian Northern Ry. is having built by the Canadian Car and Foundry Co., Montreal:

Capacity	80,000 lbs.
Truck centres	31 ft. 2 in.
Length over end sills	41 ft. 0¼ in.
Width over side sills	8 ft. 10 in.
Height from rail over flooring	4 ft. 2¾ in.
Flooring	2⅜ in. ship lapped
Couplers	Janney 5 in. by 7 in.
Truck bolsters	Simplex
Brake beams	Simplex 6 in.
Journal boxes	McCord Mall. Iron
Journal bearings	M.C.B. lead lined
Truck springs	M.C.B. class C

Following are the chief details of the one eight-wheeled hump switching locomotive which the C.P.R. is building at its Angus shops, Montreal, as mentioned in our last issue:—

Weight in working order	188,000 lbs.
Weight of tender loaded	134,000 lbs.
Weight of tender, light	59,000 lbs.
Capacity, water	5,000 imp. gals.
Capacity, coal	12 tons
Heating surface, firebox	182 sq. ft.
Heating surface, tubes	2,305 sq. ft.
Heating surface, total	2,487 sq. ft.
Grate area	49 sq. ft.
Tubes, no. and diar.	349 2 in.
Boiler, type	Extended wagon top, radial stayed
Boiler pressure	200 lbs.
Wheel base, driving	15 ft. 10 in.
Cylinders	21 in. by 28 in.
Valves	11 in. piston
Driving wheels, diar.	52 in.
Axles, main	9½ in. by 12 in.
Axles, others	9 in. by 12 in.
Axles, tender	5½ in. by 10 in.
Brake	Westinghouse ET6
Lubricator	Detroit 21

Following are the chief details of the 10 six-wheeled switching locomotives which the C.P.R. is building at its Angus shops, Montreal, as mentioned in our last issue:—

Weight in working order	130,000 lbs.
Weight of tender loaded	90,000 lbs.
Weight of tender light	44,000 lbs.
Capacity, water	3,500 imp. gals.
Capacity, coal	10 tons
Heating surface, firebox	138 sq. ft.
Heating surface, tubes	1,406 sq. ft
Heating surface, total	1,544 sq. ft
Grate area	29 sq. ft
Tubes, no. and diar.	234 2 in.
Boiler, type	Straight top, radial stayed
Boiler pressure	200 lbs.
Wheel base, driving	11 ft. 6 in.
Cylinders	18 in. by 26 in.
Valves	11 in. piston
Valve gear	Walschaert
Driving wheels, diar.	52 in.
Axles, driving	8½ in. by 10 in.
Axles, tender	5 in. by 9 in.
Brakes	Westinghouse ET6
Lubricators	Detroit 21

Following are the chief details of the 10 six wheeled switching locomotives which the Canadian Northern Ry. is having built by the Canadian Locomotive Co., Kingston, Ont.:

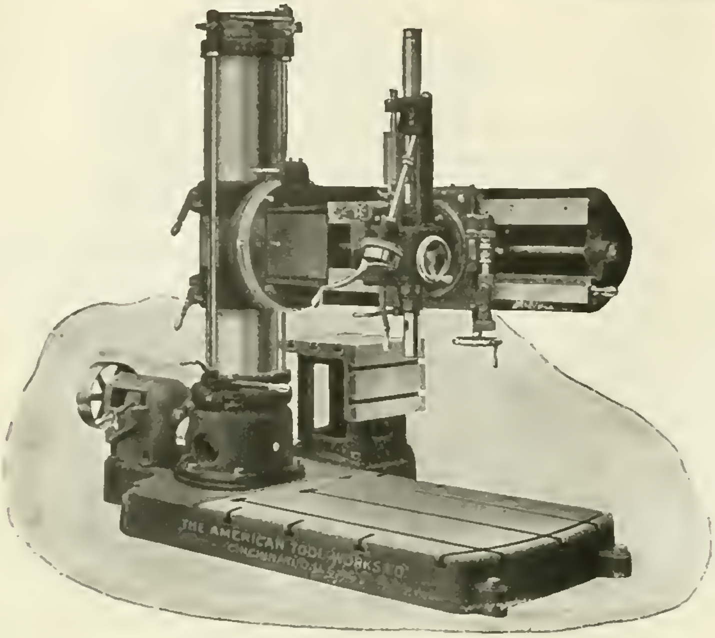
Weight in working order	123,000 lbs.
Wheel base of engine, rigid	11 ft. 0 in.
Wheel base, engine and tender	39 ft. 1 in.
Heating surface, firebox	131 sq. ft.
Heating surface, tubes	1,206 sq. ft.
Heating surface, total	1,337 sq. ft.
Driving wheels, diar.	50 in.
Driving wheel centres	Cast iron
Driving journals	8½ by 10 in.
Cylinders	19 by 26 in.
Boiler, type	Radial stayed
Boiler pressure	180 lbs.
Tubes, no. and diar.	223 2 in.
Tubes, length	10 ft. 5 in.
Brakes	Westinghouse American
Weight of tender loaded	86,000 lbs.
Capacity, water	3,500 imp. gals.
Capacity, coal	5 tons
Tank style	Sloping back
Truck	Arch bars with steel bolsters
Wheels, diar.	33 in.
Wheels, type	Steel tired
Journals	4¼ by 8 in.
Brake beam	Steel trussed

Following are the chief details of the six D.10 locomotives which the C.P.R. is building at its Angus shops, Montreal, as mentioned in our last issue:—

Weight on drivers	143,000 lbs.
Total weight	193,000 lbs.
Weight of tender loaded	134,000 lbs.
Capacity, water	5,000 imp. gals.
Capacity, coal	10 tons
Heating surface, firebox	180 sq. ft
Heating surface, flues	2,238 sq. ft.
Heating surface, total	2,418 sq. ft.
Heating surface, superheater	408 sq. ft.
Grate area	49 sq. ft.
Tubes, no. and diar.	240 2 in. 24 5 in.
Wheel base, rigid	14 ft. 10 in.
Wheel base of engine	26 ft. 1 in.
Wheel base, engine and tender	54 ft. 10¼ in.
Boiler, type	Extended wagon top
Boiler, pressure	200 lbs.
Superheater	Vaughan-Horsey
Staying	Radial
Cylinders	21 in. by 28 in
Driving wheels, diar.	63 in
Valve gear	Walschaert
Valve, type	11 in. piston
Axles, main	9½ in. by 12 in.
Axles, others	9 in. by 12 in.
Axles, tender	5½ in. by 10 in.
Axles, engine truck	6 in. by 10 in.

Following are the chief details of the 20 consolidation locomotives which the Canadian Northern Ry. is having built, as mentioned in our last issue:—

Tractive effort	45,000 lbs.
Weight in working order	215,000 lbs
Weight on drivers	190,000 lbs
Weight on leading truck	25,000 lbs.
Wheel base driving	16 ft. 6 in.
Wheel base, total	25 ft. 5 in.
Cylinders	Simple, 24 in. by 32 in.
Boiler, type	Extended wagon top
Boiler pressure	180 lbs.
Boiler, outside diar. of first ring	72 in.
Firebox, length and width	110 in. by 64 in.
Firebox plates, thickness, crown and back	tube ⅝ in. side 5-16 in.
Firebox, water space	Front 5½ in., sides and back 4½ in.
Tubes, no. and diar.	272 2 in
Valves	12 in. piston
Driving wheels, diar.	63 in.
Driving wheels, thickness of tires	3½ in.
Driving journals	10 in. by 14 in
Truck wheels, diar.	30 in.
Truck journals	6 in. by 12 in.
Tender, wheels, diar.	33 in.
Tender, journals	5½ in. by 10 in.
Capacity, water	6,000 imp. gals.
Capacity, coal	10 tons



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The arm of our newly designed Full Universal Radial Drill is equally as rigid as that of the "American" Plain Radial.

The Arm is made in the form of upper and lower tube sections bound together by a Double Wall of metal reinforced by heavy transverse ribbing.

The saddle is unusually wide and rigid, and can be firmly locked at any point along the arm by means of a powerful clamping device which binds together the double arm sections and saddle into a very compact unit.

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The tapping attachment is located near the girdle of the arm and is operated by a lever on the head, conveniently placed for the operator.

This is a valuable feature as it permits the use of More Literal proportions in the tapping attachment and also in the saddle mechanism.

The Head is Triple Geared and every gear in same is steel.

This new drill, without exception, is the very highest development of Full Universal Radial Drill Construction.

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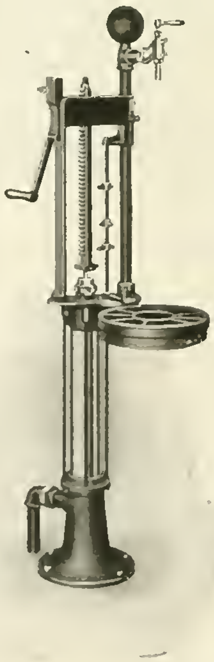

is not hampered by space limitations when the Bowser Outfit No. 126 is used. A floor space of less than two square feet is sufficient for the pump, and the tank is kept outside, buried underground near the track where it can be conveniently filled direct from supply cars. This outfit exemplifies the thoroughness with which every detail in

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MAINLY ABOUT PEOPLE.

E. B. Osler, M.P., left Toronto in the middle of January for a visit to Egypt.

E. Hickson, of the Intercolonial Ry. advertising department, died at Moncton, N.B., recently

H. McDonald, for a number of years engaged in contracting on the C.P.R., died at Ottawa. Dec. 30.

W. G Payton. C.P.R. baggage master, Vancouver. B.C., was presented with a gold watch by the local staff recently.

Mrs. Cunard, widow of the late Wm. Cunard, formerly of S. Cunard and Co., Halifax, N.S., died at Nice, France, recently.

F. C. Young, who was, at one time, Treasurer Quebec Central Ry., for a short period, died at Berlin, Ont., Jan. 11.

J. C. Hays, accountant in the C.P.R. ticket department, Montreal, died there, Jan. 11, after a three months' illness, aged 50.

A. Begg, who was a contractor on the Ottawa, Arnprior and Parry Sound Ry., now part of the G.T.R., died at Ottawa recently.

Mrs. Gormally, who died in Toronto, Jan. 17, aged 63 years, was widow of W. C. Gormally, at one time Superintendent Union Station, Toronto.

H. G. Kelley, Chief Engineer G.T.R., returned to Montreal from a short trip through Texas and the South West, early in January.

Mrs. G. R. Joughins, wife of the Superintendent of Motive Power Intercolonila Ry., Moncton, N.B., is seriously ill, at Dannsville, N.Y.

J. B. Marks, operator and ticket agent, M.C.R., at Windsor, Ont., pleaded guilty to the theft of $15 and a ticket to San Francisco, and was liberated on suspended sentence.

E. Pennington, President Minneapolis, St. Paul and Sault Ste. Marie Ry., sailed from St. John, N.B , Dec. 30 for a holiday trip to Europe.

G. McL. Brown, European Manager, C.P.R., London, Eng., and Mrs. Brown visited Canada in January, and sailed from New York for England Jan. 21.

D. T. Kyle has been appointed Assistant General Secretary of the C.P.R., centre of the St. John Ambulance Association Eastern Lines, with headquarters at Montreal.

C. M. Hays, President G.T.R. and G.T.P.R., responded to the toast of the railways at the annual dinner of the Canadian Manufacturers' Association, Montreal Branch, Jan. 9.

P. F. Weisbrod, C.P.R. Trainmaster, Brandon, Man., was presented with a gold watch by the passenger staff of the district at Winnipeg, on his transfer to Cranbrook, B.C.. recently.

Miss A E. Lanigan, daughter of W. B. Lanigan, Assistant Freight Traffic Manager Western Lines C.P.R., Winnipeg, was married there recently to E. D. McCallum.

R. M. Boyd, Commercial Agent Chicago, Milwaukee and Puget Sound Ry., and of the Chicago, Milwaukee and St. Paul Ry., at Seattle, Wash., is a native of Brockville. Ont.

Lieut.-Colonel Higinbotham, who died at Guelph, Ont., Jan. 9, was one of the principal promoters of the Wellington, Grey and Bruce Ry., now part of the G.T.R. system.

The engagement is announced of Miss Elma Reid, elder daugther of the late Robt. Reid, one of the National Transcontinental Ry. Commissioners, to Gordon Ingram, of London, Ont. .

G. E. Hyde, Chief Engineer St. Mary's and Western Ontario Ry.. was presented with an arm chair, by the congregation of Knox Church. St. Marys, Ont., on his leaving for Calgary, Alta., recently.

W. R. Cunningham, Superintendent Sleeping, Dining and Parlor Cars and News Service, Calgary, Alta., was presented with $100 by the department staff there, Jan. 5, on leaving Calgary for Montreal.

In connection with the report that C. G. Bowker, Assistant Superintendent G.T.R., London, Ont., had resigned to enter Lehigh Valley Ry. service, we are officially advised that there is no truth in the statement.

S. S. Underwood, chief draughtsman G.T.R. Car Department, Montreal, was presented, recently, with a fitted travelling bag, and a brooch for his wife, by the staff, on his leaving the service, to enter that of Taylor & Arnold, Ltd.

J. R. Gilhula, heretofore Trainmaster Pere Marquette Rd., St. Thomas, Ont., resigned the position, Jan. 20, when he left for St. Louis, Mo., where he has been appointed Superintendent Illinois Traction Co.

A. J. Grant has been appointed Superintendent of Construction Eastern Division C.P.R. Telegraphs, vice J. Townsley, retired, and S. L. Elliott has been appointed General Inspector Eastern Division.

E. L. Cousins, formerly Resident Engineer G.T.R.. Toronto, and now in charge of the railway work of the Toronto city works department, has also been appointed to take charge of the city bridge work.

W. B. Bulling, Assistant Freight Traffic Manager C.P.R., Montreal, has returned to duty after several months absence, principally in Europe, on account of ill health. W. M. Kirkpatrick, General Freight Agent (Through Freight) acted in his stead.

Toronto Mail.—It is pleasant to believe that the recent knighthoods are not inflating their recipients, and making them too aristocratic. In one instance. at least, it is clear that the rank is but the guinea stamp, and that

"A Mann's a Mann for a' that."

Sir William Mackenzie, President Canadian Northern Ry., has purchased a block of property on Queen St., West, Toronto, opposite University Avenue, which local reports wrongly stated, was to be used for the erection of new headquarters of the company.

J. W. Loud, Freight Traffic Manager G.T.R., and G. W. Stephens, Chairman Montreal Harbor Commission, have been elected President, and a member of the committee of management, respectively, of the Church of the Messiah, Montreal, for the current year.

E. E. Cain, who was some time, ago, Trainmaster Pere Marquette Rd., at St. Thomas, Ont., and later at Detroit, Mich., has been appointed Superintendent Wellston Division, Cincinnati, Hamilton and Dayton Rd., vice J. W. Anderson.

W. H. Grant, of Mackenzie, Mann and Co.'s Construction Department. who was Manager of Construction Portland Canal Short Line Ry., Stewart, B.C. has been much benefited by his stay at Mount Clemens, Mich., and has returned to headquarters at Toronto.

W. M. Heath. who died at Portage la Prairie, Man,. recently, was a river freighter in the early days of the settlement of the Northwest At one time he had among his employes J. J. Hill, now Chairman of the Board of Great Northern Ry.

J. P. Mabee, Chief Railway Commissioner. returned to Canada, Jan. 4, from Washington, D.C., where he had been in connection with the conference relating to the establishment of an international board for dealing with railway matters affecting Canada and the U.S.

H. W Williamson, who was for some years station agent and latterly chief freight clerk C.P.R. at Fredericton, N.B., has retired from active service. He started work at Fredericton station in Dec., 1869, and has remained there ever since under the different companies which have had control of the line.

C. L. Clarke, Bridge and Building Master District I, Atlantic Division, C.P.R., Fredericton Jct., N.B., was presented with a fur coat and cap, a gold headed cane, hand bag and $50, by a number of fellow employés, Jan. 3, on his retiring from active service.

J. S. Dennis, Manager C.P.R. Irrigatoin and Land interests in Alberta and British Columbia, was expected to return to Canada from Great Britain, at the end of January. During his visit, he lectured before the Royal Geographic Society in London, Edinburgh Glasgow, and at other points.

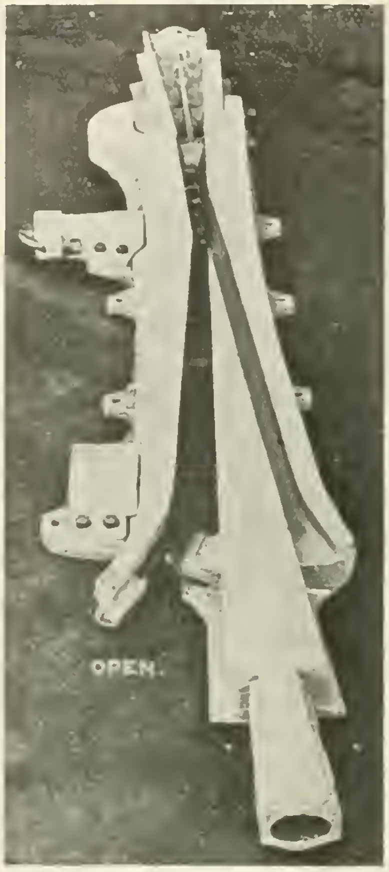
Sir Geo. C. Gibbons, whose name was included in the list of New Year honors granted by the King, is Chairman of the Canadian Section of the International Waterways Commission, and was especially identified with the negotiations leading up to the Boundary Waters Treaty between Canada and the U.S.

X. H. Cornell, who has been appointed Inspector of Transportation, Toledo, St. Louis and Western Rd., and Chicago and Alton Rd., Chicago, Ill, was, from 1903 to Nov. 30, 1909, consecutively, Chief Dispatcher, Train Master and Master of Transportation Western Division G.T.R., Durand, Mich., which last position he resigned to become Chief Supervisor Michigan Car Demurrage Supervising Bureau.

J. T. B. Caron, whose appointment as a member of the Government Railways Managing Board, was announced in our last issue, was born at Garneau, Que., Nov. 29, 1869, and was educated in Ontario public schools and Laval University, Quebec, where he obtained the A.B. degree in 1894. He subsequently practised law at Osgoods Hall, Toronto, and was called to the bar in 1898. He took a prominent part in the elections in Eastern Ontario, and was elected to the House of Commons in 1907, and was a candidate in L'Islet county in 1908, when he was defeated.

H. D. Annable. Export Freight Agent C.P.R., New York, who died there, Jan. 10, was born at Ottawa, Aug. 6, 1871, and entered C.P.R. service in 1891, since when, he was to 1892, in the Freight Department at Ottawa; 1892 to 1898, in Freight Department, Montreal; 1898 to 1901, Travelling Freight Agent; 1901 to 1903, Foreign Freight Agent, London, Eng.; 1903 to Apr. 1910, General Freight Agent. London, Eng.; in April, 1910, he was appointed Export Freight Agent at New York, which position he held up to the time of his death. W. G. Annable, General Passener Agent C.P.R. Atlantic Steamship Service, is a brother.

Sir Donald D. Mann, on whom a knighthood was conferred Jan. 1, was born at Acton, Ont., Mar. 23, 1853. In his earlier years he was chiefly connected with the lumber trade, and became a contractor for the construction of a portion of the C.P.R. in 1880, working between Whitemouth and the Selkirk mountains. He entered into partnership with Wm. Mackenzie in 1886, since when they have been associated in contracting, and later in the building up of the Canadian Northern Ry. system. Among the positions held by him are: Vice President Canadian Northern Ry., Winnipeg Electric Ry., President North Star Mining Co., Director Dominion of Cana-



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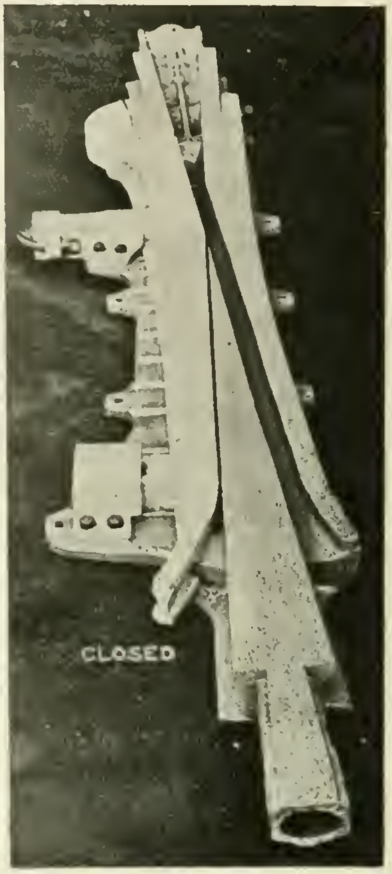

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CANADA'S THREE NEW RAILWAY KNIGHTS

Sir Donald D. Mann.

Sir Thomas Tait.

Sir William Mackenzie.

da Guarantee and Accident Insurance Co., Manufacturers Life Insurance Co., etc.

Frederick Passmore Gutelius, who has been appointed General Superintendent Eastern Division C.P.R., Montreal, was born at Mifflinburg, Pa., Dec. 21, 1864, and graduated from Lafayette College as civil engineer, in 1887. He entered railway service in 1888, since when he has been consecutively, to 1892, Assistant Engineer and Assistant Supervisor Pennsylvania Rd., Pittsburg, Pa.: 1885 to 1898, General Superintendent Columbia and Western Ry.; 1898 to 1900, Superintendent C.P.R., Nelson, B.C.; 1900 to 1902, in various positions in the C.P.R. Engineering Department; 1902 to Mar. 1906, Engineer Maintenance of Way, C.P.R., Montreal; Mar., 1906, to Sept. 15, 1908, Assistant Chief Engineer Eastern Lines Montreal; Sept. 15, 1908, to Dec. 30, 1910, General Superintendent Lake Superior Division, C.P.R., North Bay, Ont.

E. W. Duval, whose appointment as Superintendent District 1, Saskatchewan Division, C.P.R., Moose Jaw, was announced in our last issue, was born at Toledo, Ohio, June 5, 1885, and entered railway service July 1, 1902, since when he has been, to June 1, 1905, in Superintendent's office, C.N.R., Winnipeg; and at Port Arthur, Ont.; June 1, 1905 to Jan. 2, 1911, successively, secretary to General Superintendent Central Division C.P.R., Winnipeg; chief clerk to Superintendent District 2, Central Division, C.P.R., Winnipeg, assistant chief clerk to General Superintendent Central Division C.P.R., Winnipeg; chief clerk to General Superintendent Western Division C.P.R., Calgary, Alta.; chief clerk to Assistant General Manager and later to General Manager Western Lines C.P.R., Winnipeg; and Trainmaster C.P.R. terminals, Calgary, Alta.

Miss Grace Mackenzie, daughter of Sir William Mackenzie, President Canadian Northern Ry., was married to Comte Jacques de Lesseps, at St. James Church, Spanish Place, London, Eng., Jan. 25. The bride was attended by her sisters, Mrs. W. W. Beardmore and Miss Ethel Mackenzie, and her cousin, Miss Mabel Meagher, Gilbert Griffin acting as train bearer. Among those present at the ceremony were Sir William and Lady Mackenzie, J. M. Mackenzie, Mrs. Grantham, W. W. and Mrs. Beardmore, Scott and Mrs. Griffin, R. M. and Mrs. Horne Payne, Mrs. Meagher, Lord Strathcona, etc. A reception was subsequently held at Claridge's Hotel, and later the bride and groom left for Upper Egypt, where the honeymoon will be spent. On their return it is probable that they will reside in Paris, France.

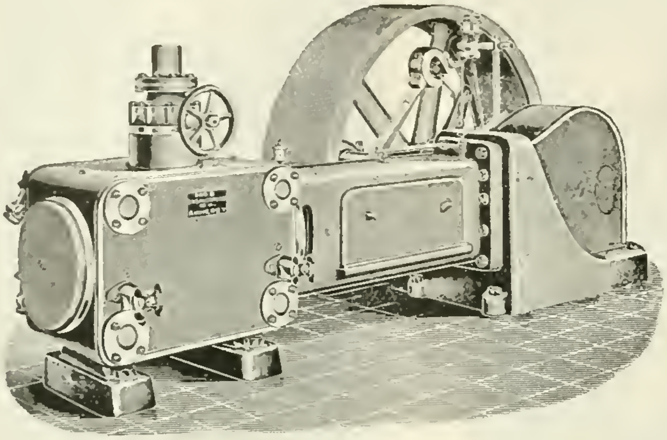
"No other man knows the Canadian West any better than Wm. Whyte knows it; there is some reason to doubt whether any other man knows it as well. He has been standing guard over C.P.R. interests at Winnipeg for a quarter of a century, and Winnipeg is by common consent the gateway of the West. During these 25 years he has filled the positions of General Superintendent of the Western Division, Manager of the lines west of Lake Superior, Assistant to the President, Second Vice President and Vice President. He has seen the C.P.R. system develop into one of the greatest railway systems in the world, and he has had much to do with promoting that development. He has seen the process of settlement going on, slowly at first, but quite rapidly in recent years, and he has watched with intelligent and sympathetic interest the evolution of the great agricultural industry."—Toronto Globe.

Wm. Bunton, G.T.R. city ticket agent, Peterboro, Ont., died at Toronto, Jan. 17, of Bright's disease. He was one of the best known of ticket agents on the continent, and was a most active member of the Canadian Ticket Agents Association, in which he had been a member of the executive committee, Vice President, and President. The funeral took place at Burlington, Ont., Jan. 19, a special car being provided from Toronto. The following acted as pall bearers: B. H. Bennett, General Agent Chicago and North Western Ry.; A. J. Taylor, Canadian Freight and Passenger Agent Chicago, Milwaukee and St. Paul Ry.; H. G. Thorley, Passenger Agent International Mercantile Marine Co.; H. F. Bradley, Agent Allan Line; J. D. McDonald, District Passenger Agent G.T.R.; C. E. Horning, City Passenger and Ticket Agent G.T.R., of Toronto.

Sir Thomas Tait, on whom a knighthood was conferred, Jan. 1, was born at Melbourne, Que., July 24, 1864, and entered railway service Sept. 1880, since when he has been, to July, 1881, clerk G.T.R. Audit Department; July to Oct., 1881, clerk in office of Assistant to President Chicago and Grand Trunk Ry.; Oct., 1881, to Apr., 1882, clerk in G.T.R. Solicitor's Office, Belleville, Ont.; Apr. to Oct., 1882, clerk General Manager's office, G.T.R.; Oct., 1882 to Sept. 1886, private secretary to Vice President and General Manager, C.P.R.; Sept., 1886, to May, 23, 1887, clerk General Traffic Manager's office, C.P.R.; May 23, 1887, to Feb. 1, 1889, Assistant Superintendent C.P.R., Moose Jaw, Sask.; Feb. 1, 1889, to Mar. 12, 1890, Superintendent Ontario Division C.P.R., Toronto; Mar. 12, 1890, to Mar. 1, 1893, General Superintendent Ontario and Quebec Division, C.P.R.; Mar. 1, 1893, to May 3, 1897, Assistant General Manager C.P.R.; May 3, 1897, to Apr., 1901, Manager C.P.R. Eastern Lines; Apr., 1901, to Mar., 1903, Manager of Transportation, C.P.R. He sailed from Vancouver for Australia, May 1, 1903, having received the appointment of Chairman of the Victorian Railway Commissioners, which position he resigned in Sept. 1910.

J. G. Sullivan, who has been appointed Assistant Chief Engineer Western Lines, C.P.R., was born at Bushnell's Basin, N.Y., Jan. 11, 1863, and graduated C.E. at Cornell University, June, 1888. He entered railway service July, 1888, since when he has been, to Mar. 1889, rodman Great Northern Ry., U.S.; Apr., 1889 to Aug., 1890, rodman, instrument man and assistant engineer Spokane Falls and Northern Ry., Aug., 1890, to May, 1893 assistant engineer Great Northern Ry., U.S. coast lines; July 1893, to Feb. 1894, assistant engineer Alberta Ry. and Coal Co.; July to Oct., 1894, section foreman Northern Pacific Ry.; Oct., 1894 to Apr., 1895, locating engineer, Butte, Anaconda and Pacific Ry.; Apr. to Dec., 1895, Division Engineer, Kaslo and Slocan Ry.; Dec., 1895, to Feb., 1901, locating and reconnaissance engineer and engineer in charge of construction Columbia and Western Ry.; Feb., 1901, to Sept. 1905, Division Engineer Construction Department Western Lines, C.P.R.; Sept.

ROBB CORLISS ENGINES



Have the Armstrong-Corliss valve gear, which will operate at a higher speed than the ordinary releasing gear.

This valve gear does not depend on springs or dash pots for closing and runs without noise.

The wearing parts of the valve gear are enclosed in a casing and run in oil so that friction is reduced to a minimum.

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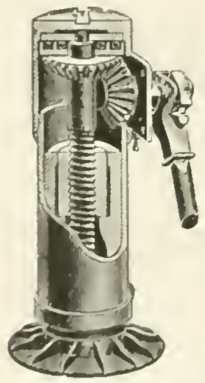
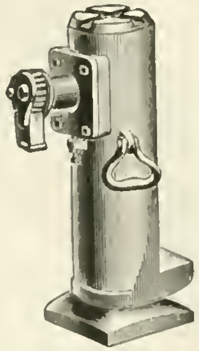


Sectional View



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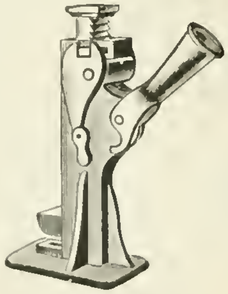

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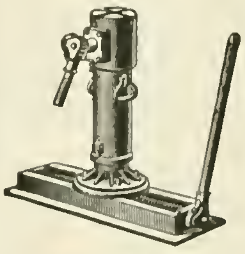

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1905, to Feb. 1907, Assistant Chief Engineer Panama Canal; Feb. 1907, to Sept 15, 1908, Manager of Construction Eastern Lines, C.P.R., Toronto; Sept. 15, 1908 to Jan. 1, 1911, Assistant Chief Engineer Eastern Lines C.P.R., Montreal. He was elected a member of the American Society of Civil Engineers in 1899, and is also a member of the Canadian Society of Civil Engineers.

Capt. Alex. Gray, late master of the Hudson Bay Co.'s auxiliary steamship Pelican, died at his residence, Fairleigh, Sutton, Eng., recently, aged 70. He was a native of Peterhead, and gained an unrivalled experience of Arctic navigation while engaged in the whaling industry with his brother, Capt. John Gray, who was known as the "Prince of Whalers." On Feb. 1, 1871, Capt. Alex. Gray entered the H.B. Co.'s service as commander of the s.s. Labrador, and besides delivering cargoes to, and collecting returns from, the company's posts along the coast of Labrador and Ungava, he prosecuted the Greenland seal fishery until that portion of the company's trade was relinquished in 1881. He served one more voyage in the Labrador, and resigned in 1883 to resume the pursuit of the leviathans of the Arctic deeps in the s.s. Erik, in which he held a large interest. In 1888 the H.B. Co. purchased the s.s. Erik, and the year 1891 saw Capt. Gray reinstated in the service as her commander. With the exception of the year 1905, when he commanded the s.s. Discovery (Capt. (Scott's Antarctic ship) on a voyage to James Bay, Capt. Gray served as master of the s.s. Pelican from 1901 to the date of his retirement on May 31, 1909, having made 30 of the most arduous voyages to the inhospitable and uncharted shores of Labrador and Hudson's Bay. —Canadian Gazette.

Sir William Mackenzie, whose name was included in the recent list of New Years honors, was born at Kirkfield, Ont., Oct. 30, 1849, and was educated at the public and Lindsay Grammar schools. His first connection with railway work, was as contractor for the construction of the Victoria Ry., now the G.T.R. Middle Division, and upon completion of this, he took contracts for building various portions of the C.P.R., carrying out considerable construction work in the Rocky Mountains. A partnership with D. D. Mann, commencing in 1886, was responsible for other railway construction, including the Calgary and Edmonton Ry., Qu'Appelle, Long Lake and Saskatchewan Ry., the C.P.R. short line through Maine, and in 1896 was commenced the 100 miles of the Lake Manitoba Ry. and Canal Co.'s line, from which has grown the Canadian Northern Ry. system of today. Among the positions held by him are: President Canadian Northern Ry., Toronto Ry., Toronto and York Radial Ry., Toronto and Niagara Power Co., Winnipeg Electric Ry., Sao Paulo Tramway, Light and Power Co., Monterey Ry., Light and Power Co., and Chairman and President Rio de Janeiro Tramway, Light and Power Co., Vice President Electrical Development Co. of Ontario, Director Canadian General Electric Co., Central Canada Loan and Savings Co., Dominion Securities Corporation, Imperial Life Assurance Co. of Canada, Manufacturers Life Assurance Co., National Trust Co., North Star Mining Co., and Shawinigan Water and Power Co. He is a member of the York, Toronto, Albany, National and Hunt Clubs, Toronto, and the Rideau Club, Ottawa.

J. W. Leonard, who has been appointed Assistant to the Vice President, C.P.R., Montreal, was born at Epsom, Ont., 1858. He entered railway service, 1872, since which his record has been: 1872 to Aug., 1877, telegraph operator and agent, Midland Ry. of Canada; Aug., 1877, to Dec., 1878, agent Victoria Ry.; Dec., 1878, to Mar., 1880, assistant manager, same road; Mar. to June, 1880, assistant to General Superintendent Credit Valley Ry.; June, 1880, to Nov., 1883, General Passenger Agent same road; Nov., 1883, to May, 1884, Master of Transportation, Ontario and Quebec Ry.; May, 1884, to Mar., 1887, Superintendent C.P.R., at Toronto; Mar., 1887, to Mar., 1890, Superintendent Kamloops; Mar., 1890, to Mar., 1893, Superintendent lines east of Montreal, same road; Mar., 1893, to April, 1901, General Superintendent Ontario and Quebec Division, same road, Toronto; April, 1901, to Mar., 1903, General Superintendent Western Division same road, Winnipeg; Mar. to April, 1903, General Superintendent Central Division, same road, Winnipeg; April, 1903, to Jan. 1904, Assistant Manager, C.P.R. lines west of Lake Superior, Winnipeg. After some months spent in travelling, Mr. Leonard was elected President Guelph and Goderich Ry., and in Feb., 1905, was appointed Manager. of Construction, C.P.R. lines in Ontario, and in Oct., 1905, Assistant General Manager, C.P.R. Eastern Lines, in charge of maintenance of way and operation, and also of the construction of new lines in Ontario, which combined positions he held until the appointment of J. G. Sullivan as Manager of Construction Eastern Lines, leaving him solely to the duties of Assistant General Manager Eastern Lines in charge of maintenance of way and operation to Feb. 1908, when he was appointed General Manager Eastern Lines in charge of maintenance of way and operation, with office at Montreal.

◆

Canadian Sleeping Car Rates.

On Dec. 29 the C.P.R. issued a local standard passenger tariff of sleeping car tolls, which was filed with the Board of Railway Commissioners, the Board ordering that the same be spoken to in Montreal on Jan. 23. The tariff, to become effective Feb. 1, provides the following rates for lower berths in standard sleeping cars; east of Calgary, Macleod and Edmonton, 6 mills a mile; west of Calgary, Macleod and Edmonton, 8 mills a mile. Any fraction of 25c. less than 12½ cents to be thrown off, and anything above 12½c to be charged at 25c. Minimum charge for lower berth, $1.50. A scale is given for upper berths, drawing rooms and compartments, from which the following are selected as examples. The regular drawing room contains a double section, and a single section, or a single berth, with toilet. A compartment contains two double berths:

Lower Berth.	Upper Berth.	Drawing Room.	Compartment.
$ 1.50	$ 1.25	$ 6.00	$ 5.00
2.00	1.60	7.00	6.00
3.00	2.40	11.00	8.50
4.00	3.20	14.00	11.50
5.00	4.00	18.00	14.00
6.00	4.80	21.00	17.00
7.00	5.60	25.00	25.00
8.00	6.40	28.00	22.50
9.00	7.20	32.00	25.50
10.00	8.00	35.00	28.00
11.00	8.80	39.00	31.00
12.00	9.60	42.00	34.00
13.00	10 40	46.00	36.50
14.00	11.20	49.00	39.50
15.00	12.00	53.00	42.00
16.00	12.80	56.00	45.00
17.00	13.60	60.00	48.00
18.00	14 40	63.00	50.50

For parlor car seats the rates are, east of Calgary, Macleod and Edmonton, ½c. a mile, and west of those points ⅔c. a mile, adding sufficient when necessary to make the fare end in 0 or 5. The minimum charge for seats is 25c. For drawing room the charge is six times the seat fare, not exceeding the charge for drawing room in night service between the same points.

In tourist sleeping cars the berth charge is 50% of standard berth fare, adding sufficient, when necessary, to make tourist berth fare end in 0 or 5. The minimum charge for lower or upper berth is $1.

The Canadian Northern and Grand Trunk Pacific Rys. filed similar tariffs for points east of Macleod, Calgary and Edmonton, their lines not being in operation further west for sleeping or parlor car traffic. The Pullman Co. did not file a tariff, but tariffs were filed by the lines over which Pullman cars operate in Canada, the Grand Trunk, Michigan Central, New York Central lines and other roads.

The new tariffs were approved by the Board of Railway Commissioners in Montreal Jan. 24. Chairman Mabee said they were the first effort to put sleeping and parlor car rates on a scientific basis, that they would do away with the complaints in regard to the charges for lower and upper berths being the same, and that they would make a general reduction in rates, although in some cases there might be increases. The railway companies justified the higher rates west of Macleod, Calgary and Edmonton by the extra cost of hauling cars through the mountains. Chairman Mabee said the Commission hesitated in approving the higher western rates, but did so, as the companies wanted to put the new tariffs in force on Feb. 15, it being understood that the question might be reopened, when the general question of lower railway rates in the west came up for consideration.

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C. N. Ry.—G. T. Pacific Ry. Terminal.

The President, Vice President and other officers of the G.T. Pacific Ry. were in Toronto Jan. 4, conferring with Canadian Northern Ry. officers as to terminal facilities. The conference lasted two days, and it is stated that an arrangement is being made for the operation of joint terminals for the lines at various points in the west along the same lines as that under which the G.T. Pacific Ry. is to use the terminal station now nearly completed at Winnipeg. It is said that all the joint terminal facilities will be operated by a joint board representing both lines. Referring to the conference on his return to Winnipeg Jan. 11, E. J. Chamberlin, Vice President and General Manager G.T.P.R., said the matter would be handled by a terminal board at Winnipeg, Regina and Edmonton. This statement was confirmed as to Winnipeg and Edmonton by M. H. McLeod, General Manager C.N.R., Jan. 14.

◆

St. Leonards—Van Buren Bridge.—The commissioners having charge of the building of a bridge across the St. John river to connect St. Leonards, N. B., and Van Buren, Me., have been considering the offer of certain residents of the latter place to provide sufficient funds to strengthen the bridge so as to carry railway traffic. The Attorney-General for Maine has expressed an opinion that the State voted a subsidy for the building of a highway bridge, and that the funds cannot be used for anything else.

The Winnipeg Bridge and Construction Co., Ltd., has been incorporated under the Manitoba Companies Act, with a capital of $60,000 and office at Winnipeg, to carry on a general contracting business, including works connected with railways, tramways, telegraph and telephone lines, bridges, wharves, docks, piers, etc., and in connection therewith to own and operate steam and other vessels, and to carry on a general transportation business. The incorporators are John, James and F. Frankman, Minneapolis, Minn.; J. LaCour and K. Scheel, Winnipeg.

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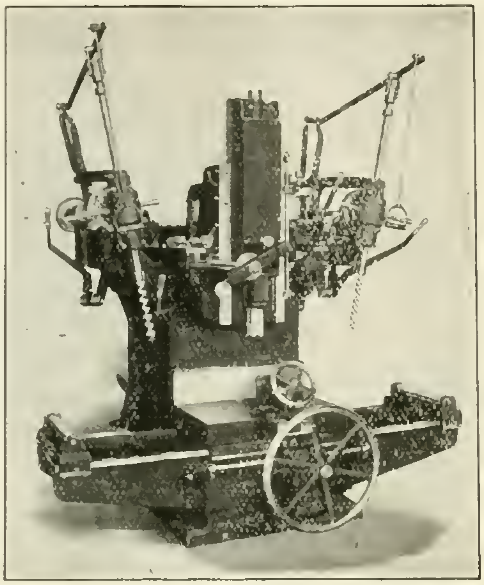

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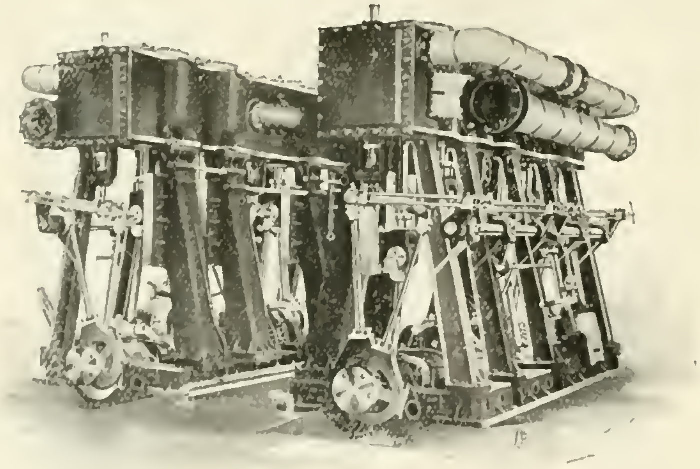

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Blomidon to Canning Wharf.—A survey has been made for a spur from the Dominion Government wharf at Canning, N.S., on the Dominion Atlantic Ry. Cornwallis branch, to Blomidon.

St. John Improvements.—A question has been raised in connection with the deed of transfer to the C.P.R. of certain shore rights at Carleton, St. John, N.B. The company does not agree to a clause providing that the land is to be used for railway purposes only.

New Brunswick Southern Ry.—This railway was merged in the Atlantic Division, C.P.R.. Jan. 15, and is being operated as part of District 1. The Board of Railway Commissioners has authorized the building of a spur across Prince William St., Nepean tp.

St. Maurice Valley Ry.—Commencing Jan. 15, the St. Maurice Valley Ry., from Three Rivers to Shawinigan Falls, Que., has been operated as part of District 3 Eastern Division C.P.R.

During 1910 the C.P.R. built an extension from Shawinigan Falls to Grand Mere, 5.2 miles.

Orford Mountain Ry.—An extension of this railway from Mansonville, Que., to the International boundary, between Quebec and Vermont, 3.6 miles, was completed during 1910.

Montreal.—In connection with the application of the city to the Quebec Legislature for an amendment of its charter, etc., notice is given by E. Belanger that he will apply for the insertion of a clause protecting certain rights in the case of the works authorized by the contracts between the city and the C.P.R., June 30, 1905, and Jan. 7, 1910.

Mile End Station.—The new station at Mile End, Montreal, was expected to be ready for occupation Jan. 20. The building is of brick on concrete foundations, and is similar in design and layout to that recently completed at North Parkdale, Toronto.

St. Lawrence Boulevard.—The subway under the C.P.R. at the head of the St. Lawrence Boulevard, Montreal, is reported to be practically completed. The subway is about 900 ft. long and 60 ft. wide. At the lowest point it is 15 ft. below the street level. The roadway provides space for a double track electric railway, two roadways for general traffic, and two sidewalks. The steel superstructure carries four tracks.

Place Viger Improvements. — The Board of Railway Commissioners has authorized the building of a temporary bridge to carry Notre Dame St., Montreal, over the tracks leading to Place Viger terminals, pending the erection of a permanent bridge.

Georgian Bay and Seaboard Ry.—The line under construction from Coldwater Jct. eastward to the Toronto-Montreal line at Bethany Siding, will be 75.88 miles long. The line from Victoria Harbor, on Georgian Bay, to Coldwater Jct., on the Toronto-Sudbury line, is completed, and is being used for traffic. During 1910 the company laid 1.46 miles of terminal tracks at Victoria Harbor. The Board of Railway Commissioners has approved the proposed change in location of the line in Orillia, of revision in grade from mileage 65.63 to 69 in Ops and Fenelon tps., revision in location from mileage 69 to 70.5, and location from mileage 70.5 to 72.88 in Lindsay, Ont.

The total length of the line from Coldwater Jct. to Bethany Siding is 80 miles, and the contract of the Toronto Construction Co., which company was building the section out of Coldwater easterly, is reported to have been extended to cover the whole line. G. S. Deeks, representing the company, stated Jan. 4, that 17 miles of grading had been completed, and the whole line was expected to be ready by Dec. 31.

The revised location of the line from mileage 44.22 southeasterly to mileage 47.42 in Victoria county, has been approved by the Board of Railway Commissioners.

Lambton-Islington Second Track, etc.—The Board of Railway Commissioners has authorized the use for traffic purposes of the second track from Lambton to the east end of the bridge over Mimico River, mileage 6.6 to 8.6. The abutments have been built for a bridge across this river, and the second track has been laid west to the junction with the Mimico spur line, 2.64 miles, built during 1910, and for some distance beyond, altogether 3.2 miles from Lambstate that in connection with the plans ton. It is understood that the second track will be laid as far as Cooksville, mileage 14.4, during the year.

Toronto to Windsor.—Press reports state that in connection with the plans for the improvement of C.P.R. connections in and around Toronto, it is proposed to build a new line, either in whole or in part, from Cooksville to London, to avoid the gradients and curvature on the existing line. Whether there is anything in the report or not, a survey party has been at work, starting from near the crossing of Dundas St., east of Cooksville station, and proceeding westerly since Jan. 2. During the last four years several survey parties have been at work for the C.P.R. in that section.

South Ontario Pacific Ry.—The House of Commons Railway Committee approved the application for an extension of time for the building of a line from Guelph Jct. to Hamilton, Ont., about 16 miles. An effort was made to obtain a promise from the company's representative that the line would be built at once.

Guelph Station, etc.—The Board of Railway Commissioners has authorized a change in the location of the line crossing Eramosa road, Norwich St., and City lane, and approving the location of the proposed station at Guelph, Ont.

Spur Line at Guelph.—The Board of Railway Commissioners has extended to Sept. 30 the time within which the spur line to the Provincial Reformatory at Guelph, Ont., may be built.

Stratford, Ont., Entrance.—The railway committee of the Stratford city council had under consideration the question of the entrance of a C.P.R. line into the city, Jan. 17, in order that it may be in a position to meet the company's engineers, who are expected shortly.

Tillsonburg, Lake Erie and Pacific Ry.—St. Marys and Western Ontario Ry.—The Board of Railway Commissioners has authorized the opening for traffic of that portion of the Ingersoll branch from Ingersoll Jct., mileage 0 to 4.8. This piece of line was built during 1910, and the official report gives the location and mileage as Code Jct. to Ingersoll, 4.68 miles. Ingersoll was the terminal of the old T., L.E. and P. Ry., and Code Jct. is the point where the St. Marys and Western Ontario Ry. joins the C.P.R. main line. By the building of this line a direct connection is given between Port Burwell and St. Marys, instead of the previous connection via Woodstock.

Nipigon to Savanne, Ont.—Press reports state that there is under consideration a plan for building a cut off starting from Nipigon and joining the main line again near Savanne, Ont., which will effect a saving of nearly 50 miles. The building of this cutoff would do away with the necessity of through traffic, being carried via Fort William during the winter. F. R. Reed, of the C.P.R. engineering staff, Winnipeg, is reported to be in charge of a party locating a route. Since the foregoing was put in type we have been officially advised that the reports quoted are unfounded.

Port Arthur, Ont.—Following the removal of the street railway tracks from John St. to Bay St., by the Commission, the C.P.R. will lay an extensive system of side tracks for the new warehouse district on John St.

Western Lines, Improvements and Extensions.—The work to be done on the Western lines during the current season includes not only very extensive betterments of existing lines, enlargement of yards and facilities, but the laying of about 100 miles of second track, and the construction of about 400 miles of new lines.

The line between Port Arthur and Fort William, Ont., about four miles, will have a second track, and the poling yard at Fort William, which was laid out about seven or eight years ago, is to be rearranged as a gravity yard, with a view of taking advantage of the gradient in the movement of cars.

Owing to the large increase in the size and power of locomotives and their consequent greater hauling capacity, the present passing tracks are being found to be too short. In order to accommodate these longer trains additions to passing tracks aggregating 40 miles will be built during the year. The general improvement of the lines will be continued, and during the year 150 miles of the Manitoba and North Western Ry. will be relaid with the standard 85 lb. steel; the yards at Regina, Moose Jaw and Medicine Hat will be enlarged, and new steel bridges will be built across the South Saskatchewan River at Medicine Hat, across the Bow River at the first crossing east from Calgary, twin bridges will be built at the second and third crossings west of Calgary, and across the Elbow River at Calgary. The superstructures of the present structures will be utilized elsewhere.

The second track work which has been completed from Winnipeg to Portage la Prairie, will be completed to Brandon this year, some 80% of the grading having already been done. From Moose Jaw, a second track is to be built easterly to Pasqua, seven miles, and westerly to Caron, about 16 miles. Two rock crushing plants will be built on the Pacific Division to supply rock ballast for the lines there.

The new lines which will be built during the year are as follows:—The completion of the branch from Estevan, Sask., northwesterly to a junction with the line westerly from Weyburn, at Forward, Sask., 35 miles.

The extension of the line from Weyburn from its present terminal for 20 miles westerly.

From Moose Jaw southwesterly for 35 miles towards a junction with the line from Weyburn westerly.

From Swift Current southeasterly for 45 miles towards a junction with the last mentioned line.

From Swift Current northwesterly for 35 miles.

From the present terminus of the branch northwesterly from Moose Jaw for 35 miles, with a view of meeting an extension of 60 miles, which is to be built easterly from Castor, the present terminus of the Calgary and Edmonton Ry. Lacombe branch.

From Wilkie, on the Pheasant Hills branch, a line is to be built for about 32 miles northwesterly into the Cut Knife district, and southerly a branch is to be built to Tramping Lake, and down each side of the lake, a distance of 25 miles.

The Carmangay branch is to be completed to Okotoks, 26.5 miles.

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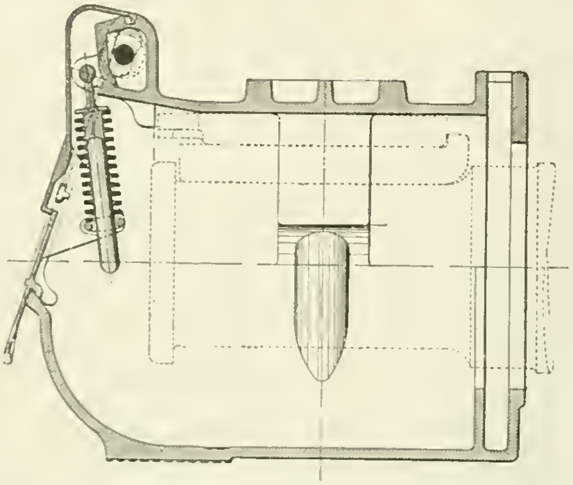

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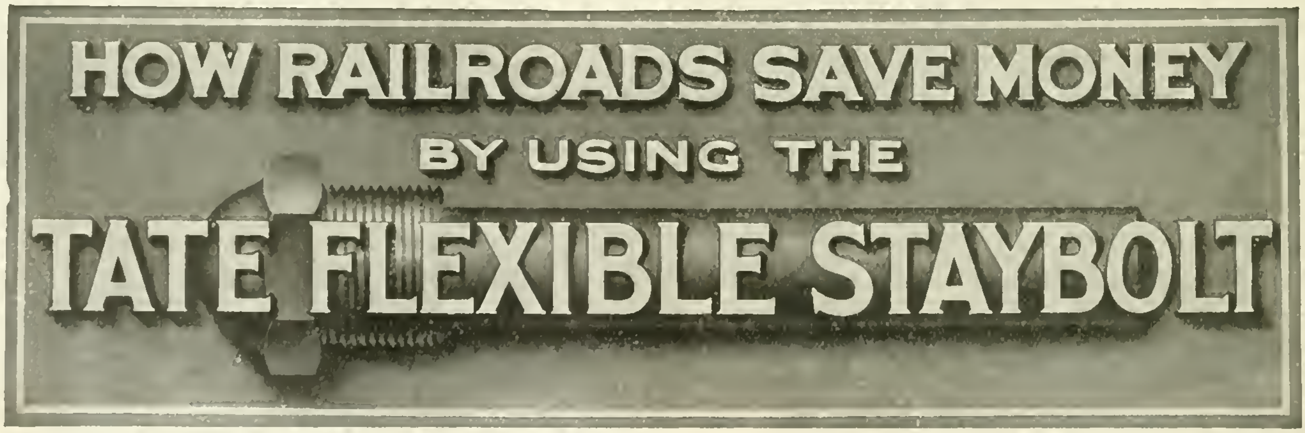

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An additional 40 miles will be built on the Kootenay Central Ry.

The year's construction also includes an addition to the Royal Alexandra Hotel at Winnipeg, but we are advised that it has not been decided whether this will be done by the addition of two or three stories or by a new wing.

Teulon Extension.—Track was laid during 1910 on the extension of this branch, from Komarno to Arborg, Man., 25.6 miles.

Winnipeg-Brandon Second Track.—A second track has been laid from Rugley Jct., at Winnipeg, to Portage la Prairie, Man., 53.6 miles, and grading has been completed for a second track from Portage la Prairie to Brandon, Man., 77.5 miles. Track will be laid on this mileage during the present year.

Tilston, Westerly.—The company has under construction a line from Tilston, Man., the present terminus of the Broomhill branch, for 3.21 miles to the Manitoba boundary, and for a further 22.5 miles in Saskatchewan.

Forward Branch.—This branch line starts at Weyburn, Sask., and had its terminus in Forward, 26 miles. During 1910 track was laid on a further 26 miles, passing through Amulet, mileage 44, and having its present terminus at Ogema, mileage 52. It is understood that the intention is to carry this line to Lethbridge, Alta.

Estevan Northwesterly.—A line is under construction from Estevan, Sask., northwesterly 20 miles. This will affect a junction with the line being built westerly from Weyburn in the direction of Lethbridge, Alta.

Tantallon, Northwest.—The Dominion Parliament is being asked to authorize the building of a line from near Tantallon, on the Pheasant Hills Branch, to Craven, on the branch line northerly from Regina, Sask., 145 miles. This will run midway between the main line and the Pheasant Hills branch.

Regina, Bulyea, Colonsay, Sask.—A branch is under construction from Regina to Craven, where it divides, one line effecting a junction with the Pheasant Hills branch at Bulyea, mileage 194, and the other effecting a junction with the Pheasant Hills branch at Colonsay, mileage 293. Track was laid during 1910 as follows: Regina northerly, 20.6 miles; Bulyea, south, 12.4 miles; Colonsay, south, 50 miles, and grading was reported to have been completed on the following additional distances: Bulyea, southerly, 6.9 miles; Colonsay, southerly, 58 miles.

Outlook, Castor, Macklin.—The Outlook branch starts from Moose Jaw, Sask., and runs northwesterly for 119 miles to Outlook, whence it is under construction to a junction with the Calgary and Edmonton Ry. Lacombe branch, now terminating at Castor, Alta., and with the extension of the old Manitoba and North Western Ry., which connects with the Calgary and Edmonton Ry. branch from Wetaskiwin, at Macklin, mileage 492. Track has been laid from Macklin, southeasterly for 148.6 miles. At Outlook a viaduct is being built across the Saskatchewan River valley, over which connection will be made between the two sections of the line. It has not yet been determined when the section from near Eagle Lake to Castor, Alta., will be proceeded with.

The Langdon Branch starts from Calgary Jct., and was extended from Inverlake to Acme, Alta., 34.1 miles, during 1910, and it is intended to extend it to a junction with the Calgary and Edmonton Ry., south of Red Deer. A branch running easterly from Irricana is under construction for a further 36.9 miles.

Carmangay to Aldersyde.—The Carmangay branch, at present extending from Kipp to Carmangay, Alta., 28 miles, is being extended to Aldersyde, 56 miles.

West Canadian Collieries.—The Board of Railway Commissioners has authorized the C.P.R. to build three spurs for the W.C.C. at Bellevue, Alta.

Kootenay Central Ry.—A duplicate of the lease of the K.C. Ry., now under construction, to the C.P.R., has been deposited with the Secretary of State at Ottawa. The line is projected from Wardner, on the Crow's Nest Pass Branch, to Golden, on the transcontinental line, and the section under construction is from Wardner to Fort Steele, 24.9 miles.

Hotel at Balfour, B.C.—A contract is reported let to C. W. Sharpe, Winnipeg, for the erection of a hotel at Balfour, near Nelson, B.C. The building will be of three stories, on a concrete and stone foundation, with a frontage of 205 ft., and a depth of 105 ft. It is expected to be completed this year.

Westminster Jct., B.C.—We have been advised that while the executive officers have given some consideration to the provision of additional yard accommodation at the Pacific coast, it has not bought 1,800 acres of land at Westminster Jct. for this purpose, as recently reported. It is too early to state just what will be done in providing the increased accommodation necessary.

Port Moody Spur Line.—During 1910 the company completed the building of a 3.5 mile spur line at Port Moody, B.C.

Esquimalt and Nanaimo Ry.—The total length of the extension of this line from Wellington to Alberni, B.C., is 57.8 miles. The first section, from Wellington to Cameron Lake, 30 miles, has recently been opened for traffic. The remaining distance, from Cameron Lake to Alberni, is under construction, and is expected to be opened for traffic during the year. On the old portion from Victoria to Nanaimo, a branch of 3.3 miles, to the Wellington Camp, was built. An extension to the water front at Nanaimo is under consideration. Surveys for this work have been made by H. J. Cambie, Vancouver.

Work on the clearing of the branch line to Cowichan Lake is reported to be under way, the contractors, Moore and Pethick, having completed the clearing of five miles of the right of way.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—During the year 1910, 240.33 miles of new track were laid on five different lines, as follows: from Lawlor to Plummer, Minn., 168 miles; cutoffs Wisconsin, Spencer, Minneapolis, 62 miles; from Ironhub to Deerwood, 4.61 miles; from Cuyuna to Crosby, 3.92 miles; from Crosby to Ironton, 1.80 miles.

Press reports state that surveys have been made for an extension from Frederick, Wisc., to Duluth, Minn., about 60 miles, and that the company is planning extensive additions to its yard accommodation at Superior, Wisc., for handling ore from the Cuyuna range. (Jan., pg. 33.)

Railway Companies and Commutation Tickets.—A bill has been read a first time in the House of Commons, on motion of A. C. Macdonell, M.P., having for its object the amendment of the Railway Act, with reference to the issue by railway companies of commutation or suburban mileage tickets. The object is to put the issue of these tickets under the same supervision as other tickets with regard to the obligation not to discriminate against persons or localities.

A bill respecting the load line on ships, in the same terms as the Plimsoll Act, was introduced into the House of Commons, Jan. 20.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers to distinctly understand that we are not paid for the publication of any of this matter and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Robt. W. Hunt and Co., Montreal, have issued a booklet on the proper use of concrete and reinforced concrete.

S. S. Underwood, for many years chief draughtsman G.T.R. Car Department, Montreal, has been appointed Sales Manager for Taylor and Arnold, Ltd., Montreal.

The Baldwin Locomotive Works, Philadelphia, Pa., has issued a calendar for 1911 illustrating various types of locomotives for passenger and freight service.

The Baldwin Locomotive Works, Philadelphia, Pa., has issued record 68, dealing with Mallet articulated locomotives and giving data and illustrations of 13 of them built at the works.

The Halifax city council has granted the Nova Scotia Car Works, successors to the Silliker Car Co., a loan of $125,000 at 4%; a 5,000,000 gall. water supply for 20 years and exemption from taxation for the same period.

The Consolidated Car Heating Co. has issued catalogue 10, describing and illustrating its buzzer system designed for signalling conductors and motormen on trolley cars. It operates directly from the trolley voltage and does away with all dry batteries.

The Goldschmidt Thermit Co. is applying to the Dominion Parliament to authorize the Commisioner of Patents to receive payments of the further partial fees for the second and third terms of six years each, and to extend patent 86085, for a process of joining metal pieces, for such further terms.

Williams and Wilson, Ltd., has been incorporated under the Dominion Companies Act, with a capital of $250,000 and office at Montreal, to take over the business at present carried on by Williams and Wilson there, and to carry on the general business of manufacturing, importing and dealing in machinery and supplies. The incorporators are A. R. Williams, Toronto; F. C. and W. A. Wilson, M. B. Bronstetter, E. Kingsland, Montreal.

The Dearborn Drug & Chemical Works which has distributed its feed water Treatment and lubricants through an agency in the Phillippines for the past two years, have decided to open their own branch office and warehouse in Manilla, and has placed F. O. Smolt in charge, under the supervision of E. C. Brown, Manager of company's foreign department. Mr. Brown has spent most of the past two years in Japan, China and the Philippines, investigating steam plant and railway conditions and has made selling connections at Tokyo, Tientsin, Hongkong, and Shanghai.

According to the Insurance Age, the work of railway trainmen in the U.S. is not the most dangerous occupation. It seems that the highest percentage of fatality is found among the fishermen of Gloucester, Mass., where it is nearly 12% of the total number employed. For the decade ending in 1907, the mortality percentage among railway men was about 8%. The number of deaths due to accidents of occupation among all wage earners annually in the U.S. is between 30,000 and 35,000; the non-fatal accidents exceed 2,000,000.

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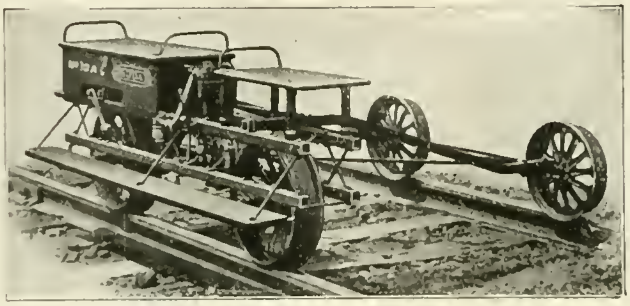

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Canadian Northern Ry. Construction, Etc

Canadian Northern Quebec Ry.—The Board of Railway Commissioners has ordered the company to provide a platform and shelter for freight and passenger traffic at Pointe Aux Trembles, Que.; to fence its property and tracks at Hochelaga terminals, and instal various protective devices along its line in Montreal. The company's application to build an elevated line to connect its tracks with the lines of the Montreal Harbor Commission has been referred to the Board of Railway Commissioners.

James Bay and Eastern Ry.—The Board of Railway Commissioners has approved the revised location from station 405-48 to 536-44, mileage 7.46 to 9.93, from Roberval, Que.; and authorized the crossing and diversion of the public road at stations 726-50 and 605-63 on the Indian Reserve, Lake St. John county.

Canadian Northern Ontario Ry.—The Board of Railway Commissioners has authorized the building of the line from near Hawkesbury, towards Montreal, between lots 78 and 80, St. Eustache parish, station 1848-80; and the building of a bridge over Riviere des Milles Isles, between Two Mountains and Laval counties, mileage 37.9 from Hawkesbury.

Track has been laid altogether upon 71.7 miles of the Toronto-Ottawa line as follows: mileage 0 to 44.6, 44.6 miles; mileage 69.4 to 71.7, 2.3 miles; and mileage 71.8 to 96.6, 24.8 miles.

The Board of Railway Commissioners has authorized the building of the line across Hurdman's Road, Nepean tp., subject to certain conditions. The route plans for the section of the Toronto-Ottawa line between Deseronto and Portland, came up for consideration before the Minister of Railways, Jan. 10, when representatives from Newboro, Westport and other points attended and pressed their views as to the location. The Minister promised to give consideration to what had been said before approving the plans. The Board of Railway Commissioners has authorized a junction with the G.T.R. Harwood branch in Cobourg; and the building of a branch line in Trenton to connect with the Central Ontario Ry., and certain transfer tracks also in Trenton; to carry the line across Foster Ave., Belleville; to use five piers for the bridge across the Moira River at Belleville; and has approved the location of the line between Sydenham and Harrowsmith, mileage 159.70 to 162.27.

The Minister of Railways, Jan. 12, decided to refer to the Board of Railway Commissioners the application for approval of the location of the Toronto end of the line, from Macpherson Ave., to Rosedale Heights. Speaking in reference to this and other railway matters, Sir Donald D. Mann, Vice President C.N.R., said Jan. 12: "The C.P.R. is already handling business out of North Toronto, and before very long we will also be operating trains through there. Now, suppose the C.P.R. built a big passenger station there, and did not want the Canadian Northern, or any other company in the same terminal, and suppose we built a station, as we probably will do in the course of a few years, and in return for an arrangement in the present Union Station we allowed the G.T.R. to use the C.N.R. terminal in North Toronto, it could be done. The C.N.O. line to Ottawa, now under construction, of course, will be connected up with North Toronto, but just where has not been decided as yet, but north of East Toronto, the line passes within half a mile of the G.T.R. main line between Toronto and Montreal. All that would be necessary, you see, would be to construct a line across that half mile or so, and G.T.R. trains could swing to the north there and so continue on over the C.N.O. lines into North Toronto. But remember, I do not propose to utterly abandon the Union Station. It should also be kept in operation. Just how I would not say at present, but it seems to me that in the summer it would be the proper station from which all passenger business connecting with the steamboats should be handled. If all the roads concerned agree on that point I do not see what would be placed in the way by any other interest. It may be, however, that they could not do that, for I am not sure on that point. But, under the scheme I have suggested here as one way of handling the problem, the bulk of the through trains, at least, would be sent across the north end of the city."

The contract for the bridge on the Toronto-Trenton section at Trenton, has been let to S. Henderson, and work was started on the substructure Jan. 1. There will be two abutments and nine piers in from 12 to 19 ft. of water. Five cofferdams have been put in place, and 4ft. of concrete work done in each. It is expected to have the substructure completed in March.

A Hamilton press report states that another plan for the entrance of the company's lines into Hamilton is under consideration. This involves a line at the back of Dundurn Park, with a viaduct across the city to James and Strachan sts, where a station would be built.

The branch line from Udney, on the Toronto-Sudbury line to Atherly Jct., Ont., has been extended from mileage 5.71 to Atherly Jct., 1.69 miles, during 1910.

Irondale, Bancroft and Ottawa Ry.—During 1910, an extension of three miles was built to connect the old terminus at Mud Creek, Ont., with the Central Ontario Ry., to enable the two lines to be worked under the same management. The point of junction with the C.N.O Ry. is at York River.

Central Ontario Ry.—Track has been laid on the extension to Whitney, from station 1355 to 1620, five miles, and the remaining 12 miles is under construction. The work is being done by the company.

Canadian Northern Ry.—Application was made recently to the Minister of Railways for approval of the route map for the projected line from Nipigon to Port Arthur. In 1908, a route map showing an entrance into Port Arthur was approved, but the present map shows a new location in that city along the waterfront. The city authorities object to this route on account of the shipbuilding and other industries along the water front. The route map was approved, subject to certain questions reserved for the decison of the Railway Commissioners.

Application is being made to the Board of Railway Commissioners for authority to build a spur line from Rue de Meuron, westerly to Tache Ave., St. Boniface.

During 1910, in addition to completing a cut-off, of 9.75 miles, near Kakabeka, Ont., the company laid 521.96 miles of new line, on 10 branch lines. The Oak Point branch line was completed for a further distance of 96.84 miles to Gypsumville, Man., the Greenway branch was carried 12.90 miles west of Adelpha, Man.; the Hallboro branch was completed to Beulah, 6.15 miles; on the Rossburn branch, 16.46 miles of track were laid west of Stornaway, Sask.; on the Maryfield branch, 88.81 miles of track were laid westerly from Lampman, Sask.; on the Goose Lake branch, 49.90 miles were laid westerly from Kindersley, Sask.; track was laid from Prince Albert to Shellbrook, Sask., 16.13 miles; on the Jack Fish Lake branch, track was laid from 22.9 between North Battleford to Meots, Sask.; between Shellbrook and Big River, Sask., on the Crooked Lake branch, 56.95 miles; and on the Vegreville-Calgary line, from Ryley to Red Deer River, Alta., 155.23 miles. These lines represent 115.89 miles of additional branch lines in Manitoba, 250.84 miles in Saskathcewan, and 155.84 miles in Alberta.

Plans for the extension of the line into the Brazeau River coal fields, from Stettler, on the Vegreville-Calgary line, westerly, have been approved by the Alberta Government. The question of the building of this branch line came before the Dominion authorities, and the plans were not approved, but the company subsequently obtained an act for the construction of the line from the Alberta Legislature.

Canadian Northern Pacific Ry.—The first section of this line to be put under construction was one of 57 miles, from New Westminster Bridge to Popkum, B.C., the contract having been given to the Northern Construction Co., Vancouver. This contract was extended to cover an additional 20 miles from Popkum to Hope. The rest of the line from Hope to Yellow Head Pass, 425 miles, is under survey, the whole work being in charge of T. H. White, Chief Engineer. The grading is expected to be completed to Popkum by July 1, and that it will be so far ahead by March 1, that track laying will be started. The clearing of the 1,000 acre tract at Port Mann, is reported to be about one-fifth completed. The contractors for this work are Moore and Pethick.

In a recent interview, Sir Donald Mann said the company was preparing to make an early start on the numerous tunnels to be driven along the banks of the Fraser River between Yale and Kamloops. These will run from 700 to 2,700 ft. in length, aggregating 2.25 miles. It is expected that work will be prosecuted from both ends of each tunnel, and that the gangs will work in three shifts, so that the driving may be continuous.

Vancouver Island.—A contract for the building of the first section of the projected C.N.R. lines on Vancouver Island has been let to Grant, Smith & Co. The contract calls for the clearing, grubbing, fencing, grading, bridging, trestle work and masonry work from mileage 4.7 westerly from Victoria to mileage 25. The plans filed with the B.C. Government show that location surveys have been completed to Cooper Cove on Sooke Inlet, 25 miles from Victoria. The gradient is kept below 1.5%, and the curvature is not excessive. There are no exceptional engineering difficulties on the section, but there is a good deal of heavy rockwork for about 12 miles about mileage 17. A preliminary location survey has been made to mileage 90, from Victoria, at the west end of Cowichan Lake. (Jan., pg. 13.)

The Duluth, Winnipeg and Pacific Ry.'s extension, southerly through Minnesota to Duluth, is well under way. The work of putting up the steel bridges is going on, and it is expected to have the line completed this year. During 1910, there were laid about 25 miles of track on the extension out of Virginia Lake towards Duluth.

Minnesota and North Wisconsin Ry., Etc.—Press reports recently credited C.N.R. interests with having acquired a line running from International Falls. to Little Fork River, Minn., and the M. and N. W. Ry. running from Scanlan to Norwanna, on the first mentioned line, but we are officially advised that there is no truth whatever in the report.

◆

J. Vanderburg, who died at St. Catharines, Ont., Jan. 6, aged 71, was the first Superintendent of the old Niagara Central Rd.

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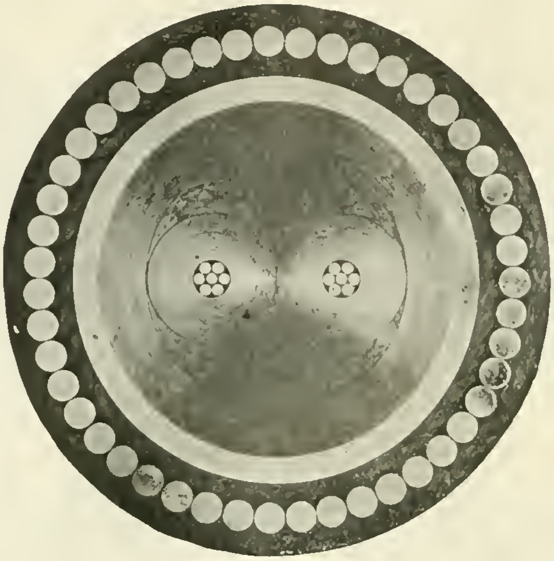

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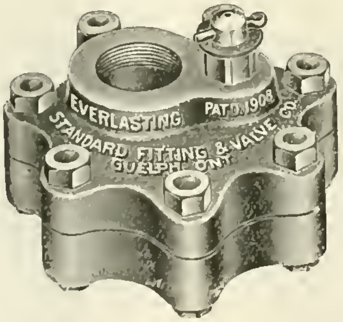

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Railway Finance, Meetings, Etc.

Alberta Ry. and Irrigation Co.—Approximate net profits from all sources, exclusive of land sales, for Nov. 1910, $40,194, against $52,211 for Nov. 1909. Cumulative net profits for five months ended Nov. 30, 1910, $148,687. Railway traffic receipts for Dec. 1910, $26,577, against $28,432 for Dec. 1909. Cumulative traffic receipts for six months ended Dec. 31, 1910, $186,164.

Algoma Central and Hudson Bay Ry.—There is being offered on the Paris, France, market, $3,000,000 new first mortgage 5% bonds of this company at 463.50 francs per 515 franc bond

Canadian Pacific Ry.—At the recent meeting of the Board, in Montreal, it was decided that in view of the position of the land account, and of the other extraneous assets of the company, the distribution from these sources, commencing with the payment of the next quarterly dividend, will be at the rate of 3% per annum, instead of 1%, as heretofore.

Canada Southern Ry.—The city of St. Thomas, Ont., is applying to the Legislature for authority to enter into agreements, from time to time, with the Canada Southern Ry. Co. and the Michigan Central Rd. Co., for the payment of a certain annual sum in commutation of its taxes on right of way, yards, lands, buildings and structures lying north of Wellington St.

Cumberland Ry. and Coal Co.—A meeting of shareholders will be held in Montreal Feb. 15, to authorize the directors to issue bonds for $3,000,000, secured by a trust mortgage on all the assets, present and future. The shareholders will also elect directors, pass bylaws, and transact such other business as may be done at a special general meeting.

Dominion Atlantic Ry.—Gross earnings for Nov., 1910, $99,000, against $112,021 for Nov., 1909; aggregate gross earnings for five months ended Nov. 30, 1910, $687,806, against $723,844 for same period 1909.

London and Port Stanley Ry.—The receipts for the first nine months of 1910 were $13,800.52, made up as follows: rental, $7,500; interest as rental, $1,947.45; percentage of earnings, $4,353.07. The disbursements were $333.96, against which was set $125 received for sale of an old shed at Port Stanley, leaving net disbursements of $208.96. This makes the net receipts $13,591 56. There was $2,500 due as rental, which, together with the percentage of earnings, will bring the total income for the year to $18,000, the same as in 1909. The report was adopted, and the board will in the ordinary course turn over the cash to the London city treasurer.

Maritime Coal, Ry. and Power Co.—At the last meeting of directors it was stated that the railway as well as the electric part of the company's undertakings showed greatly increased earnings.

New Brunswick Southern Ry.—A duplicate of the lease of the line to the C.P.R. dated Oct. 6, 1910, has been deposited with the Secretary of State at Ottawa.

Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.—The order for the service of writ and statement in the action of Russell against Greenshields to recover $1,250,000 damages, has been set aside. The action has to do with some dealings with the Q., L.L. and S. Rd. and S. Co.'s land grant, in which the plaintiff and defendant were interested, and Russell alleges that Greenshields received a secret profit out of the settlement, which Russell says in his statement "was based on a breach of his duty by the defendant as such partner" in assenting to the arrangement.

Quebec and Lake St. John Ry.—Traffic receipts for Dec., 1910, $48,525.52, against $42,578.67 for Dec., 1909. Aggregate receipts for twelve months ended Dec. 31, 1910, $608,979.88, against $593,562.78 for same period 1909. The mileage operated during both years was 285, the earnings per mile being $2,145.12 in 1910, and $2,089.21 in 1909.

Quebec Central Ry.—Press reports recently stated that the New York, New Haven and Hartford Rd. were negotiating for a controlling interest in the Q.C.R. In connection with this report J. H. Walsh, General Manager, stated in an interview that the British shareholders were well satisfied with the prospects of the company, and would not dispose of their interests.

Quebec Central Ry.—Gross earnings for Nov., 1910, $84,197.44; expenses, $59,557; net earnings, $24,640.44, against $84,875.51 gross earnings; $59,838.06 expenses; $25,037.45 net earnings for Nov., 1909. Aggregate gross earnings for five months ended Nov. 30, 1910, $545,881.49; expenses, $352,052.69; net earnings, $193,828.80, against $498,036.93 aggregate gross earnings; $325,508.78 expenses; $172,528.15 net earnings for same period 1909.

Quebec Southern Ry.—F. D. White, Rutland, Vt., and the estate of the late H. A. Hodge, Greenwich, Conn., have entered suit in the Connecticut courts to recover $2,500,000 damages against R. Sutro, W. Seward Webb and others who were associated with them in a transaction involving the purchase of the Q.S R. White and Hodge were interested prior to the Sutro-Webb interests acquiring the line, and it is alleged that the failure of the company to meet its obligations in Mar., 1904, was the result "of the acts of the defendants and others who conspired with them." and that the subsequent sale under an order of the Exchequer Court, caused the plaintiffs damage to the amount claimed.

Red Mountain Ry.—The discharge of a mortgage given by the company July 1, 1896, to the Manhattan Trust Co., to secure an issue of debenture stocks, has been deposited in the office of the Secretary of State at Ottawa.

St. Maurice Valley Ry.—A duplicate of the lease of the line to the C.P.R., dated Oct. 6, 1910, has been filed with the Secretary of State, Ottawa.

Temiscouata Ry.—Profit for Oct., 1910, $4,897, against $4,835 for Oct., 1909; cumulative profit for ten months ended Oct. 31, 1910, $39,668, against $44,934 for same period 1909.

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Regulations re Passenger Car Lighting.

The Board of Railway Commissioners passed the following order, 12542, Dec. 9:—

1. The gas generally known as Blaugas may be used for the purpose of lighting railway passenger cars, upon and subject to the terms and conditions following, namely: The gas to be used in tanks below cars similar to those now in use for storage of Pintsch gas and Commercial acetylene gas; the tanks to be tested and tight at 300 lbs. pressure to the square inch, and stand such tests without distortion. Provided that in the case of railway companies having in use at the date of the issue of this order tanks tested to a pressure not exceeding 294 lbs. to the square inch, it shall be sufficient that the said tanks be tested and tight at 290 lbs. pressure to the square inch and stand such test without distortion. The maximum working pressure to be 150 lbs. to the square inch. Every gas tank attached to a railway car to have six three-eighths holes drilled in it, to be countersunk seven-eighths inch in diameter and one-eighth inch deep, in which brass disc shall be tinned and soldered; the disc to stand a pressure of 200 lbs. to the square inch and tanks to be placed on the cars with disc side up. Holes to be located as described in sketch attached.

That in addition to the foregoing, every gas tank attached to a railway car must be equipped with an extra heavy stud valve, securely fastened to every such tank.

That the equipment necessary for the installation of the said system be provided with: a pressure gauge with a dial reading either from 1 lb. to 300 lbs., or reading by atmosphere from zero to 15 atmospheres, to show the exact pressure of gas carried. A recharging valve attached to the charging station hose. A regulating valve, to reduce the pressure of gas contained in the tank before it enters the main line piping or the lamps on the car.

That all piping between the regulating valves and stud-valves be of extra heavy, seamless steel or iron tubing; and that all elbows or tees be of extra heavy material, provided that heavy flange brass fittings may be used in lieu of such equipment.

That the high-pressure piping and fittings be carefully threaded before being screwed together; the pipe thread to be carefully tinned after being screwed up, and the piping to be sweated to the fittings.

That standard tubing be used to connect the low-pressure side of the regulating valve with the lamps of the cars, and that a main-line cock, to turn on and off the gas, be placed on the inside of each car, in a convenient and conspicuous location.

That, in order to locate leakages, soap suds be used, and that lighted matches or torches be not used for this purpose.

That printed regulations defining and explaining the use of the system, be posted inside of each car, in close proximity to the main-line cock; and that a tank stud-valve key, a main-line cock key, and such other keys as may be necessary for the use and operation of this equipment, be supplied to and always carried by, every conductor and brakeman while on duty in charge of any train or cars provided with this equipment, and that the regulations required by this section be posted up, state that such keys are in the possession of the conductor and each brakeman on the said trains or cars. That every car lighted by this system be placed under the charge of a competent and reliable employe of the railway company using such system—every such employe to be specially instructed in regard to the proper working and operating of the said system.

◆

Taxation of Railways.—For the year ended June 30. 1910, Canadian railways paid $1,792,648.83 in taxes, an increase of $211,312.24 over the previous year. Of this, 121,933.17 represented outside operations. The amounts collected in the different provinces were:—Ontario, $747,004.78; Quebec, $337,490.05; British Columbia, $220,687.32; Saskatchewan, $161,575.45: Manitoba, $92,476.48; Alberta, $87.423.93; Nova Scotia, $16,762.66; Yukon, $5,896.64; New Brunswick, $1,298.35: Prince Edward Island, $100.

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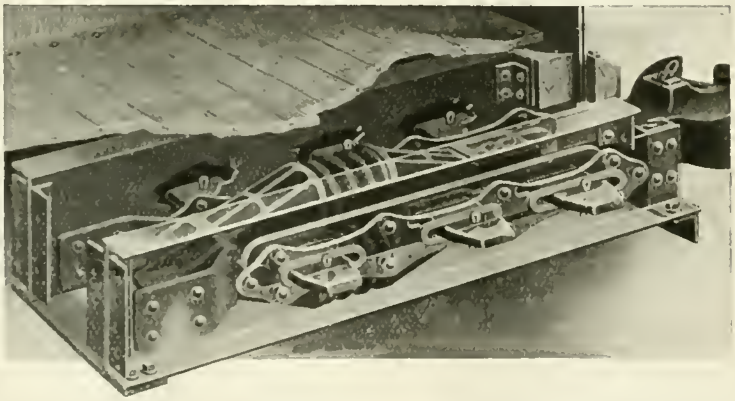

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TORONTO, CANADA, FEBRUARY, 1911.

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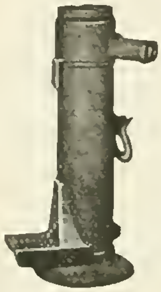

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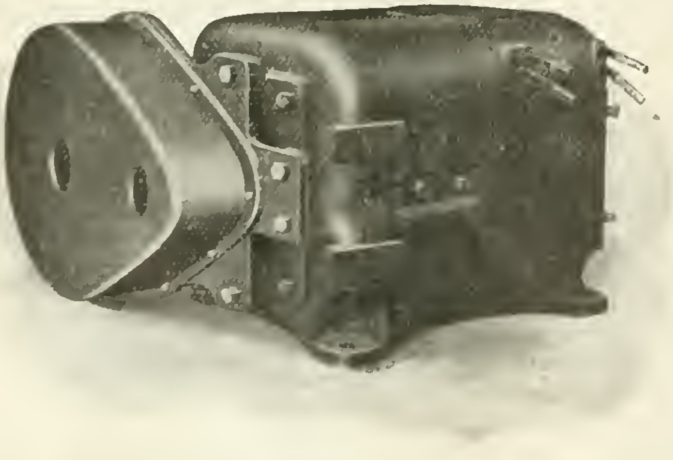

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Railway Commissioners' Traffic Orders.

Summaries of other traffic orders are given on another page under "Orders by Railway Commissioners":—

Rates on Sugar Beets.

12435. Oct. 14.—Re Michigan Sugar Co. of Croswell, Mich., under secs. 315, 317 and other provisions of the Railway Act, for an order directing the Chatham, Wallaceburg & Lake Erie Ry. to adopt a tariff that will provide for the carriage of sugar beets over its line at a rate that is not excessive, and that does not discriminate against the applicant in favor of any other person or company: It is ordered that the application be dismissed. And it is further ordered that any joint tariff to cover this traffic to be moved during 1911 from points on the C.W. & L.E.R. to Croswell, higher than the joint tariff at present in force, shall be filed and published, so as to be effective not later than May 1, 1911.

Rates on White Pass and Yukon Routes

12512. Dec. 15.—Re complaint of J. H. Conrad, alleging excessive freight rates charged by White Pass & Yukon Route on ores from Caribou to Skagway, and on mining machinery and camp supplies from Skagway to Caribou: It appearing that the White Pass & Yukon Route and the British Yukon Ry. have refused to permit applicant to load ore, as has been hitherto permitted, and upon counsel for applicant undertaking to forthwith make an application for the construction of an industrial siding at or near the point in question, it is ordered that the W.P. & Y. Route and the B.Y.R., their officers and agents, do permit the applicant, his servants and agents, to load ore for shipment upon the line of the said railway companies at or near the point at which the applicants, his servants and agents, had been permitted by the railway companies in the past to load the said ore, upon the lines of the said railway companies at or near Caribou Crossing, until the application for the said industrial siding is disposed of or the same is constructed. 2. That the said railway companies, their officers or agents, shall be liable to forfeit and pay a penalty of one hundred dollars ($100.00) per day for each and every day that the applicant, his servants or agents, are not permitted to load ore at the point in question where the like privilege has been granted to the said applicant, his servants or agents, in the past.

Rates from the East to Saskatchewan.

12520. Dec. 10.—Re application of city of Regina, Sask., under sec. 314 and 339 of the Railway Act, for order directing reduction in rates on classes 1 to 10 on goods shipped from Eastern Canada to Regina. Upon hearing the application at Regina and Winnipeg on Nov. 8 and 15, 1909, in the presence of counsel for the applicant, the Canadian Pacific, Canadian Northern, and Grand Trunk Pacific Railway Companies, the Moose Jaw and Winnipeg Boards of Trade being represented, and upon the report of the Chief Traffic Officer of the Board, it is ordered that the C.P.R. and C.N.R. publish and file new freight tariffs, to take effect not later than April 1, 1911, removing the discrimination at present existing in the tariffs to points in Manitoba, Saskatchewan and Alberta, from Fort William, Port Arthur and points east thereof, in favor of Winnipeg and other points in Manitoba, and against points west thereof, by reducing the rates from Fort William, Port Arthur and points east thereof, to Regina and Moose Jaw and other points west of the said favored points.

In the case of the Edmonton Board of Trade vs. the Canadian Pacific and Canadian Northern Railways, the Chief Commissioner gave the following decision under date of Dec. 21, 1910:—"This case is governed by the order made in the Regina Board of Trade case. That order required the companies to remove existing discrimination by reducing rates from Fort William and Port Arthur to Regina and other points west of the favored points. The latter were the points that enjoyed rates upon the Winnipeg basis. To comply with that order rates to Edmonton must be reduced as asked in this complaint. This follows without the necessity of issuing a formal order, unless requested by applicants."

Grain Rates from Buchanan, Sask.

12653. Dec. 28, 1910.—Re order 12413, May 12, 1910, made upon the application of G. Taylor, of Winnipeg, and declaring that under the Canadian Northern Ry.'s tariff applying to a shipment of grain by complainant from Buchanan, Sask., to Headingly, Man., the rate properly chargeable was 17c. per 100 lbs. Upon the report of the Board's Chief Traffic Officer that his recommendation that complainant was entitled to a refund of 1c. per 100 lbs. on the said shipment was based on a new tariff issued by the C.N.R. subsequent to the shipment, and that the rate charged was in accordance with the tariff in effect at the time of shipment. It is ordered that order 12413, May 12, 1910, be rescinded.

Rate on Brick, Laprairie to Mile End.

12655. Sept. 20. 1910.—Re application of W. S. Tilston, Manager Montreal Board of Trade Transportation Bureau, on behalf of the Laprairie Brick Co., Ltd., for an order prescribing a joint through rate of 3c. per 100 lbs. on brick from Laprairie to Mile End, Que. Upon hearing the application in the presence of counsel for the C.P.R. and G.T.R., it is declared that the application falls within the terms fo the general interswitching order 4988, July 8, 1908.

Rates on Finnan Haddies.

12674. Dec. 20, 1910.—Re application of Maritime Fish Corporation of Digby, N.S., complaining of increased rates charged by Dominion Atlantic Ry. on shipments of finnan haddies between Digby, N.S., and St. John, N.B. It is ordered that in the present Canadian Classification no. 15, finnan haddies are included in the description "Salted, dried or smoked fish," which, when shipped in bundles or boxes, is rated 3rd class in less than carloads, and 5th class in carloads, and that any rates charged for the carriage of finnan haddies, in bundles or boxes, higher than 3rd class in less than carloads, and 5th class in carloads, as shown in the tariffs published and filed, are unlawful.

White Pass and Yukon Ry. Rates.

12783. Jan. 18.—Re order 7246, June 16, 1909, made upon application of Board of Trade of Dawson, Yukon, directing the British Yukon Ry., the British Columbia Yukon Ry. Co., the Pacific and Arctic Ry. and Navigation Co., and the White Pass and Yukon Ry. to file with the Board (1) tariffs of the companies tolls covering all through traffic received at Skagway and destined to White Horse, or to any intermediate point or points between the International boundary line between Alaska and British Columbia, upon the line of railway, and White Horse; (2) covering all through traffic received at any point or points upon the railway line between White Horse and the said International boundary, and destined to Skagway. And re the tariffs filed in pursuance thereof:

It is ordered that the Joint Freight Tariff C.R.C. 9, giving the rates charged by the respondent companies on the various descriptions of freight traffic specified therein between Skagway, Alaska and White Horse, Yukon, and intermediate stations in B.C. and Yukon Territory, be disallowed. That the one-way passenger fares published in the respondent companies Joint Passenger Tariff C.R.C. 3, to apply between Skagway, Alaska, and stations in B.C. and Yukon Territory to and including White Horse, be disallowed; and the respondent companies be directed to substitute therefor joint tariffs of freight and passenger tolls based on a reduction of at least one-third in each case from the freight and passenger tolls shown in the tariffs, which are hereby disallowed, the substituted tariffs to become effective not later than April 1, 1911, the reduced freight and passenger tolls to be the maxima to be charged by the respondent companies between Skagway and the said stations. And it is also ordered that freight and passenger tolls (if any) now existing, lower than the tolls hereby ordered, shall not be increased by reason of this order.

Nova Scotia Steel and Coal Co., Ltd.

Following is a return of the company's output for 1910 and 1909, the figures showing a considerable increase in the past year:

	1910.	1909.
Iron ore mined	537,000	460,387
Coal mined	845,000	813,453
Limestone and dolemite...	75,000	74,407
Coke made	90,000	87,816
Pig iron made	66,000	57,676
Steel ingots cast	75,000	64,210
Steel billets cogged	59,000	52,931
Bars and plate rolled ...	49,000	45,090
Axles forged	38,000	27,703
Shipments finished steel and forgings	60,200	58,515
Average number employes.	5,276	4,450
Steamers employed	18 to 20	15 to 20
Tons freighted	1,000,000	925,000

◆

Loading on Industrial Sidings.—In reference to the joint circular issued by railways in the Maritime Provinces, Quebec and Ontario, on Oct. 15, 1910, stating that on and after Jan. 1, 1911, the practice of loading less than carload freight on industrial sidings would be discontinued, another circular has been issued stating that in view of the number of requests which have been received from shippers and others, to postpone the effective date of this regulation, and in order that all concerned may complete arrangements for compliance therewith, the effective date thereof is postponed until July 1.

The Engineers Club of Montreal has decided to enlarge its club house on Beaver Hall Square, at a cost of $92,500, the increase of the membership to 425 having rendered the present premises too small. The plans, which have been accepted, provide for an almost complete remodelling of the present buildings, the construction of a new dining room and billiard room, new card rooms, additional bed rooms, and a ladies dining room and reception room, a library and reading room. When completed it will be one of the finest club buildings in Canada. Nearly $20,000 is also to be expended for new furniture, fittings, etc.

The Shepard Morse Lumber Co., Ottawa, has received one four wheel locomotive from the Montreal Locomotive Works.

The Canadian Quarries and Construction Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $2,000,000, and office at Ottawa, to carry on a general construction and quarrying business, and in connection therewith to build, own and operate wharves, docks, canals, tramways, sidings, steam and other vessels, and other transportation facilities. The incorporators are J. Black, R. T. Mullin, Montreal; S. Bilsky, G. C. Hurdman and J. O. Carss, Ottawa.

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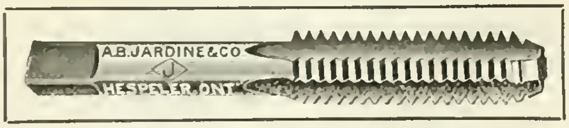

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TRANSPORTATION APPOINTMENTS.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canadian Northern Ry.—G. H. Shaw, heretofore Traffic Manager, Winnipeg, has been appointed General Traffic Manager, with jurisdiction also over the allied lines: Canadian Northern Ontario Ry., Canadian Northern Quebec Ry., Quebec and Lake St. John Ry., Inverness and Richmond Ry., Halifax and South Western Ry., Duluth, Rainy Lake and Winnipeg Ry., and the Canadian Northern Steamships, Ltd. Office, Toronto.

G. D. Lindsay has been appointed Travelling Freight Agent, Toronto, vice C. H. Green, transferred to Hamilton, Ont., as advised in our last issue.

J. H. McKinnon, heretofore Travelling Passenger Agent, Toronto, has been appointed Commercial Agent, vice W. E. Dunn, resigned. Office, St. Paul, Minn.

W. A. Kirkpatrick, heretofore in the General Superintendent's office, Winnipeg, in charge of matters concerning transportation, has been appointed Operating Inspector, reporting to the General Superintendent, Winnipeg.

D. Robinson has been appointed Sleeping and Dining Car Agent, vice J. S. McKay, resigned. Office, Prince Albert. Sask.

E. P. Davis, K.C., heretofore Counsel for C.P.R. at Vancouver, has been appointed Counsel and Solicitor C.N.R. for the B.C. mainland. Office, Vancouver.

Canadian Pacific Ry.—A. E. Griggs has been appointed Bridge and Building Master District 1, Atlantic Division, vice C. L. Clarke, superannuated. Office, Fredericton Jct., N.B.

The New Brunswick Southern Ry., having been taken over by the C.P.R., it will be operated as the Shore Line subdivision of District I, Atlantic Division. W. B. Brown, Chief Dispatcher and Trainmaster District 1, has supervision of same, with office at St. John, N.B.

N. E. Lister, heretofore Roadmaster N.B.S. Ry., has been appointed Assistand Roadmaster District 1, C.P.R., acting under J. A. Miller, Roadmaster at McAdam Jct.

J. N. Currie, heretofore Bridge and Building Master N.B.S. Ry., has been appointed Assistant Bridge and Building Master, acting under A. E. Griggs, Bridge and Building Master, Fredericton Jct., N.B.

A. W. Horsey, heretofore District Master Mechanic, Districts 2 and 4 Eastern Division, Smiths Falls, Ont., has been appointed District Master Mechanic District 1, vice D. L. Jones, transferred to the Atlantic Division. Headquarters, Farnham, Que.

On Jan. 1 a circular, signed by Sir Thos. G. Shaughnessy, was issued, appointing J. E. Schwitzer, theretofore Assistant Chief Engineer Western Lines, Winnipeg, to be Chief Engineer of the company, with office at Montreal. Mr. Schwitzer left Winnipeg Jan. 8 to assume the duties of his new position, but was taken ill whilst en route, and died of pneumonia, at Montreal, Jan. 23. The appointment of a successor is not likely to receive consideration for some time to come.

J. W. Leonard, heretofore General Manager Eastern Lines, in charge of maintenance and operation, has been appointed Assistant to the Vice President. Office, Montreal. Mr. Leonard will, it is said, principally attend to matters arising between the company and its maintenance and operating employes on its eastern lines, especially as regards wages and other terms of employment.

F. P. Gutelius, heretofore General Superintendent Lake Superior Division, North Bay, Ont., has been appointed General Superintendent Eastern Division, vice C. Murphy, appointed General Superintendent of Transportation. Office, Montreal.

F. W. Ellingwood is reported to have been appointed superintendent in charge of construction of the Windsor St. station, and also the Place Viger terminal, Montreal.

T. Collins, Assistant Superintendent District 2, Eastern Division, is reported to have been appointed also Assistant Superintendent District 4, Eastern Division, vice R. W. McCormick, transferred to Farnham, Que. Office, Smiths Falls, Ont.

J. M. Burke, heretofore District Master Mechanic District 1, Atlantic Division, Brownville Jct., Me., has been appointed District Master Mechanic Districts 2 and 4, Eastern Division, vice A. W. Horsey, transferred. Headquarters, Smiths Falls, Ont.

J. G. Taylor, heretofore Superintendent District 1, Alberta Division, Medicine Hat, has been appointed General Superintendent Lake Superior Division, vice F. P. Gutelius, transferred to Montreal. Office, North Bay, Ont.

A. R. Holland, conductor, has been appointed acting Trainmaster at District 1, Manitoba Division, during the absence of H. J. Coffin, acting as Relieving Superintendent District 2, Saskatchewan Division, at Saskatoon, Sask. Office, Kenora, Ont.

When the appointment of J. E. Schwitzer, as Chief Engineer, was made on Jan. 1, it was also announced that he would be succeeded as Assistant Chief Engineer Western Lines, by J. G. Sullivan, theretofore Assistant Chief Engineer Eastern Lines. Consequent on Mr. Schwitzer's fatal illness, Mr. Sullivan did not leave for Winnipeg, as intended, but we were advised Jan. 27 that he would go there early in February.

A. Doull has been appointed Roadmaster Ignace subdivision District 1, Manitoba Division, vice J. Esselmont, transferred to the Pacific Division. Office Kenora, Ont.

In announcing the appointment of T. Fawcett, as General Fuel Agent Western Lines, Winnipeg, in our last issue, we gave his previous position as Trainmaster at Calgary, Alta. This should have read, Paymaster.

R. Lockhart has been appointed Assistant Superintendent Sleeping, Dining and Parlor Cars and News Service, Manitoba Division, vice S. A. Simpson, promoted. Office, Winnipeg.

H. E. Haanel has been appointed Trainmaster District 3, Manitoba Division, vice P. F. Weisbrod, transferred. Office, Brandon, Man.

H. J. Coffin, Trainmaster District 1, Manitoba Division at Kenora, Ont., has been appointed acting Superintendent District 2, Saskatchewan Division, during the absence of E. L. Chudleigh, Superintendent, on leave. Office Saskatoon, Sask.

S. A. Simpson, heretofore Assistant Superintendent Sleeping, Dining and Parlor Cars and News Service, Manitoba Division, Winnipeg, has been appointed Superintendent same service, Saskatchewan Division, vice R. H. Pierce. Office, Moose Jaw, Sask.

W. G. McPherson, has been appointed Night Locomotive Foreman at Moose Jaw, Sask., vice H. Bealle, who has been given a position as hostler there.

J. McQuarrie, heretofore shop foreman, Medicine Hat, Alta., has been appointed Locomotive Foreman, Sutherland Sask., vice M. W. Boucher, transferred to Hardisty, Sask.

A. S. Dawson has been appointed Chief Engineer in charge of surveys, designs and construction of the irrigation project and establishment of all standards for renewals and betterments distributing system Office, Calgary, in maintenance of completed canals and Alta.

A. J. Macdonnell has been appointed Assistant Superintendent Sleeping, Dining and Parlor Cars and News Service, Alberta Division. Office, Calgary, Alta.

H. McDonald, heretofore fitter in Lethbridge shops, Alta., has been appointed shop foreman there, vice M. A. Cardell, transferred.

M. A. Cardell, heretofore shop foreman at Lethbridge, Alta., has been appointed shop foreman at Medicine Hat, Alta., vice J. McQuarrie, appointed Locomotive Foreman at Sutherland, Sask.

M. W. Boucher, heretofore Locomotive Foreman, Sutherland, Sask., has been appointed Locomotive Foreman, Hardisty, Alta., vice W. G. McPherson, assigned to other duties.

J. Daem has been appointed Assistant Roadmaster, Rogers Pass, B.C. This is a new position. He will particularly attend to the snow service at Rogers Pass and vicinity reporting to Roadmaster Nicholls at Revelstoke.

M. K. McQuarrie has been appointed Resident Engineer District 1, British Columbia Division, vice J. P. Forde, resigned. Office, Revelstoke.

P. F. Weisbrod heretofore Trainmaster District 3, Manitoba Division, Brandon, has been appointed Trainmaster, District 3 Alberta Division, vice J. A. Kennedy, assigned to other duties. Office, Cranbrook, B.C.

J. Esselmont, heretofore Roadmaster Ignace subdivision, District 1, Manitoba Division, Kenora, Ont., has been appointed Roadmaster Cascade subdivision, Pacific Division, vice H. Vollans, assigned to other duties. Office, Vancouver, B.C.

C. L. Williams has been appointed General Agent, Passenger Department, Pittsburgh, Pa.

T. G. Orr, Travelling Passenger Agent, Pittsburgh, Pa., has resigned.

The company has opened its own office in Paris, France, at 1 Rue Scribe, in charge of Augustus Catoni, as agent, who will report to the General Freight Agent and the General Passenger Agent, London, Eng., with regard to freight and passenger matters respectively.

Grand Trunk Pacific Ry.—H. H. Hansard has been appointed Assistant Solicitor. Office, Winnipeg.

R. J. Foreman, heretofore chief clerk Freight Department, Winnipeg, has been appointed Assistant General Freight Agent. Office, Winnipeg.

Jas. Gorman, heretofore Inspector of Dining and Sleeping Car Service, Winnipeg, has been appointed Superintendent of Dining and Sleeping Cars, reporting to the General Passenger Agent. Office, Winnipeg.

Grand Trunk Ry.—H. M. Gain has been appointed Passenger Trainmaster, Eastern Division, to supervise the movement of passenger trains. He will report to, and receive his instructions from, the Superintendent. No change will be made in the present practice of making reports to Assistant Superintendents and Trainmasters. Office, Montreal.

S. L. Trusler, heretofore Assistant Trainmaster at Hamilton, Ont., has been appointed Passenger Trainmaster Middle Division, to supervise the movement of passenger trains. Office, Toronto.

W. J. Little, heretofore conductor, has been appointed Passenger Trainmaster Northern Division, to supervise the movement of passenger trains. Office, Allandale, Ont.

H. W. Matthews, has been appointed Passenger Trainmaster, Western Division, to supervise the movement of passenger trains. Office, Detroit, Mich.

Intercolonial Ry.—W. E. Barnes, heretofore Roundhouse and Locomotive Inspector, Moncton, N.B., has been appointed acting Master Mechanic, Eastern Division, vice J. Stewart, assigned to other duties. Office, Moncton, N.B.

The Price, Quality and the Service

of meals on an

INTERCOLONIAL RAILWAY

DINING CAR

are frequently commented upon
AND ALWAYS FAVOURABLY

Through dining cars between Montreal and Halifax and on the Sydney run between Halifax and Antigonish

Table d' Hote

Breakfast, 75 cents
Luncheon, 75 cents
Dinner, $1.00

A HISTORY OF THE PAY-AS-YOU-ENTER CAR

AND ITS LESSON

The following cities are using Pay-As-You-Enter Cars: Chicago City Railway, 839 cars; Chicago Railways, 1,328; Public Service Corporation of New Jersey, 466; New York City Railway, 555; Third Avenue Railroad, New York, 550; International Railway, Buffalo, 200; Buffalo & Lake Erie Traction Co., 10; Washington Ry. & Elec. Co., Washington, D.C., 100; Capital Traction Co., Washington, D.C., 51; Municipal Traction Co., Cleveland, Ohio, 180; United Rys. Co. of St. Louis, Missouri, 310; Portland Ry., Lt. & Pwr. Co., Portland, Ore., 25; Columbus Ry. & Lt. Co., Columbus, Ohio, 10; Wichita R.R. & Lt. Co., Wichita, Kan., 14; Jacksonville Elec. Co., Jacksonville, Fla., 5; Dallas Elec. Co., Dallas, Texas, 20; Houston Elec. Co., Houston, Tex., 41; Northern Texas Trac. Co., Ft. Worth, Texas, 25; Ithaca Street Ry., Ithaca, N.Y., 2; Peoria Street Ry., Peoria, Ill., 13; Urbana & Champaign Ry., Champaign, Ill., 3; Mutual Lt. & Water Co., Brunswick, Ga., 4; Rochester Ry. Co. Rochester, N.Y., 25; Ft. Dodge, Des Moines & So. R.R. Co., 2; Muskogee Elec. Trac., Muskogee, Okla., 6; Union Traction Co., Dubuque, Ia., 4; Topeka Ry. Co., Topeka, Kas., 12; United Rys. & Elec. Co., Baltimore, Md., 32; Detroit United Ry., Detroit, Mich., 225; Cincinnati Traction Co., Ohio, 50; Montreal Street Railway, 400; British Columbia Elec. Ry., 30; Calgary Street Railway, 18; Metropolitan Street Ry., Kansas City, Mo., 50; Edmonton Radial Ry., 4; San Antonio Traction Co., San Antonio, Tex., 6; Rockford & Int. Ry., Rockford, Ill.; Cairo Street Ry. & Lt. System, 6; Des Moines City Railway, Iowa, 12; Macon Ry. & Lt. Co., Macon, Ga.; Virginia Ry. & Power Co.; Columbia Elec. St. Ry. & Lt. & Power Co., Columbia, S.C.; Aurora, Elgin & Chicago Ry., Chicago, Ill.; Wichita Falls Traction Co., Wichita Falls, Tex.; Ottawa Electric Ry. Co., Ottawa; Bloomington & Normal Ry. & Lt. Co., Bloomington, Ill.; Corsicana Transit Co., Corsicana, Tex.; Compania Electrica y de Ferrocarriles, Mexico; The Milwaukee Elec. Ry. & Lt. Co., Milwaukee, Wis.; Springfield Street Ry. Co., Springfield, Mass.; Lynchburg Traction Co., Lynchburg, Va.; Chicago & Southern Traction Co., Chicago, Ill.; Calumet & South Chicago Ry. Co., Chicago, Ill.

THE LESSON

taught by this widespread use of Pay-As-You-Enter Cars is obvious. Increased Revenue, Accident Elimination and Schedule Improvement have been demonstrated in every case. Isn't all this sufficient to show that it always pays to operate the Pay-As-You-Enter Car? Why not remodel some of your present cars?

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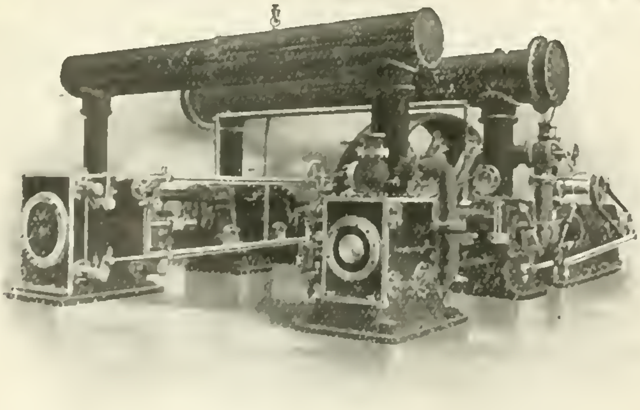

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Cross Compound Corliss Steam and Two Stage Air Cylinders

The Class "RR 3" is one of the Rand new types and embodies every new and up-to-date improvement.

Some of its notably good features are the enclosed dust-proof frames, flood lubrication, improved steam and air cylinders and massive construction throughout.

Canadian RAND Co., Limited

COMMERCIAL UNION BUILDING, MONTREAL, QUE.

Offices at: TORONTO COBALT WINNIPEG ROSSLAND VANCOUVER HALIFAX

Michigan Central Rd.—The following organization of the Freight Traffic Department became effective Jan. 1:—J. Webster and W. A. Terry, Assistant Freight Traffic Managers, Chicago, Ill.; W. C. Rowley, General Freight Agent, G. M. Weaver, Assistant General Freight Agent; C. C. Griggs, Chief of Tariff Bureau; W. S. Crowl, Industrial Agent, Detroit Mich.; H. Bromley, General Coal and Ore Agent, Cleveland, Ohio, H. M. Griggs, Assistant General Coal and Ore Agent, Chicago, Ill., W. C. Lewis, Division Freight Agent, Chicago, Ill., to Niles, Mich., and Joliet Division, Chicago Ill.; J. H. Brown, Division Freight Agent, Leslie to Bay City, Mich., Mackinaw Division and branches, and Midland Division, Bay City, Mich.; G. C. Ransom, Division Freight Agent, stations east of Detroit and St. Clair Rivers, and St. Clair to Lenox, Mich., inclusive, Buffalo, N.Y.; E. A. Treadway, Division Freight Agent, South Bend, Ind., to St. Joseph, Mich., Kalamazoo to South Haven, Mich., Allegan to Yorkville, Mich., Jackson to Grand Rapids, Mich., and Jackson to Rives Jct., Mich., Grand Rapids, Mich.

L. W. Landman, heretofore General Passenger Agent Lake Erie and Western Rd., Indianapolis, Ind., has been appointed General Passenger Agent M.C.R. vice O. W. Ruggles, assigned to other duties on account of ill health. Office, La Salle St. Station, Chicago, Ill.

New Brunswick Southern Ry.—See Canadian Pacific Ry.

New York Central Lines.—E. F. Major has been appointed City Ticket Agent, Montreal, vice A. F. Gogo, transferred.

Pere Marquette Rd.—W. K. Tasker, Superintendent of Telegraphs, is reported to have been appointed Superintendent Canadian Division, vice J. S. Pyeatt, transferred to the Grand Rapids Division, Mich. Office, Detroit, Mich.

R. S. Black, heretofore chief dispatcher, Detroit, Mich., is reported to have been appointed Trainmaster Canadian Division, vice J. R. Gilhula, resigned. Office, St. Thomas, Ont.

Reid Newfoundland Co.—A. Spence, heretofore Chief Dispatcher, has been appointed Travelling Auditor. Headquarters St. John's, Nfld.

G. Cobb has been appointed Chief Dispatcher, vice A. Spence, promoted. Office, St. John's, Nfld.

Rutland Rd.—A. F. Gogo, heretofore city ticket agent New York Central Lines, Montreal, has been appointed Travelling Passenger Agent, R. Rd., vice J. M. Ferris, resigned. Headquarters, 220 St. James St., Montreal.

Temiscouata Ry.—J. H. Walsh, heretofore Vice President Temiscouata Ry., and General Manager Quebec Central Ry., has been elected President Temiscouata Ry., vice F. Grundy, deceased. The position of Vice President has been left vacant.

Temiskaming and Northern Ontario Ry.—T. Ross, heretofore acting Master Mechanic, has been appointed Master Mechanic. Office, North Bay, Ont.

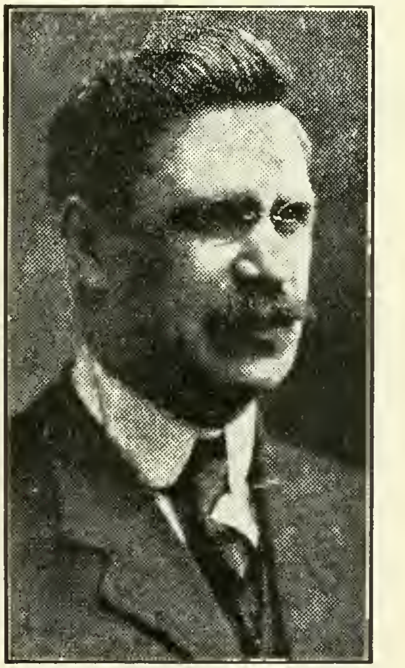
Wabash Rd.—Jno. Maloney, heretofore station passenger agent, has been appointed General Agent Passenger Department, Buffalo, N. Y., vice G. D. Maxfield, promoted.

G. D. Maxfield, heretofore General Agent Passenger Department, Buffalo, N.Y., has been appointed District Passenger Agent, Indianapolis, Ind., vice R. G. Thompson, promoted.

The Montreal St. Ry. has asked the city council to appoint special constables to see that the city bylaws respecting slow moving traffic are enforced. The company complains that on account of slow moving traffic keeping to the tracks, considerable delay is occasioned in the operation of cars, with consequent annoyance to passengers.

Death of J. E. Schwitzer.

Inexpressibly sad was the death of J. E. Schwitzer, B.A.Sc., M. Can. Soc. C.E., in Montreal, Jan. 23, of pneumonia. On Jan. 1 Sir Thomas Shaughnessy issued a circular announcing his promotion from Assistant Chief Engineer of Western Lines to the Chief Engineership of the whole system, with office at Montreal. Mr. Schwitzer left Winnipeg Jan. 8 for Montreal, with Vice President Whyte, who went for his annual appropriation conference with the President, the estimates for which had been prepared by Mr. Schwitzer. Very soon after their arrival in Montreal Mr. Schwitzer was taken ill and was taken to the Royal Victoria Hospital Jan. 16. At first it was thought he was suffering from typhoid, but later it was diagnosed as pneumonia. Mrs. Schwitzer was sent for and reached Montreal only a few days before he died.



He was born at Ottawa, Ont., Apr. 19, 1870. During his undergraduate days and at intervals of private practice and general survey and engineering work, he was engaged in the following railway works: 1888, rodman on location of Vaudreuil and Ottawa Ry. and Lake Temiskaming Colonization Ry.; 1889, assistant engineer of construction Lake Temiskaming Colonization Ry.; 1891 to Feb. 1892, assistant Engineer on location and construction Ottawa and Gatineau Ry.; July 1893 to Jan. 1894, assistant engineer in charge of location and construction, Ottawa, Arnprior and Parry Sound Ry.; Feb. 1894 to Dec. 1906, in addition to continuing the same position, he was engineer in charge of Central Counties Ry. from South Indian, for Canada Atlantic Ry., and on surveys Hull Electric Ry.; July 1899 to Nov. 1900, engineer in charge of construction C.P.R. yards at Rat Portage, Ont.; Nov. 1900 to Nov. 1901, assistant engineer in charge of maintenance of Way, C.P.R., Winnipeg; Nov. 1901 to Mar. 1903, Resident Engineer C.P.R., Winnipeg; 1903 to Feb., 1907, Principal Assistant Engineer, C.P.R., Winnipeg; Feb., 1907 to Jan. 1, 1911, Assistant Chief Engineer, Western Lines, C.P.R., Winnipeg. He was entertained to dinner at Winnipeg Jan. 6, by a number of the officials, on his leaving for the east.

Mr. Schwitzer's death has caused the greatest regret, not only in C.P.R. circles, but through the engineering profession generally and especially in the west, where he has been so well known for a number of years. Sir Thomas Shaughnessy said:—"It is impossible to put into words the great loss the company has sustained in the death of Mr. Schwitzer, but it is even harder to speak of the loss to his personal friends, who have watched his progress. Personally and officially I can say that he cannot be replaced."

The funeral took place at Ottawa, Jan. 27, when a special train from Montreal was provided. A number of officials of the system attended, including several from Vancouver, Winnipeg and other western points. At the various C.P.R. offices throughout the Dominion flags were flown at half mast, and the room in which the Canadian Society of Civil Engineers was holding its annual meetings, in Winnipeg, was suitably draped.

Passenger Meetings at Rochester.

For the first time in the history of the Niagara Frontier Summer Rate Committee, the Great Lakes and St. Lawrence River Rate Committee, and the International Water Lines Passenger Association, they held their annual meetings in Rochester, N.Y., in January. Usually the meetings have been held in Buffalo, N.Y., Niagara Falls, Ont., Toronto or Montreal. The rate clerks of all the lines east of a line drawn through Buffalo and Pittsburg convened under the direction of Jas. Morrison, Secretary of the Niagara Frontier Rates Committee, on Jan. 17 and 18, and agreed on rates to all interested points. These rates will be tendered to all lines west of Buffalo, for basing purposes. On the afternoon of Jan. 17 the Great Lakes and St. Lawrence River Rate Committee met and revised the rates in which the water lines and rail lines were jointly concerned.

The International Water Lines Passenger Association, comprising 46 water transportation companies—practically all the representative lines of Canada and the U. S., met Jan. 19. W. M. Lowrie, retiring President, was presented with a gavel, the head of which, bound with a silver band, is a piece of live oak from the Merrimac, which was sunk by the Monitor in Hampton Roads. The handle was made from one of the stanchions of the duplicate of the original of Robert Fulton's Cleremont, which was in collision with the duplicate of Henry Hudson's Half Moon at the Hudson-Fulton Exhibition.

The three associations elected officers as follows:—

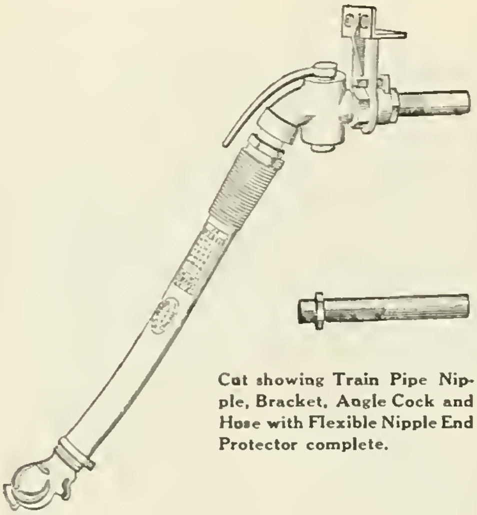
NIAGARA FRONTIER RATE COMMITTEE.—Chairman, D. N. Bell, A.G.P.A., Pennsylvania Rd.; Secretary, J. Morrison, Chief Rate Clerk, C.P.R.

GREAT LAKES AND ST. LAWRENCE RIVER Rate Committee elected the following:—J. de C. Hepburn, Assistant Manager, Ontario & Quebec Navigation Co.; Secretary, J. Morrison, Chief Rate Clerk C.P.R.

INTERNATIONAL WATER LINES PASSENGER Association:—President, T. Henry Traffic Manager Richelieu & Ontario Nav. Co.; Vice President, A. A. Heard, General Passenger Agent Champlain Transportation Co.; Secretary, M. R. Nelson, Northern Steamship Co.; Executive Committee, J. A. Allaire, G.P.A., Hudson Navigation Co.; L. G. Lewis, G.P.A., Detroit & Cleveland Navigation Co.; J. J. Cheeseman, Traffic Manager U.S. & D.T. Co.

The meetings in Jan., 1912, will be held in Detroit, Mich.

The International Ry. of New Brunswick has received one 10 wheeled locomotive from the Montreal Locomotive Works, of which we have already given details.



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THE MONOGRAM BRACKET

will absolutely stop shifting and leaking of air-brake train pipes. All M.C.B. requirements are obtained and maintained.

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PROPRIETORS

ARTHUR M. GRANT,
MANAGER

Steam Railway Track Laid in 1910.

In accordance with our usual practice circulars asking for a return showing all track laid on new lines, or extensions or branches of existing ones during the year ended Dec. 31, 1910, were sent to all Canadian railways, and to U. S. railways having lines in Canada. The returns show that there were laid by 22 railways, 1,869.24 miles of track, against 1,588.47 miles in 1909, and 1,505.95 miles in 1908. The following table gives the details of mileage of track laid on different lines by the various companies. No return has been received from the Halifax and South Western Ry., and while the figure given is estimated, it is practically the actual mileage laid. The mileage laid by the different lines is as follows:—

	Miles.	Miles.
ALGOMA CENTRAL AND HUDSON BAY RY.		
Main line, mileage 69 to 81.6	12.6	
Main line, mileage 170.5 to 151.5	19.0	
Magpie Branch, Michipicoten Division	5.4	
		37.00
ATLANTIC, QUEBEC AND WESTERN RY.		
Grand River to Ainse a Beaufils	14.5	
Near Ainse a Beaufils to Barachoils	8.5	
		23.00
CANADA AND GULF TERMINAL RY.		
St. Flavie to Matane, Que.		36.00
CANADIAN PACIFIC RY.		
Mansonville, Que., to Intefnational boundary	3.60	
Shawinigan Falls, Que., to Grand Mere	5.20	
Islington, Ont., to Mimico	2.64	
Code Jct., Ont., to Ingersoll	4.68	
Victoria Harbor, Ont., terminal tracks	1.46	
Teulon, Man., extension	25.60	
Regina, Sask., northerly	20.60	
Bulyea, Sask., south	12.40	
Forward, Sask., westerly	21.80	
Colonsay, Sask., south	50.00	
Macklin, Sask., aoutheast	86.20	
Langdon, Alta., northerly	34.10	
Irricana, Alta., eaaterly	18.30	
		286.58
CANADIAN NORTHERN ONTARIO RY.		
Toronto-Ottawa Line—		
Mileage 0 to 44.6	44.60	
Mileage 69.4 to 71.7	2.30	
Mileage 71.8 to 96.6	24.80	
		71.70
CANADIAN NORTHERN RY.		
Oakpoint branch, Man.	96.84	
Greenway branch, Man.	12.90	
Hallboro branch, Man.	6.15	
Rossburn branch, Sask.	16.46	
Maryfield branch, Sask.	88.81	
Gooselake branch, Sask.	49.90	
Prince Albert-Battleford line, Sask.	16.13	
Jackfish Lake branch, Sask.	22.59	
Crooked Lake branch, Sask.	56.95	
Vegreville-Calgary branch, Alta.	155.23	
		521.96
CENTRAL ONTARIO RY.		
Station 1355 to 1620		5.00
ESQUIMALT AND NANAIMO RY.		
Parksville to Cameron Lake, B.C.		12.00
ESSEX TERMINAL RY.		
Walkerville to Windsor, Ont.		1.00
GRAND TRUNK PACIFIC RY.		
Mileage 17 to Canora, Sask.)		
Young to mileage 25)	77.00	
Balcarres to mileage 48)		
Camrose to Red Deer River		
Mileage 879 to Prairie Creek, Alta.	158.00	
Prince Rupert to Copper River, B.C.	100.00	
		335.00
HA HA BAY RY.		
Chicoutimi to Bagotsville, Que.	20.00	
Chicoutimi Jct. to Mathias, Que.	5.00	
		25.00
HALIFAX AND SOUTH WESTERN RY.		
Middleton Jct. to Nictaux, N.S.		4.00
INTERNATIONAL RY. OF N.B.		
Mileage 80 to St. Leonards, N.B.		33.50
IRONDALE, BANCROFT AND OTTAWA RY.		
Mud Creek to York River Jct., Ont.		3.00
MANITOULIN AND NORTH SHORE RY.		
Gertrude to Crean Hill, Ont.		10.00
NATIONAL TRANSCONTINENTAL RY.		
Between Moncton, N.B., and N.B. boundary	130.00	
Between Quebec boundary and five miles west of Weymontachene, Que.	135.00	
East and west of Cochrane, Ont., and east of Graham, Ont.	172.00	
		437.00
NORTHERN NEW BRUNSWICK AND SEABOARD RY.		
Nepisquit Jct. to Bathurst Iron Mines		16.90
PACIFIC COAST COAL MINES.		
Fiddicks, B.C., to Coal mines		1.80
PORTLAND CANAL SHORT LINE.		
Stewart to Bear River		4.00
QUEBEC CENTRAL RY.		
St. Justine to St. Sabine, Que.		4.30
TEMISKAMING AND NORTHERN ONTARIO RY.		
Mileage post 60 to 60.5		0.50

Of this mileage 1,651.34 miles were laid in connection with three systems, as follows, the second column showing the mileage laid by the same lines in 1909:—

	1910.	1909.
National Transcontinental Ry.	437.00	312.00
G.T. Pacific Ry.	335.00	309.00
	772.00	621.00
Canadian Northern Ontario Ry.	71.70	90.49
Canadian Northern Quebec Ry.	.....	28.10
Canadian Northern Ry.	521.96	303.05
	593.66	421.64
Canadian Pacific Ry.	286.58	323.84
Total of the three systems	1,651.24	1,376.48

Divided by provinces the track laid during the year compares with that laid in 1909 as follows:—

	1910. Miles.	1909. Miles.
Saskatchewan	518.84	487.80
Alberta	365.63	373.17
Ontario	308.98	288.63
Quebec	232.10	171.24
New Brunswick	180.40	87.00
Manitoba	141.49	136.23
British Columbia	117.80	74.40
Nova Scotia	4.00	.....
	1,869.24	1,588.47

The Canadian Northern Ry. completed a revision of location on the main line near Kakabeka, Ont., the new line having a length of 9.75 miles.

The C.P.R. also laid 3.2 miles of second track between Lambton and Islington, Ont., and 53.6 miles of second track between Rugby Jct., and Portage la Prairie, Man., a total of 56.8 miles. The C.P.R. subsidiary company in the United States, the Minneapolis, St. Paul and Sault Ste. Marie Ry. laid 240.33 miles of new track, as follows: Lawlor to Plummer, Minn., 168.00; Ironhub to Deerwood, Minn., 4.61 miles; Cuyuna to Crosby, Minn., 3.92 miles; Crosby to Ironton, 11.80 miles; cutoffs, Wisconsin-Spencer, Minneapolis, 62.00 miles.

The Diamond Coal and Ry. Co. laid 1.5 miles of switches at the collieries, and connecting with its seven mile line to Kipp, Alta., laid in 1910.

The Sydney and Louisburg Ry. built a mile of new location in place of an existing mile of its main line, which has been abandoned.

The Temiskaming and Northern Ontario Ry. laid five miles of second track between Cobalt and North Cobalt.

◆

Paul J. Myler, Vice President Canadian Westinghouse Co., Hamilton, has been elected President of the Ontario Motor League.

Lt.-Col. H. H. McLean, M.P., Vice President St. John, N.B., Railway, who is to command the Canadian Coronation contingent, is granted the honorary rank of colonel, and transferred to the reserve of officers, his term of command having expired.

The Railway Construction Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $10,000, and office at Montreal, to carry on the business of contractor for the erection, construction, repair, etc., of public works, etc., and to conduct any business germane to the same. The incorporators are G. V. Cousins, O. B. MacCallum, S. T. Mains, P. F. Brown, and W. R. Ford, Montreal.

The North Shore Construction Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $10,000, and office at Montreal, to carry on a general engineering and contracting business, and to build, purchase or otherwise acquire and operate steam and other vessels. The incorporators are C. G. Greenshields, E. R. Parkins, W. Taylor, R. Brodeur and J. M. Montle, Montreal.

The Farewells to Thomas Tait.

Australian papers recently received show that the week preceding the departure of Thomas Tait (he was not then Sir Thomas) from Australia was filled with functions, etc., arranged in his honor, the whole forming a demonstration rarely accorded to any railway official. The Victoria State Government gave a large luncheon for him at the Parliament House, the Premier presiding, and he was entertained at largely attended dinners at the Australian and the Melbourne Clubs. A large gathering of representatives of the manufacturing, shipping, mining, and general commercial interests, headed by the President of the Melbourne Chamber of Commerce, bade him farewell at Mensie's hotel, the principal officers and heads of departments of the State railway service presented him with an address and an album containing their portraits, and representatives of all branches of the service gave him an oil portrait of himself, which he handed over to the Victorian Railway Institute, and with a rose bowl for Mrs. Tait. On the last days he attended at his office over 600 of the staff awaited his arrival in the corridor of the general offices and cheered him. Mr., Mrs. and Miss Tait sailed from Melbourne Nov. 30, on the s.s. Otranto for India, en route to Canada. They were seen off by a large number of officials, business men and personal friends, their cabins being banked up with flowers.

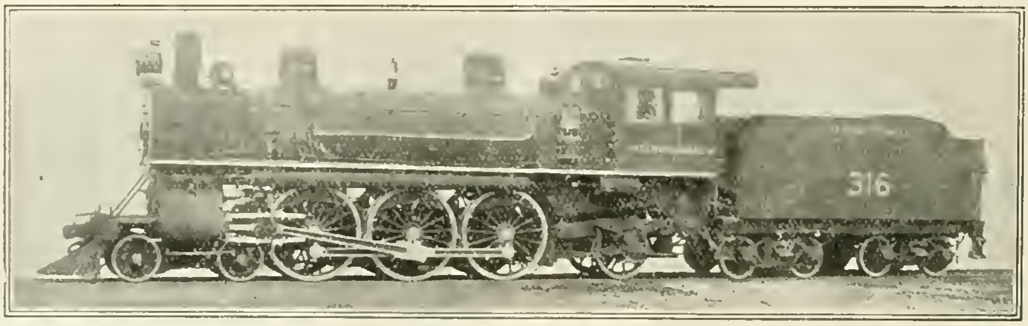
The Melbourne Argus of Dec. 1 said: "After having filled the onerous and responsible position of Chairman of Railway Commissioners for seven and a half years, Mr. Tait left Victoria yesterday amid practically unanimous expressions of appreciation and good will. That he should have felt impelled to leave Victoria while still in the prime of his strength and capacity, after having thoroughly familiarized himself with our conditions and requirements, and qualified himself to render even greater services, is to be regretted."

◆

Business Opportunities in Western Canada.—The C.P.R. Industrial Department has just issued a new edition for 1911 of its list of manufacturing and business opportunities in Western Canada. The present edition contains 136 pages of information regarding towns on the C.P.R. lines west of Port Arthur, with an index to towns, and another to industrial requirements. Special reference is made in the introduction to the towns which will be reached by new branches to be opened this spring. The names of over 50 towns are given on these seven new lines in Saskatchewan and Alberta. A list of water powers is given in the last four pages, but it is stated that the same is incomplete, as no complete survey has yet been made of the water powers in the central west. There are 70 water powers on the list, which are estimated to develop 4,174,500 horse power, and of these only a dozen have been developed to any extent, the total horse power utilized being about 105,000; while half a dozen more are being developed. The officer in charge of the compilation of this book, and the distribution of information regarding opportunities is J. F. Sweeting, Industrial Agent, Winnipeg.

The Canadian Society of Civil Engineers held its 25th annual meetings at Winnipeg, Jan. 24-27, during which time visits were paid to the city's power plant at Point du Bois, National Transcontinental Ry. shops, and other points of interest.

Toronto taxpayers voted Jan. 2 on a bylaw to raise $1,527,293 by debentures to build and equip a street railway on certain streets in newly annexed portions of the city.



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Small Tank Supplies 112 Days Continuous Burning

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New York, Atlanta, San Francisco, Boston, Chicago

Fuel Consumption on Railways.

During the year ended June 30, 1910, 6,252,054 tons of fuel were used on Canadian railways. Despite the fact that the mileage run was considerably greater, this volume of fuel was actually 547,094 tons less than for the preceding year. The returns do not disclose any particular reason for this surprising result. Following is a concise statement of the fuel consumed by the various classes of locomotives, together with the mileage:—

CLASS OF LOCOMOTIVE.	COAL.		WOOD.		TOTAL.	Miles run.
	Anthracite.	Bituminous.	Hard.	Soft.	Tons.	
	Tons.	Tons.	Cords.	Cords.		
Freight	73	3,585,221	1,136	22,255	3,597,541	47,239,088
Passenger	376	1,628,383	742	14,405	1,636,454	34,758,088
Mixed	4,128	383,009	521	2,418	388,693	8,211,350
Switching	323	617,025	72	5,817	620,308	15,581,077
Special.	....	9,051	....	23	9,063	229,872
Total	4,900	6,222,689	2,471	44,918	6,252,054	106,019,475

NOTE—One and one-half cords of hard wood and two cords of soft wood, calculated as one ton of coal.

The total cost of the fuel was $18,570,393, of which $16,832,817 was charged to road locomotives and $1,737,576 to yard locomotives. The cost of fuel in the year ended June 30, 1909, was $17,544,449. The consumption and cost of fuel per 100 miles run was:—

	Tons.	Cost.
Freight	7.62	$22.48
Passenger	4.71	13.89
Mixed	4.73	13.95
Switching	3.98	11.74
Construction	3.94	11.62

Montreal Telegraph Co.

The following report was presented at the 64th annual meeting, at Montreal, Jan. 13. The company's property, valued at $2,151,823.85, is operated and maintained by the Great North Western Telegraph Co., and guaranteed by the Western Union Telegraph Co., under an agreement for 97 years from July 1, 1881, under which payment of dividend is also guaranteed.

ASSETS.

Telegraph lines in Canada and U.S.	$1,625,890.00
Telegraph cables in Canada and U.S.	33,487.39
Telegraph offices in Canada and U.S.	212,500.00
Real estate in Montreal, Ottawa, Quebec, Toronto	279,946.46
Cash accounts receivable, bonds and other securities and real estate (not included in agreement with G.N.W.)	141,564.12
	$2,293,387.97

LIABILITIES.

Shareholders' capital		$2,000,000.00
Excess in value of property operated by the G.N.W. Tel. Co. over shareholders' capital		151,823.85
Dividend 186, payable Jan. 15, 1911	$ 40,000.00	
Unclaimed dividends, etc.	1,246.74	
Contingent fund	100,317.38	
		141,564.12
		$2,293,387.97

◆

The Michigan Railroad Commission has issued a general order to all railway companies doing business in the State, that they must equip their lines with a modern block signal system without delay. It is reported that the companies intend to oppose the order.

During Nov. 1910, 23 employes were killed and 26 injured in the course of their work on Canadian railways. Of the fatalities, 12 were due to being run over, four to being caught between cars, two to being burnt, and one each to a collision, to drowning, to a fall, to electricity and to falling material, while of the other accidents, seven each were due to being caught between cars and to falls, four each to falling material and to being run over, two to collisions and one each to being scalded and to exposure.

Too Late for Classification.

Alsek and Yukon Ry.—The Dominion Parliament is being asked to extend the time for the building of the authorized line. Lewis and Smellie, Ottawa, are solicitors for applicants. (July, 1909, pg. 473.)

Alberta Ry. and Irrigation Co.—A special meeting of shareholders will be held in London, Eng., Feb. 22, to authorize the directors to enter into an agreement with the C.P.R. for the purpose of selling or leasing the company's railways, lands, works, undertakings, franchises, rights, etc.

Alberta Central Ry.—The Board of Railway Commissioners has approved location plans of route from mileage 40 to 80, west of Red Deer, Alta. (Dec. 1910, pg. 1013.)

Atlantic, Quebec and Western Ry.—During 1910 track was laid on 23 miles, distributed as follows: from Grand River to Anse a Beaufils River, 14.5 miles; from third crossing of Anse a Beaufils to Barachois, 8.5 miles. The sections under construction, which it is expected will be completed during the current year are: from Anse a Beaufils River to third crossing of Anse a Beaufils, 4.5 miles, and from Barachois to Douglastown, 19 miles. The work is being done by the New Canadian Co., New Carlise, Que. (Jan., pg. 21.)

Dominion Development Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from the mouth of the Naas River on the Portland Canal, easterly along the Naas and Omineca rivers to Peace River, along that river to Peace River Landing, and through Alberta, Saskatchewan and the N.W.T. to Fort Churchill or Port Nelson, or both, but not running south of the 55th parallel in Alberta and Saskatchewan. A. T. Thompson, Ottawa, is solicitor for applicants.

Hudson Bay and Pacific Ry.—In an interview in Ottawa, Jan. 10, the mayor of Prince Albert, Sask., said:—"Preliminary surveys have been completed for the road 120 miles from Prince Albert, and actual work will be started inside of a month. The route will be from Prince Albert almost straight to Churchill, and connections will be made from Prince Albert with Edmonton and Calgary. It will not be in any way antagonistic to the government road, as two railways are not too many for the country's almost untapped resources. It is a British company, backed by British capital, and the people of Prince Albert are hoping for great things from it." (Nov., 1910, pg. 911.)

Hudson's Bay, Peace River and Pacific Ry.—Application is being made to the Dominion Parliament to incorporate a company with this title to build a railway from Port Nelson, northerly to Fort Churchill, on the western shore of Hudson Bay, thence westerly between the 58th and 60th parallels to Fort Vermilion on Peace River, southwesterly to Fort St. John, westerly and northwesterly to Laurier pass, thence westerly and southerly, but keeping north of the 56th parallel, to the Naas River, and along that river to the Pacific ocean at Port Simpson, B.C. It is desired to have authority to build branch lines from Fort St. John to Edmonton, Alta.; from the Cochrane River southerly and southwesterly to Prince Albert, Sask. H. W. Adcock, Winnipeg, is solicitor for applicants.

Little Nation Ry.—Action has been entered in the Ontario courts by C. Niabon, Sanborn, N.Y., to recover $17,500, which he alleges is his share of commissions paid to J. C. Kelly for the sale of the franchise of the L.N. Ry. and some timber limits. (Sept., 1910, pg. 727.)

Liverpool and Milton Ry.—A contract under the act relating to aid granted to certain railways has been entered into between the company and the Dominion Government, for the building of seven miles of line from Liverpool to Milton, N.S. A line between these places has been in existence for some years, and the granting of this aid will enable the line to be brought up to the standard of the Halifax and Southwestern Ry., with which it connects. (Oct., 1910, pg. 827.)

Portland Canal Short Line Ry.—Speaking at Vancouver recently, the Premier of British Columbia said the P.C.S.L.R., as originally chartered and projected, was practically completed and in operation. It was originally an individual enterprise of Sir Donald D. Mann, but it was about to assume much greater proportions, and the revised plans of Mackenzie, Mann and Co. looked to the "ultimate conversion of this line into a fourth transcontinental system for Canada." The line would be renamed, at the approaching session of the Legislature, in accordance with the enlarged plans, and it had been officially intimated that no government aid would be asked. (Jan., pg. 23.)

The Quebec Oriental Ry. is the title under which the lines known as the Baie des Chaleurs Ry., Atlantic and Lake Superior Ry., and the Atlantic, Quebec and Western Ry. are being operated. The lines in operation start at Matapedia, on the Intercolonial Ry., and extend to Grand River, Que., 152.10 miles. This shows the completion of an additional 17.05 miles in 1910. The line is under construction to Gaspe.

Reid Newfoundland Co.—Surveys for the branch line to Trepassey, are being made. A locating party has reached Ferryland, and a second party has started from Trepassey. It is expected that the surveys will be finished by March 31, and that construction will be started in the summer. (Jan., pg. 23.)

◆

Dominion Railway Subsidy Contract.—Under the act granting aid to certain railways, the Dominion Government has entered into a contract with the Liverpool and Milton Ry. for the building of a seven mile line from Liverpool to Milton, N.S.

Canadian Steel Foundries Ltd., has been incorporated under the Dominion Companies Act, with a capital of $5,000,000, and office at Montreal, to carry on the businesses of iron masters, steel makers and converters, colliery proprietors, iron founders, etc., and in connection therewith to build, own and operate roads, tramways, railway sidings, water courses, wharves, steam and other vessels, etc.

Notice has been given in the House of Commons of the following resolution: That whereas it is stated that on Canadian railways last year, one trainman in every 199 was killed, and one in every 33 was injured, in the opinion of this House it is the duty of the Government to cause a most thorough investigation to be made, as to the facts and conditions, as a result of which some means may be devised for the better protection of railway employes, and of preventing so great a loss of life and so great and frequent accidental injury.

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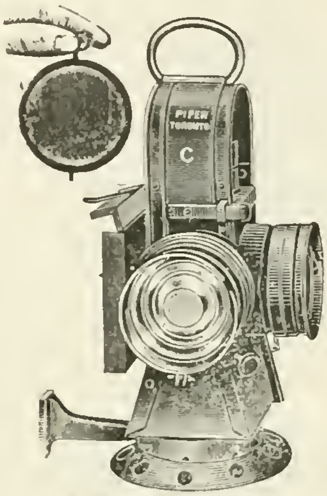
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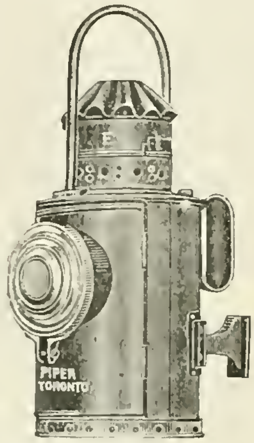
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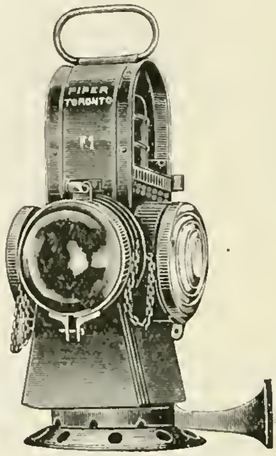
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BULLETIN 207.

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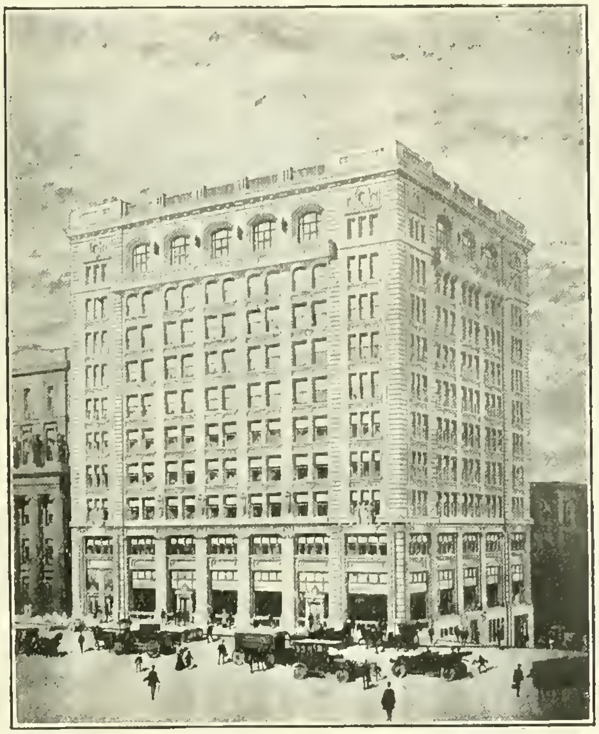
Dominion Express Co's. Montreal Building.

In Montreal, large commercial and high office buildings are replacing the older structures on St. James St., and on the very sites where once stood small houses and shop buildings, handsome and gigantic steel framed structures are fast becoming evident. On the corner of St. James and St. Francois Xavier Sts., the most important part of these busy thoroughfares, and on the site of that old landmark, the St. Lawrence Hall, adjoining the comparatively new banking premises of the Royal Bank of Canada, very extensive preparations are being made for the erection of what promises to be a fine and imposing structure for the Dominion Express Co., an illustration of which is given on this page. The erection of such a huge edifice in granite and terra cotta cannot fail to impress one as being a distinct and noteworthy step in the progress of commercial activity in Montreal, and apart from its size, the excellence of its appointments throughout will ensure its success as a business project.

The lower portion of the building, which includes the two main stories on St. James St. and the basement on the third side, will be in light coloured granite, treated with enriched pilasters and entablature, allowing the maximum amount of light for the ground floor offices, which are to be occupied wholly by the Dominion Express Co. and the C.P.R. as steamship and general ticket offices. At the ends of both the important fronts, special rusticated features will terminate the pilaster treatment, these features running the full height of the building, and in one of these will be placed the handsomely carved main entrance doorway to the building. Crowning this doorway will be a large granite cartouche embodying the company's arms, the figures being actually life size, and beside this main entrance will be two other entrances to the ticket offices from the street level.

The superstructure in white glazed terra cotta, will be very simply but effectively treated, the complete height of the eight stories above the granite work, with the ornament of conventional character set under each window, and above this, long balconies will break out, overhanging both St. James and St. Francois Xavier Sts., and large foliated and decorated openings will indicate a complete change in the treatment of that portion of the work below. This variation will mark the change from the typical office floors to the elaborately arranged apartments of the Montreal Club, whose future quarters are to be located in this building. The whole structure will give the impression of dignity and refinement, and the large windows on all sides will ensure very well lighted and bright business offices averaging 350 to 400 sq. ft. Each of these offices will be arranged for subdivision into private offices, and each will have an individual lavatory cabinet, apart from the general toilet rooms on each floor for men and women. The whole building will be heated on the vacuum system by steam and will have a very efficient system of mechanical ventilation. In each office will be an automatic temperature control device and a vacuum cleaning connection. The entrance hall and the upper halls will be treated in marble, and the stairs and elevator shafts will be enclosed in grilles and wired glass for fire protection. At the east end of the corridors an enclosed fire escape stair will lead down to St. Francois Xavier St., thus avoiding the dangers of the exterior iron fire escape now so much in use.



The suite of very large and comfortable rooms on the top floors devoted to the Montreal Club will be composed of billiard, reading, reception, dining, private dining and cloak rooms, richly finished in quarter cut oak and decorative plaster work, and over a portion of this floor will be a mezzanine storey, where the ladies' dining room, the club kitchen and service quarters will be located. and above this again, on the roof, will be an enclosed and heated pergola, which in summer will be used as a roof garden.

The whole of the basement on the front will be given up to a very large and well equipped restaurant and its culinary appurtenances, having an entrance from St. Francois Xavier St. and at the rear will be located the express storage rooms, with freight entrances from Fortification Lane, and a third class ticket office for the C.P.R. opening off St. Francois Xavier St. The sub-basement will be given up to machinery of every description for the various needs of such a building, and besides the heating plant there is a ventilating apparatus, ice-making plant and a system of water filtration. Ice water will be on tap in every office in the building.

Very extensive operations are being carried on to secure a proper bed for the foundations of this immense structure and owing to the uncertain nature of the soil, concrete caissons are being sunk to a depth of 86 ft. below the St. James St. level and excavations made under air pressure. The completed building is to be handed over to the proprietors on April 1, 1912, so that the tenants will have a month in which to get comfortably settled in their offices. Edward and W. S. Maxwell, of Montreal, are the architects, and P. Lyall & Sons, Ltd., the contractors.

◆

"Shop Kinks" is the title of an instructive book of 393 pages, compiled by R. Grimshaw, M.E., New York. It is a selection of notes on a great variety of mechanical subjects, collected by him from various sources. If information is desired as to how something in the mechanical way may be done a little differently and with the best results, a reference to the index of subjects will give the reference to a "kink" or "wrinkle" that has been found useful in some shop of established reputation. The publishers are the Norman W. Henley Publishing Co., 132 Nassau St., New York, and the price is $2.50. It can be obtained through the Railway and Marine World's book department.

An Ottawa dispatch says the contract for a marine depot at Prince Rupert has been awarded to the Pacific Construction Co., Vancouver, B.C., for $150,000.

The wireless telegraph station, which has been erected at Port Arthur, Ont., has been completed, and was recently opened for service, messages being received from stations on the Atlantic coast, 1,200 miles distant.

The Canadian Coal and Coke Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $15,000,000, and office at Montreal, to carry on a general mining business, and also that of iron founders, metal smelters, etc., and in connection therewith to build, own and operate wharves, warehouses, piers, docks, railway switches or sidings, etc.

The arbitrators have assessed the damages at $18,500, in the action brought against the C.P.R. by the estate of G. Vandyke, for damage to standing timber by fires caused by sparks from the company's engines. The action, which was heard by the District Court at Portland, Me., was for $155,000 damages. Other actions, in which the damages aggregate $500,000, are pending in the court, arising out of the same series of fires.

The amendments to the Civil Code, passed last session of the Quebec Legislature, given in our July, 1910, issue, which required transportation companies operating in the province to adopt the French language, in addition to the English, in printing tickets, time tables, etc., came into effect Jan. 1. It was anticipated that there would be considerable opposition on the part of the companies, especially those operating under Dominion charters, as the provincial jurisdiction is, at least, questionable, but the law is being complied with generally. One test case was entered in the early days of the year, but it is, apparently, not being pressed.

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Among the Express Companies.

S. T. Percy, at one time agent Canadian Ex. Co. at Woodstock, Ont., died at Port Huron, Mich., Jan. 8.

The Dominion Ex. Co. has been licensed to carry on its business in British Columbia, with head office at Vancouver, and R. Hulme, Superintendent, as its attorney.

The Board of Railway Commissioners has ordered the Canadian Northern Quebec Ry. to provide facilities for the handling of express traffic at Point aux Trembles.

J. J. Murray, heretofore secretary to the President and General Manager Dominion Ex. Co., has been appointed Superintendent of the Southern Division Dominion Ex. Co., with office at Toronto, vice D. J. McFeggan, deceased.

The House of Commons railway committee is considering a bill to compel express companies to make an annual return of all unclaimed money held in whatever form, such amounts to be subsequently turned over to the Government as trustee. It was explained that in the case of the loss of express orders, such publicity might lead to the recovery of the money, and that the bill would place the express companies in the same relation to the Government as the banks.

Judgment was delivered at Regina, Sask., recently in the case of the city against the Dominion Ex. Co. for the payment of a municipal tax. The company claimed that as it paid a provincial tax, it was under the terms of the Corporation Tax Act, and therefore exempt from municipal taxes. The judgement is to the effect that all corporations doing business in the province and subject to the Provincial Corporation Act, except railways, are liable for a business tax, also.

Reports from New York, Jan. 20, state that as the result of a conference between officials of Canadian and U. S. express companies, it was decided that a reduction in through rates between all stations in the U. S. and a number of offices in Canada, would go into effect shortly. It is stated that some of the Canadian companies have held back on account of the extra work involved at the International boundary, on account of the Customs regulations, should any reduction come into force. One of those present at the conference is reported to have said that under the new plan charges between all offices, when shipments were handled by more than one company, would be the same as though handled by one company, thus effecting a radical reduction in charges on all shipments to or from what are known as exclusive offices. At present, when shipments are handled by two or more companies, where joint rates are not in effect, the charge is made equal to the sum of the local charges of each company handling the shipment.

The Board of Railway Commissioners, after an enquiry, extending over a considerable period, has delivered a lengthy judgment on the question of the tariffs of express companies doing business in Canada, and, in effect, orders:—1. That there shall be four standard mileage basing scales, viz.: a—On all lines east of and including Windsor and Sudbury, excluding the T. and N.O.R. b—On all lines west of Sudbury to and including Sault Ste. Marie, Ont., Crows Nest, B.C., Canmore and Thornton, Alta.; also north of and including North Bay, Ont. c—On all lines west of and including Crows Nest, Canmore and Thornton, to the Pacific coast, and to Vancouver Island transfer ports. d—Vancouver island. 2. That the mileage groupings of b, c and d be assimilated to those of a, so there shall be no overlapping. 3. That the basis of a do not exceed $3, of b $5, c $6, for the 900-1,000 mile group. In Vancouver Island the mileage groups should be harmonized without increasing the rates. 4. On inter-division traffic which is not subject to the Sudbury basing schedule, the higher or highest standard mileage scale as applied to the through mileage shall govern in either direction. 5. Between points east of Sudbury and points west thereof, through rates may continue to be made by adding to the local tariff east of Sudbury the special basing tariff west thereof at present in use provided that the through rates are less in all cases than the sum of the tariff rates to and from Sudbury, and are not greater than the higher standard tariff as applied to the through mileage from the point of origin to destination. On inter-division traffic between points north of North Bay, and points east, south and west thereof, the proportional rates north of North Bay shall be the same as west of Sudbury, subject to the same provisions. It also rules that joint rates must be put into effect between all points not modified by competition, which shall be constructed on the basis of at least 10% off the lowest combination of merchandise rates between the same points, regardless of point of interchange, to apply in both directions, the minimum charge to be similarly constructed, unless joint minimum charges are specifically provided in the classification. Other items dealt with include graduate charges for small packages, the limits of delivery service, forms of contract, etc.

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In response to questions in the House of Commons, Jan. 18, the Minister of Agriculture, stated that the contract for the quarantine steamer Alva, which recently arrived at Halifax, was placed at Dartmouth, Eng., with the lowest tenderer, for $22,630, the highest tender being for $39,850.

The Marconi Wireless Telegraph Co. is proceeding against another company in London, Eng., for infringing its patents in relation to wireless telegraphy. So that the details of the mechanism and its workings can be brought clearly to the notice of the judges in the case, a complete installation has been erected in court by special permission of the Government.

Grain Elevator Notes.

The Maple Leaf Milling Co.'s elevator at Brandon, Man., was destroyed by fire, Jan. 19. Estimated damage, $75,000.

A meeting of the shareholders in the Montreal Grain Elevating Co., Ltd., in liquidation, was held at Montreal, Jan. 19, when the accounts of the winding up were submitted for confirmation.

The Alberta Pacific Elevator Co., Calgary, Alta., is reported to have purchased an additional 1,000 ft., making 1,600 ft. in all of water frontage on the north bank of the Fraser River, between Pitt River and Hammond station, on the C.P.R. It is stated to be the intention to erect a large elevator and warehouses there.

The final draft of the Government bill for dealing with terminal elevators, provides that the Government shall have the right to take over and operate as public utilities all such elevators, but the exercise of the right shall be left to the discretion of the cabinet, and that a commission shall be created, consisting of three members, to supervise all elevators.

The case brought against the Thunder Bay Elevator Co. by the Dominion Warehouse Commissioner, for making incorrect returns of the grain in its elevator on a specified date in 1909, was dismissed by the Winnipeg magistrate recently on the ground that prosecution should have been commenced within six months of the alleged offence. New charges were subsequently laid against the company for similar alleged offences during the latter part of 1910.

◆

The London, Ont., city engineer has ordered the London St. Ry. to install plainer night signs on its cars, the signs at present in use, being, it is claimed, indistinct.

An Ottawa dispatch says a special estimate of $3,000,000 is to be submitted to Parliament to make a start on the Georgian Bay canal as a government work.

The honorary treasurers of the King Edward VII. Memorial Statute Fund, Montreal, have acknowledged the receipt of $279.70, subscribed by members of the various C.P.R. office staffs located in Montreal.

The Railway Construction Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $10,000, and office at Montreal, to carry on a general contracting business. The incorporators are, G. V. Cousins, O. B. MacCallum, S. T. Mains, P. F. Brown, and W. R. Ford, Montreal.

The C.P.R. telegraph line between Regina and Saskatoon, Sask., is reported completed, so that messages, which, since the taking over of the Prince Albert line by the C.N.R., have been forwarded to the north, via Winnipeg, will now be dealt with over the new line, which has been erected in connection with the C.P.R. Regina-Bulyea branch.

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Association's Office, 70 Bond St., Toronto.

Executive Committee.—C. E. A. Carr, General Manager Quebec Ry. Light, Heat and Power Co.; P. Dubee, Secretary Montreal St. Ry.; H. M. Hopper, Secretary-Treasurer, St. John Ry.; J. E. Hutcheson, Superintendent and Purchasing Agent Ottawa Electric Ry.; C. B. King, Manager London St. Ry.; W. R. McRae, Superintendent Motor and Truck Department Toronto Ry.

Assistant Secretary, Aubrey Acton Burrowa, Secretary and Business Manager Railway and Marine World.

Official Organ, The Railway and Marine World.

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Electric Railway Track Laid in 1910.

The circular which we issue annually, asking the various electric railway companies for information as to new track laid during the calendar year, is not so promptly responded to in some instances as is that issued to steam railways. In the following table, which is approximately correct, returns are given from 14 electric railways, showing that 101.47 miles of new track were laid during 1910, against 57.50 in 1909. The figures in the cases of the lines preceeded by an asterisk are estimated, or have been obtained from sources independent of the company's replies to our circulars. Following are the individual figures:—

	Miles.	Miles.
Berlin and Waterloo St. Ry.		
Water St. to Albert St.		1.00
*British Columbia Electric Ry.		
Extensions of lines in cities	13.28	
Cloverdale to Chilliwack	51.40	
		64.68
Cape Breton Electric Co.		
Thompson's Corners to 1st Mine		.60
*Grand Valley Ry.		
Extensions in Brantford, etc.		3.50
Hull Electric Co.		
C.P.R. station to Chelsea Road toll gates		0.84
Montreal and Southern Counties Ry.		
St. Lambert to Longueuil	3.50	
Longueuil to wharf	1.00	
		4.50
*Montreal Street Ry.		
Various extensions		1.90
*Moose Jaw Electric Ry.		
Main St. tracks		2.50
*Niagara, St. Catharines and Toronto Ry.		
Welland to Port Colborne		7.00
*Ottawa Electric Ry.		
Various extensions		1.00
Quebec Ry. Light and Power Co.		
Quebec County Ry.'s line, Maple Ave., Que., to Sillery		2.33
Sherbrooke St. Ry.		
Lennoxville to Sherbrooke		3.00
Toronto Ry.		
Harbord St. line	1.40	
Wilton Ave. line	1.04	
Adelaide St. line	.74	
		3.18
Winnipeg Electric Ry.		
Extensions, spurs, intersections		5.44

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Electric Railway Statistics for 1909-10

The number of reporting electric railway companies increased from 48 to 52 during the year ended June 30, 1910. The Comptroller of Railways Statistics states that the classification and schedules which were made effective in 1908 are now thoroughly understood by the officials, and that as the work proceeds satisfactory and helpful statistics may be counted on. The city of Edmonton, which put its line in operation in 1909, did not report. Following is a comparison of the mileage for the past two years:—

	1910 Miles.	1909 Miles.
1st main tracks	1,049.07	988.97
2nd main track	242.39	215.05
Total main track	1,291.46	1,204.02
Sidings, etc.	91.39	83.62
Total computed as single track	1,382.85	1,287.65

There were added 60.10 miles of first main track, and 95.20 miles of total track The capital obligations of the various companies were $102,044,979, of which $58,653,826 was reported as stocks and $43,391,153 as funded debt. In the previous year the total capital obligations was reported at $91,604,989. The subsidies received from governments and municipalities amounted to $493,346.

The gross earnings from operation were $17,100,789.48, of which $16,821,376.74 was reported as car earnings, and $279,412.74 as miscellaneous earnings. The gross earnings showed an increase of $2,275,852.93 over those of the previous year. The operating expenses were $10,139,070.30, or 59.29% of gross earnings. The deductions from income included $1,311,953.65 for taxes, $1,449,152.48 for funded debt; $156,546.16 interest on floating debt, and $36,106.97 for miscellaneous deductions, a total of $2,953,759.26, against $2,198,306.48 for the previous year. Fourteen companies reported deficits amounting in the aggregate to $1,544,892.65.

The companies carried 360,964,876 pay and 99,227,824 transfer passengers, and 852,294 tons of freight. The total car mileage was 65,249,166, against 60,152,846 in the previous year. The freight car mileage of 889,561 is included. There were added to the rolling stock 245 cars, and on June 30, 1910. the rolling stock consisted of 1,795 closed cars, 994 open cars, 337 combination cars, 282 freight cars, 25 mail, express and baggage cars, seven combination freight and passenger cars, and 349 miscellaneous cars, including work cars, snow plows, and sweepers.

The number of employes was reported to be 11,390, their aggregate salaries and wages being $6,316,777.20. During the year 95 persons were killed and 2,538 injured, against 68 killed and 2,139 injured in the previous year. Of those killed 14 were passengers, 13 employes, and 68 others, while of those injured, 1,595 were passengers and 227 employes. An average of one passenger was killed for every 25,783,205 carried, and one injured for every 226,310 carried.

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Pay-as-you-leave Cars.

The London, Ont., Street Ry. is operating pay-as-you-leave cars. For several years the company's cars, which are of the original design of side-aisle cars, have been closed at the front end during the winter by the stoves, so that passengers have to get both in and out at the rear end. When passengers get on the car and stop on the rear platform the conductor takes the fare-box and collects the fares as before, but if the passengers do not stop on the platform but go inside the car, the conductor stands just inside the door with his fare-box located in a bracket and collects the fares as the passengers leave the car. In the case of a crowded car, it saves the conductor from crowding up through the passengers to collect the fares, and then crowding to the back end again, and another advantage claimed is that the conductor is always at the back end of the car to properly handle passengers getting on and off. The conductors must, of course, take notice whether any of the passengers from whom he may have collected fares on the platform afterwards go into the car. This, however, the passengers very seldom do, but if they do, it is claimed the conductor should have no trouble remembering that they have paid their fare. This conditions is certainly nothing like so bad for a conductor to overcome as the old method where the conductor would collect the fares on the back platform, go into the car collecting fares, picking up new passengers, who mixed in with the old ones in the car, and whose fares he would later have to go around and pick out.

It is admitted that this method is not quite so good as the straight pay-as-you-enter or pay-as-you-leave system, but taking all local conditions into consideration, it is contended that it is the most suitable for London.

The company has some cars equipped with folding gates at the back platform which are operated by the conductor from his position just inside the car These gates, it is claimed, have the advantage of making it absolutely impossible for persons, especially women, to get off before the car stops, in which case it would clearly be the fault of the conductor, he not being able to offer the old excuse of being up in the car collecting fares at the time. The disadvantage of the gates, however, is that active passengers who like to jump on and off the cars cannot do so and become disgruntled. and if the conductor does open the gate for them while the car is moving, the company might be more liable for any accident that should happen.

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Electric Ry., Finance, Meetings, Etc.

British Columbia Electric Ry.—Gross earnings for Nov. 1910, $355,292; working expenses $201,891; net operating earnings $153,401; renewal funds $25,417; net earnings $127,984; approximate income from investments $20,000; net income $147,984, against $244,520 gross earnings; $157,880 working expenses; $86,640 net operating earnings; $16,394 renewal funds; $70,246 net earnings; $16,500 approximate income from investments; $86,746 net income for Nov. 1909. Aggregate gross earnings for five months ended Nov. 30, 1910, $1,602,414; net earnings $670,628, against $1,211,692 and $541,042 for same period 1909.

Halifax Electric Tramway.—Railway receipts for Dec., 1910, $17,563.76, and for two weeks ended Jan. 14, $7,600.10, against $16,110.26, and $6,991.77 for same periods 1909 and 1910 respectively.

London St. Ry.—Gross earnings for Dec., 1910, $23,887.90; expenses, $16,974.12; net earnings, $6,913.78; deductions, $2,441.75; net income, $4,472.03, against $21,674.21 gross earnings; $15,469.06 expenses; $6,205.15 net earnings; $2,441.75 deductions; $3,763.40 net income for Dec., 1909. Aggregate gross earnings for 12 months ended Dec. 31, 1910, $256,278.48; expenses, $182,191.68, net earnings, $74,086.80; deductions, $28,750; net income, $45,336.80, against $243,359.39 gross earnings; $169,830.44 expenses; $73,528.95 net earnings; $28,887.56 deductions; $44,641.39 net income for same period 1909.

Montreal St. Ry.—Passenger earnings for Dec., 1910, $371,691.09; miscellaneous earnings, $5,583.08; total earnings, $377,274.17; operating expense, $235,209.36; net earnings, $142,064.81; city percentage on earnings, $17,005.37; interest on bonds and loans, $15,384.22; rental leased lines, $552.50; taxes, $4,700; total charges, $37,642.09; surplus, $104,422.72; expenses per cent. of earnings, 62.34, against $333,155.21 passenger earnings; $4,407.97 miscellaneous earnings; $337,563.18 total earnings; $212,006.44 operating expenses; $125,556.74 net earnings; $15,599.94 city percentage on earnings; $14,382.01 interest on bonds and loans; $198.62 rental leased lines; $4,000 taxes; $34,480.57 total charges; $91,076.17 surplus; 62.80 expenses per cent. of earnings, for Dec., 1909. Aggregate total earnings for three months ended Dec. 31, 1910, $1,130,060.17; operating expenses, $668,401.32; net earnings, $461,658.85; total charges, $101,653.23; surplus, $360,005.62, against $1,026,441.40 aggregate total earnings; $586,878.97 operating expenses; $439,562.43 net earnings; $96,344.84 total charges; $343,217.59 surplus for same period 1909.

Montreal St. Ry.—A dividend of 2½% for the quarter ended Dec. 31, 1910, has been declared, payable to shareholders of record on Jan. 13, and holders of share warrants in redemption of coupon series 9a, on Feb. 1.

St. John's (Nfld.) St. Ry.—Gross earnings for 1910, $35,085. The lines are owned and operated by the Reid Newfoundland Co.

St. Thomas Street Ry.—Application is being made to the Ontario Legislature, by the city council, for power to borrow various sums of money, and it is stated that the city's debt is $734,648.28, exclusive of the $50,000 bonds of the Street Ry. guaranteed by the city. The line was taken possession of by the city several years ago on default being made, and is being operated at a loss.

The city treasurer reported that $2,300 was required to meet the expenses for the year ended Dec. 31, 1910, and that $7,031.51 was due for power.

Toronto Ry.—During 1910, the city received from the company, $83,040.58 for mileage and $596,297.35 percentage on earnings, a total of $679,337.93. Since 1892, the first year of the franchise, the amount paid to the city, has grown from $120,373.38.

Toronto Ry.—A dividend of 1¾% for the quarter ended Dec. 31, 1910, has been declared.

Winnipeg Electric Ry.—Gross earnings for Nov. 1910, $341,560; operating expenses $171,539; net earnings $170,021, against $252,231 gross earnings; $125,713 operating expenses; $126,518 net earnings for Nov. 1909. Aggregate gross earnings for 11 months ended Nov. 30, 1910, $2,914,059; net earnings, $1,466,980, against $2,340,202 and $1,171,445 for same period 1909.

◆

The Brockville Construction Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $100,000 and office at Brockville, Ont., to carry on a general contracting business, including the construction of railways, canals, dry docks, dams, elevators, wharves, bridges, and excavating and dredging works. The incorporators are W. S. Buell, J. H. Botsford, G. H. Mallory, I. M. Braniff, and A. O'Donahoe, Brockville, Ont.

Internations Contracting Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $50,000,000, and office at Winnipeg, to treat timber or articles into the manufacture of which, timber enters, with oils, chemicals, etc., for the preservation thereof; to carry on a general contracting business, including the construction of wharves, docks, locks, piers, bridges, tramways, etc; to carry on a general engineering business for the manufacture of steel, iron, railway rolling stock, ships and vessels of all descriptions, grain elevators, etc., and with power to operate steam and other vessels for the carriage of passengers and freight. The incorporators are R. L. Miller, E. W. Peters, S. H. Green, E. R. Chapman and M. T. Hunter, Winnipeg.

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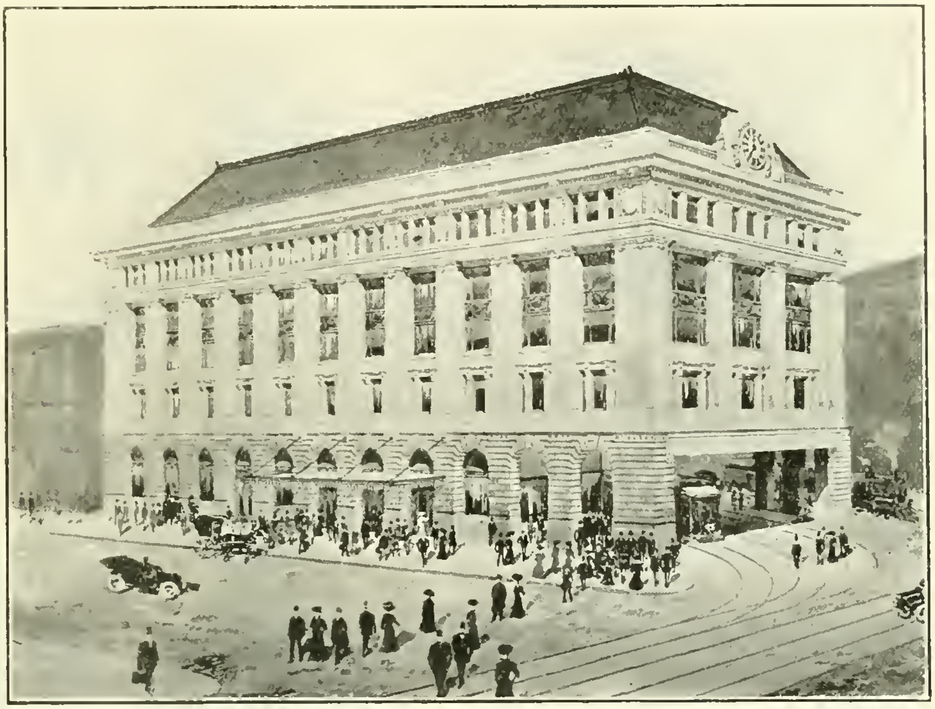

British Columbia Electric Railway Co.—Proposed new general offices and interurban station at Vancouver.

Following are extracts from the annual report for the year ended June 30, 1910, presented at the annual meeting in London, Eng., Dec. 19:—

For the twelve months the gross receipts show an increase of $730,492, or 31%, and the net earnings, including income from investments and subsidiaries, and after charging renewals, show an increase of $176,341, or 19% over the preceding year. From June 30, the close of the financial year under review, up to Oct. 31, 1910, there has been a still further increase in gross earnings of $279,950, or 29%, and in net earnings of $77,281, or 17%. The following charges have been made against the revenue account of the year:—

				£	s.	d.
Provision for renewals maintenance (from which £15,242 4s 2d has been deducted for adjustments and expenditure on renewals during year)				46,425	18	10
Special provision against depreciation in value of certain obsolete steam plant				3,000	0	0
Bonus to employes				11,333	0	0
Amount added to capital amortization fund				2,098	16	3
The net profit for the year, after making the above deductions, amounts to				198,869	13	7
Add balance brought forward last year				7,061	2	11
				205,930	16	6
Deduct—						
Interest on debentures and debenture stock to June 30, 1910	£59,478	14	5			
Dividenda already paid—						
On 5% cumulative perpetual preference stock for year ended June 30, 1910	25,000	0	0			
On preferred ordinary stock for year ended June 30, 1910	30,000	0	0			
On deferred ordinary stock for 6 months to Dec. 31, 1909	24,000	0	0			
				138,478	14	5
Leaving available for further distribution and reserves				£ 67,452	2	1
From this the directors have decided—						
To recommend the payment of a dividend on the deferred ordinary stock at the rate of 8% per annum for the six months to June 30, 1910, making 8% for the year	£24,000	0	0			
To transfer to reserve fund	37,845	6	0			
				61,845	6	0
To carry forward to next account				£ 5,606	16	1

There has been deducted from the reserve fund £18,531 9s. 7d., representing the difference between the net amount realized by, and the par value of £530,000 4¼% debenture stock, issued in Feb., 1910, and there has been added to the reserve fund £39,584 4s., representing the premium on £500,000 new capital, less expenses, issued in Sept., 1909. After the transfer now recommended by the directors as above, the reserve fund will amount to £235,000.

The number of lamps in use at June 30, 1910, was 439,315, an increase for the year of 92,289. The number of passengers carried during the year was 34,476,804, an increase for the year of 9,293,065. The commercial conditions at present existing in Vancouver and the prospects for the future have been carefully examined by the directors, who are pleased to report that the information at their disposal, obtained from reliable sources, indicates the existence of a sound basis for the undoubted prosperity which at present prevails throughout the whole province and gives promise of its continuance in the future.

The rapid development of the territory, and the great increase in the population of the cities served by the company, have made it necessary for your directors to give the most careful consideration to the question of the future supply of power, and in this connection J. Buntzen, one of the directors, undertook a special mission to British Columbia to investigate the entire situation and consider on the spot the recommendations previously received from the management. Early in 1910 it was decided to increase the capacity of the auxiliary steam plant in Vancouver, which provides for sudden temporary demands for extra power and a reserve in case of a breakdown on the transmission line or at the hydraulic plant. The work of increasing the capacity of the water power installation at Lake Coquitlam has also been continuously pushed forward, as has also the new water-power installation at Jordan River, near Victoria. A scheme has been sanctioned by your directors by which the power supply of the company can be gradually increased to meet any possible demands of the future. The addition to the Vancouver steam plant was satisfactorily completed in April last, and it is confidently expected that the enlargement of the Coquitlam water tunnel and the new Jordan River plant will be completed early in 1911. The other plans include the gradual development of the company's water powers at Chilliwack and Jones Lake, and the systematic proportionate increase of the auxiliary steam plant. Altogether, the plans provide a total ultimate supply of about 200,000 continuous horse-power.

The Fraser Valley line was formally opened from New Westminster to Chilliwack, 65 miles, by the Prime Minister of British Columbia, on Oct. 3, 1910. The road and electrical equipment have been constructed in a permanent and efficient manner, and the freight and passenger traffic already secured is very satisfactory. A considerable mileage of preliminary track has, during the year, been replaced by heavy permanent construction, and extensions, aggregating about 21 miles, have been constructed, or are in process of construction, in the territory between Vancouver city and New Westminster city and the Fraser River estuary. These branch lines are required to give necessary transportation facilities to the inhabitants of this district, which is developing with great rapidity, and, although they are not expected to prove immediately remunerative, your directors are satisfied they will, in the course of a few years, prove valuable sources of revenue. In addition to the foregoing, the company has incurred considerable expenditure as a result of the extension of the lighting branch, the provision of increased rolling stock, particularly for the Fraser Valley line, and further land, buildings and electrical equipment rendered necessary by the growth of the business. Your directors view with particular satisfaction the completion of the Fraser Valley branch and the approaching completion of other extensions, and of the Coquitlam water tunnel and the Jordan River water-power plant, as for the past two years during construction a very large sum has been unremuneratively locked up in these enterprises, which may be expected to contribute substantially to the company's revenue for the future.

The directors have again pleasure in expressing their appreciation of the very satisfactory services rendered by the management and staff in British Columbia.

The following expenditures on capital account were made during the year:—

Rolling stock	$ 374,221.64
Railway extensions and track improvements	643,915.90
Lighting extensions	193,040.96
Power extensions	61,438.90
Steam plant	401,947.98
Lands and buildings	110,916.92
Electrical machinery	98,791.24
Extending light and power system under municipal charter	41,610.61
North Vancouver—rolling stock, metres, transformers and initial installations	27,611.08
New Westminster and Eburne—electrification of line	39,861.47
Fraser Valley branch—rolling stock	194,543.30
Sundries	75,548.46
	$2,263,448.46

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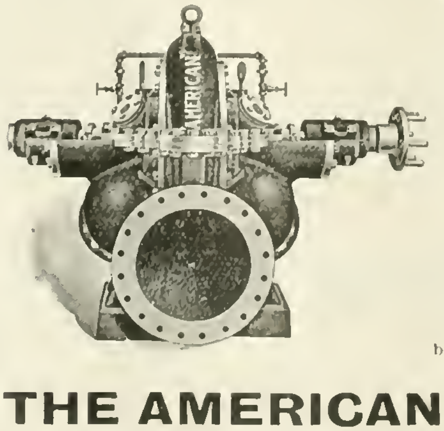

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The Street Car Situation in Toronto.

The Ontario Railway and Municipal Board gave judgment Jan. 19 in the case of the City of Toronto vs. The Toronto St. Ry. Co. respecting the bylaws in regard to the pay-as-you-enter system and the prohibition of smoking. "The opinion of the Board" was read by the Chairman, J. Leitch, K.C., the other members of the Board, Vice Chairman A. B. Ingram and H. N. Kittson, dissenting, and holding that two rear doors are necessary, one for entrance and one for exit; the Chairman holding that the company has the right to decide as to whether one door or two shall be provided at the rear. The Chairman, being of the opinion that the question is one of law, his judgment prevails over those of the other two commissioners.

In the discussion with counsel which followed the reading of the judgment it developed that the case might be carried to the Court of Appeal, the Chairman expressing himself in favor of that course and adding that he could appear before the court and state his position. In view of the importance of the case the judgments are given in full.

The following is Chairman Leitch's judgment: This is an application to rescind by-law 36, of the Toronto Ry. Co. respecting closed motor and trailer cars, which was sanctioned by the Board, Dec. 2, 1910; or in the alternative, to suspend the operation of the by-law until such time as the company put proper pay-as-you-enter cars into service, and for an order directing the company to supply such cars of such character and dimensions, and within such time as the Board may order. The applicants also ask for an order directing the company to discontinue the use of trailers on their street railway system within six months and requiring the company to construct on its cars compartments for the use of smokers. This matter first came before the Board on Dec. 9, and was adjourned until Dec. 19. After hearing the evidence of several witnesses the Board further adjourned the hearing for one month from Dec. 19, in order that the Board's experts might have an opportunity of examining p.a.y.e. cars in cities in the U.S. and Canada, and observe their operation.

The Board delegated one of their engineers, J. F. H. Wyse, and D. M. Campbell, Manager and Car Constructor, Preston Car and Coach Co., to inspect the p.a.y.e. cars in operation in other cities of Canada and in several cities in the U.S., and to report their recommendations as to the changes and alterations that the company should make in their cars, and the equipment they would have to provide in order to instal an up-to-date p.a.y.e. system. The experts, accompanied by Vice Chairman Ingram, visited Cleveland, Buffalo, Rochester, Montreal and Ottawa, and after their return to Toronto, made a careful inspection and investigation of the p.a.y.e. and other cars now in operation here. The experts have advised the Board that there is no standard p.a.y.e. car suitable for all places and all conditions; that the style of car adopted in different cities depends upon local requirements and the opinion and inventive genius of the car constructor; and the system being comparatively new is in a transition state and is being modified and improved from time to time, as experience renders it necessary and advisable. There is one thing certain, however, and that is that the p.a.y.e. system is a vast improvement upon the old method of collecting fares by passing around the box.

The company's by-law 36, which the Board sanctioned, is necessary and proper for the operation of a modern p.a.y.e. system. Had it not been so designed, and had not the company a considerable number of p.a.y.e. cars in commission, the Board would not have sanctioned it. Now that the company have determined to instal the new system and to adopt a modern method of collecting fares, the first question, which lies at the threshold of this application, is as to whether or not the Board have power to make an order directing the company to make their p.a.y.e. cars of such character and dimensions as the Board may seem proper. Sec. 17 of the Act incorporating the Toronto St. Ry. Co., 55 Vict., chap. 99, provides that the fare of every passenger shall be due and payable on entering the car, and any person refusing to pay the fare when demanded, and refusing to quit the car when requested, shall be liable to a fine of $10 with costs. Sec. 116 of the Ontario Railway Act, 1906, provides that the fare or toll shall be due and payable by every passenger on entering the car or other conveyance, and every passenger who refuses to pay his fare may, by the conductor of the train and the train servants of the company, be expelled from and put off the car with his baggage, at any usual stopping place, or near any dwelling house, the conductor first stopping the train and using no unnecessary force. By subsec. 2 this section is made expressly to apply to street railways. By both of these Acts, the fare is due and payable by the passenger on entering the car, and he is liable under the first mentioned act, if he refuses to pay his fare or to quit the car when requested, to a fine of $10, and under the second act is liable to be expelled from the car. Neither of these acts fixed the method by which the fare is to be demanded and collected. Heretofore the passenger has been presented with a fare box after entering the body of the car. The company want to change this system and substitute for it a stationary p.a.y.e. box, fixed in a rear end vestibule, in which the passenger will be required to deposit the fare before he enters the seated part of the car. Now that the company are departing from their former method of collecting fares, have passed their by-law 36, and are adopting a different practice and require different equipment and appliances in order to make the change of system workable, the Board are of the opinion that, under and by virtue of the Ontario Railway and Municipal Board Amendment Act, 1910, they have power and authority to determine the proper and adequate practice, equipment and appliances, necessary for the p.a.y.e. system.

The experts, complying with the Board's instructions to inspect the cars in use and to observe the operation of the p.a.y.e systems in other cities, and after a careful and exhaustive examination of all types of Toronto cars, both those that have been changed and those that have not been changed, and after taking into consideration the traffic conditions that exist in Toronto, have made the following recommendations:

1. That rear vestibules on all cars intended or the collection of fares by the p.a.y.e system should be enclosed, except over the steps.

2. That the length of the rear platforms should be governed by the style of car, and its seating capacity, i.e.:

A. Car bodies 18 to 22 ft. in length (both sizes inclusive) should have a minimum rear platform length of 56 ins. clear inside, measured longitudinally, with a minimum step length of 39 ins.

B. Cars having bodies of 22 and under 28 ft. in length should have a minimum rear platform of 62 ins. clear inside, measured longitudinally, with a minimum step length of 44 ins.

C. Cars having bodies 28 to 32 ft. in length (both sizes inclusive) should have a minimum length of rear platform of 68 ins. clear inside, measured longitudinally, with a minimum step length of 48 ins.

D. Cars having bodies over 32 ft. in length should have a minimum rear platform of 74 ins., clear inside, measured longitudinally, with a minimum step length of 54 ins.

3. That the platform fare box now in use by the Toronto Ry. Co., or an approved one of similar design be used on all cars intended for the collection of fares by the p.a.y.e. system.

4. That an upright be placed near the centre of each step opening, extending from the floor to the ceiling, which can be used as a grab handle, the spacing from the car body to be left to the discretion of the company. That the grab railings now in use on the ends of the car be retained in their present location. That a similar grab railing be placed all around the interior of the rear vestibule. That at the discretion of the company a grab railing be put on the fare box.

5. That in all cars intended to be used for the collection of fares by the p.a.y.e. system, there shall be one door in the rear end bulk head on the devil strip side for entrance, and one door on the street side for exit, or in lieu of the two doors there shall be one reasonably large door on the devil strip side, the minimum width of which should not be less than 36 ins. In the event of two doors being used there shall be a dividing rail to separate the flow of in-going and out-going traffic.

The experts report that one large door on the devil strip side has advantages over the two-door system, but as the two-door system has given good satisfaction in other cities, they give it as their opinion that either system would be satisfactory. They also recommend that the system now in operation of entering cars by the rear door and leaving by the front should be continued.

The Board adopts the said recommendations of the said experts, and determines that the same are reasonable, safe, proper and adequate regulations, practices, equipment, and service for a p.a.y.e system, and for the cars of, and for the transportation of passengers by the Toronto Ry.

The Board are of the opinion that the company have the right to select and adopt either a single door or two doors between the rear vestibule and the body of each motor car. Where the opinion of the experts is equally divided as to whether one door or two doors is the better plan, the company has the right to select whichever plan they choose.

The Board are of opinion that all the company's motor cars should be changed into p.a.y.e cars with all reasonable dispatch; that each car should be put in commission as soon as finished; that the whole system should be completed in 18 months from this date; and that such changes and equipment should be subject to the direction and inspection of one of the Board's engineers. The sketch hereto annexed shows the arrangement of the rear end vestibule. The p.a.y.e system will not apply to cars when they are changed into what are known as summer cars.

The Board further suspends the operation of by-law 36, but the same shall automatically take effect upon each motor car of the Toronto Ry. system, when and as soon as each car is equipped as aforesaid to the satisfaction of the Board's engineer.

In view of the congested conditions that exist in Toronto, the Board declines to order the company to discontinue the use of trailers or to construct its cars with compartments for the use of smokers. To do otherwise, at least until such time as the new lines and cars ordered by the Board in May, 1907, are completed, would only intensify and aggravate the congestion.

In the event of the decision being reversed by the Court of Appeal on any of the questions of law involved in this opinion, the Board reserves further consideration and direction, and the question of costs, and the experts' fees and expenses.

A formal order can issue in terms of this opinion to be settled by the Secretary in case the parties differ.

Vice Chairman A. B. Ingram, gave the following dissenting judgment: Accompanied by five experts, I have investigated the p.a.y.e system in Cleveland, Buffalo, Rochester, Montreal and Ottawa, where traffic conditions are similar to those prevailing here. I find that in all these cities, except Ottawa, the companies have a separate entrance and exit at the rear end of each car on which the p.a.y.e system is used. Ottawa has tried one door at the rear end, but is now constructing all its new cars with separate entrance and exit at the rear end. In addition to the experts who accompanied me, I have consulted with traffic and car building experts, in all the above mentioned cities and find that, as a matter of practical car building, the Toronto Ry. cars can be altered by the extension of the platform and putting in or installing a separate entrance and exit at the rear end of each car, and properly stepped and vestibuled. My investigations have convinced me that, where the p.a.y.e system is in use, a separate entry and exit are necessary at the rear end of each car. If the Toronto Ry. desire to adopt the p.a.y.e system, they should be directed to instal a separate entrance and exit at the rear end of each car, and to supply a proper vestibule, suitably heated, for the adequate protection of the conductor. Having regard to by-law 36, of the Toronto Ry. Co., this by-law does not appear to me to be suitable for cars having two rear doors. I think, therefore, that the company should apply to the Board, on notice to the city, for approval for a new by-law to replace by-law 36.

I regret that my opinion does not agree with that of the Chairman in these particulars, but I cannot arrive at any other conclusion after my personal investigations of the working of the p.a.y.e system.

The other member of the Board, H. N. Kittson, also dissented as follows: I regret that in this matter my opinion differs in some respects from that of the Chairman as set forth in the judgment which he has read. I have had the privilege of consulting with the Vice Chairman who, accompanied by a number of experts, visited a number of cities in the U.S. with a view of investigating the working of the p.a.y.e system in these cities where the conditions were closely similar to those existing in Toronto. These investigations have shown that it is practical to so alter the cars here that the rear platforms can be extended and that a separate entrance and exit can be installed, that is to say, that two doors can be used at the rear end of the car. In Cleveland, Buffalo, Rochester and Montreal there have been installed, and there are now in use cars that have two doors at the rear end for the p.a.y.e system, and the Ottawa Electric Ry. Co., having previously operated their cars with one large door in the rear, are now profiting by their experience and are constructing all the new cars with two doors at the rear end. I am aware that altering the present cars in use by the Toronto Ry. Company so as to make them up to date p.a.y.e cars will involve considerable expense, but, as the company has, of its own initiative, applied for leave to use the p.a.y.e system, I am of the opinion that in Toronto the practice and system which have been tested and proved by actual experience and trial to be the best, should be adopted. I concur in the judgment of the Chairman in the main, excepting

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that, in my opinion, two doors are absolutely necessary at the rear end of the cars if the p.a.y.e system is to be enforced. I further dissent from the view expressed by the Chairman that the company have the right to select and adopt either a single or a two-door system at the rear end of each car. The Chairman sets forth that, under the Act of 1910, the Board has power and authority to determine the proper and adequate practice, equipment and appliances necessary for the p.a.y.e system. In that view, the Board has the right to order the installation by the company of separate entrances and exits on all cars where the p.a.y.e system is enforced, and I am, therefore, of opinion that this Board should order the company, within a reasonable time, to alter their cars so that a separate entrance and exit at the rear end will be installed before the p.a.y.e system can be permitted on such cars.

The city is proceeding against the company on a charge of maintaining a common nuisance, the grand jury returning a true bill at the Assizes, Jan. 10, to the following effect:

"That the Toronto Ry. Co. unlawfully neglected and unlawfully omitted to take reasonable precaution to avoid danger to human life in the operation of its cars in Toronto, by having in its charge and under its control and by maintaining and operating cars that were not of the most approved design for service and comfort, and by neglecting to provide proper or approved fenders, guards, or appliances, lights and signals, to avoid danger to human life, to be attached to the cars, in consequence whereof the lives, safety, health, property, and comfort of the public, as well as foot passengers, as also other subjects of our Lord the King, were endangered."

◆

Projects, Construction, Betterments, Etc.

British Columbia Electric Ry.—During 1910 the company added about 76 miles to its lines, the additions to the lines in Vancouver and suburbs representing 13 miles, and the new Fraser Valley line about 63 miles.

Work has been started on the new station in New Westminster, and preparations are being made for the building of additional stations on the Fraser Valley line. A new right of way has been acquired near Sapperton for a section of the Vancouver, Fraser Valley and Southern Ry., and permission has been granted for the laying of temporary spur tracks to some gravel pits opened up for ballast purposes. (Jan., pg. 71.)

Calgary Municipal St. Ry.—The city council has entered into contracts for materials, etc., for the building of an additional 22 miles of line on the streets of Calgary, Alta., exclusive of second track. The work is to be proceeded with in the spring, and it is expected to get through with it by Nov. 1. A new power house is being erected at a cost of $125,000. The equipment will consist of a 1,200 h.p. Babcock and Wilcox boiler, 1,200 h.p. Robb-Armstrong engine, and a 900 k.w. generator. (Dec., 1910, pg. 963.)

Cape Breton Electric Co.—The question of an extension of the line from Sydney to New Waterford, N.S., was discussed at the meeting of the city council Jan. 16, and a committee was appointed to confer with the company. (Jan., pg. 71.)

Central Canada Ry. and Power Co.—Application is being made to the Manitoba Legislature for construction powers in addition to those conferred by chap. 56 of the statutes of 1905. The company is asking for power to build a railway from Winnipeg on St. Boniface northeasterly to the Winnipeg River in tp. 17, 18 or 19, and thence to the northern boundary of the province, with branch lines to a point on Lake Winnipeg to be approved of by the Lieut.-Governor-in-Council. Fisher, Wilson, Battram and Hamilton, Winnipeg, are solicitors for applicants.

A Winnipeg dispatch, Jan. 17, says the company's solicitors state that the enterprise is not controlled by any of the other railway interests, that the company has no offices in Winnipeg, but a number of citizens are interested in it, and that if parliamentary sanction is given to the undertaking, the railway mentioned in the application will be the first piece of construction.

Dunnville, Wellandport and Beamsville Electric Ry.—The Ontario Legislature is being asked to authorize the company to extend its projected line from Fenwick to Welland, Ont., and for an extension of time for the building of the already authorized lines. (April, 1910, pg. 310.)

Edmonton Interurban Ry.—An act incorporating a company with this title to build a system of electric railways radiating from Edmonton, Alta., was passed last session of the Alberta Legislature. (Dec., 1910, pg. 1065.)

Frontier Electric Co.—Press reports Jan. 12 state that a company with this title proposes to build an electric railway from Buffalo to Niagara Falls, N.Y., for which plans have been filed with the clerk of Erie county. Other reports state that it is proposed to connect up this line with the Niagara, St. Catharines and Toronto Ry. by means of a bridge across the Niagara River. Capt. G. Shepard, Niagara Falls, N.Y., is President of the company.

Grand Valley Ry.—The Board of Railway Commissioners has approved, subject to certain terms, the extension of the line in Brantford, Ont., and directed that certain crossings of the G.T.R. and of the Toronto, Hamilton and Buffalo Ry. be protected. (Dec., 1910, pg. 1067.)

Great Falls Power Co.—Selkirk Electric Ry.—Suburban Park Ry.—By an act passed last session of the Manitoba Legislature the company, notwithstanding the fact that it had not complied with the provisions of the provincial Railway Act, was declared not to have forfeited its charter of incorporation, and was given an extension of time within which to build its line of railway. In the title the act is described as being to amend "chap. 61 of 1 and 2 Edward VII, and chap. 54 of 62 and 63 Vict." The first of these acts is that incorporating the Great Falls Power Co., passed in 1902, and having power to build an electric railway from Winnipeg to Selkirk, and to the Winnipeg River, with such other branch line or lines in other directions outside Winnipeg, as may be decided upon by the directors, to any other point or points in the province outside of Winnipeg, provided that no line from Winnipeg to Selkirk be built during the currency of the charters of the Selkirk Electric Ry., and the Winnipeg, Selkirk, and Lake Winnipeg Ry., but this restriction is not to apply to any renewal of either of these charters. The latter of the acts referred to is the one passed in 1899 incorporating the Suburban Park Ry., with power to build an electric or steam railway from St. Boniface to St. Norbert, with a branch to Ste. Anne; to cross any bridge from St. Boniface to the boundary of Winnipeg; a line from St. Norbert to the boundary of Winnipeg, or to acquire running rights over any existing lines between these points, and a line in St. Boniface, and from there along the east side of Red River to Elm Park.

Guelph Radial Ry.—Application is being made to the Ontario Legislature to extend the time for the construction of the various lines authorized to be built, and to ratify an agreement with the People's Ry. with respect to the building of the lines of that company in Guelph.

A bylaw authorizing the extension of the line into St. Patrick's Ward was passed by the taxpayers Jan. 2. (April, 1910, pg. 311.)

Hamilton, Caledonia and Port Dover Ry.—The Ontario Legislature is being asked to incorporate a company with this title to build a system of electric railways from Hamilton to Port Dover, and through the townships of Ancaster, Barton, Glanford, Seneca, Oneida, Walpole, Townsend and Woodhouse, and serving the villages of Caledonia, Hagersville and Jarvis. G. Lynch-Staunton, Hamilton, is solicitor for applicants.

A press dispatch states that it is proposed to build a power house at Caledonia, where the projected line would cross the G.T.R.

The Hamilton and Caledonia Ry. Co. made surveys for a line from Hamilton to Caledonia in 1902, J. W. Tyrrel, of Hamilton, being in charge. In 1903 it obtained additional powers and changed its name to the Hamilton, Caledonia and Lake Erie Ry. Nothing further has been done, and the company is regarded as extinct.

Hamilton, Waterloo and Guelph Ry.—The Dominion Parliament is being asked to authorize the company to issue preference stock.

It was reported to the Hamilton city council Jan. 19, that the company had until Dec. 31, 1911, to build the projected line to Galt, and until Dec. 31, 1912, to extend it to Guelph. (Jan., pg. 71.)

Imperial Traction Co.—R. T. Harding, Stratford, Ont., representing the promoters of this company, was in London, Ont., Jan. 16, to explain the plans to the city council. The line is projected to start at Niagara Falls, and cover the whole of western Ontario, extending to Sarnia and Grand Bend, over 200 miles in all. Brantford, Sarnia and other corporations along the proposed route have been asked to endorse the project. The provisional directors include L. B. Howland, Toronto; R. Miller, Ingersoll, Ont.; G. M. Reid, London, Ont., and S. W. Nay, Listowel, Ont. (Jan., pg. 23.)

Lacombe and Blindman Valley Ry.—An extension of time was granted last session of the Alberta Legislature for the building of this projected electric railway from Lacombe along the valley of the Blindman River. (Dec., 1910, pg. 1069.)

Lacombe, Bullocksville and Alix Electric Ry.—The Alberta Legislature last session extended the time within which this projected electric railway may be constructed. (Dec., 1910, pg. 1069.)

Lake Erie and Northern Ry.—Application is being made to the Dominion Parliament to incorporate a company with this title to build a railway from Port Dover through Simcoe and Waterford to Brantford, northerly through in operation over it at an early date. (Jan., pg. 73.)

Montreal Street Ry.—The Quebec Legislature is being asked to amend the company's acts in various particulars, including increasing the number of directors. (Jan., pg. 73.)

Montreal Terminal Ry.—The Board of Railway Commissioners has extended the time within which the company may complete its spur across Victoria Ave., Montreal East. (May, 1909, pg. 367.)

Moose Jaw Electric Ry.—About 2.5 miles of track was laid upon this line during 1910. This mileage will be completed for operation during the summer, and additional track will be laid.

A writ has been issued against the

Paris to Galt, with a branch line from Paris or Glenmorris to Ayr, Ont. Brewster, Muirhead and Heyd, Brantford, Ont., are solicitors for the applicants.

W. P. Kellett, heretofore Chief Engineer Grand Valley Ry., Brantford, is acting as Chief Engineer, and in an interview Jan. 5, said the new line would be a standard steam line for electric use, with a maximum gradient of 1%, on which heavy electric locomotives would be used with regular trains of cars for freight traffic. The provisional directors named in the application are: W. S. Brewster, M.L.A.; J. Muir, W. D. Schultze, R. E. Ryerson, Brantford, and H. Douly, Simcoe, Ont.

Manitoba Radial Ry.—Application is being made to the Dominion Parliament to extend the time for the building of the line authorized by chap. 105 of the statutes of 1907, as amended by chap. 103 of the statutes of 1909. (July, 1909, pg. 523.)

Moncton Tramway, Electricity and Gas Co.—It is stated that the gas wells in Albert county have been so satisfactory to date that the company will be in a position to pipe a supply into Moncton, N.B., at an early date. Under the agreement with the city, the company has undertaken to build a system of street railways coincident with the introduction of natural gas for power and lighting purposes. The city council was notified Jan. 7 that it was expected to start construction Mar. 26. (Jan., pg. 73.)

Montreal and Southern Counties Ry.—The Board of Railway Commissioners has ordered the improvement of the condition of the right of way in Montreal South.

The electrifying of the Central Vermont Ry. branch to Chambly and Richelieu, recently taken over by the company, is approaching completion, and it is expected that a car service will be put

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city and the company by a citizen, with a view of getting the bylaw granting the franchise set aside, on the ground that it is ultra vires, and to obtain an injunction to restrain the company from proceeding with construction. (Jan., pg. 73.)

Nanaimo, B.C.—The proposition submitted to the taxpayers, Dec. 31, for a franchise for an electric railway in the town, was defeated by 329 votes to 236. (Dec., 1910, pg. 1067.)

The Niagara, St. Catharines and Toronto Ry.'s extension from Welland to Port Colborne, Ont., was reported completed Jan. 15. (Nov., 1910, pg. 965.)

North Midland Ry.—A bylaw authorizing the city to guarantee $200,000 of the company's bonds was passed by the taxpayers of London, Jan. 2. (Jan., pg. 73.)

Ottawa and Kingston Electric Ry.—Application is being made to the Dominion Parliament to incorporate a company with this title to build an electric railway from Toronto to Ottawa, via Brockville, Ont. Press reports state that construction will be started in May. (Jan., pg. 73.)

Ottawa and St. Lawrence Electric Ry.—We are informed that the representative of a very strong British construction company has recently gone over the line, and has been given an option on the charter, etc., which it is expected will be taken up, in a short time. The preliminary agreement provides for the starting of work during the present year.

A. H. N. Bruce, Chief Engineer of this line, is also acting as Chief Engineer of a company which is applying to the Dominion Parliament for a charter to build from Ottawa to Kingston and other points. We are advised that the project is likely to be linked up with the O. and K.E. Ry. (Jan., 1910, pg. 59. See also Ottawa and Kingston Electric Ry.)

People's Ry.—Application is being made to the Dominion Parliament to declare the company's works and undertakings to be for the general advantage of Canada, for power to extend the lines already authorized to be built in various directions; to increase the capital stock to $5,000,000; to extend the time for building the lines already authorized, and for other purposes. The additional lines for the construction of which authority is asked are: From Arthur to Flesherton, with branches to Meaford, Owen Sound and Collingwood; a line from Owen Sound, via Meaford and Collingwood, to Midland; from Woodstock, via London, Strathroy, Alvinston, and Petrolia to Sarnia; from Woodstock, via Norwich, Otterville, Waterford, and Simcoe, to Port Dover; from Waterford, via Hagersville and Caledonia to Hamilton; from Otterville to Tillsonburg, via Aylmer, and from St. Thomas to Port Stanley; from Stratford, via Mitchell, Seaforth and Clinton, to Goderich; from St. Thomas, via London, Lucan, Woodham, Kirkton, Mitchell, Monkton, Atwood, Listowel, Harriston and Mount Forest, connecting with another of the projected lines in Grey county; from Guelph to Hespeler and Puslinch Lake. The company also asks various powers as to elevators, water powers, etc. Pringle and Guthrie, Ottawa, are solicitors for applicants.

Bylaws granting franchises and authorizing the subscription to various amounts of the capital stock of the company were passed by the taxpayers of Fergus, Proton and Garafraxa, Jan. 2.

A Guelph, Ont., press report states that negotiations are in progress with a large construction company to undertake the building of the line. (Jan., pg. 73.)

Port Arthur and Fort William Electric Ry.—A bylaw has been passed by the citizens of Port Arthur, Ont., authorizing the removal of the street railway tracks from John St. to Bay St., at a cost of $10,000.

The Fort William city council is applying to the Ontario Legislature for various powers, including authority to issue debentures, without obtaining the previous consent of the ratepayers, for the purpose of raising the street railway's proportion of the cost of paving and macadamizing streets in the city. (Jan., pg. 73.)

Quebec and Island of Orleans Ry.—Application is being made to the Quebec Legislature to confirm the privileges already accorded and grant an extension of time for construction. It is also desired to have power to build the line on the mono-rail principal. P. Corriveau, Quebec, is secretary. (April, 1909, pg. 311.)

Quebec and Saguenay Ry.—Application is being made to the Quebec Legislature to extend the time for constructing the lines authorized by chap. 55 of the statutes of 1906, and the extensions subsequently authorized.

A London, Eng., dispatch, Jan. 5, stated that R. Forget had arranged with British capitalists to provide funds for starting construction on this projected line. (Jan., 1910, pg. 59.)

Quebec County Ry.—Application is being made to the Dominion Parliament to sanction a deed transferring to the Q.C. Ry. a certain portion of the lines of the Quebec Ry., Light and Power Co., which transfer has been approved by the shareholders of each company. (See Quebec Ry., Light and Power Co.)

Quebec Ry., Light and Power Co.—The Board of Railway Commissioners has authorized the building of a branch from Beauport station northwesterly to Montmorency village, Que.

An agreement has been reached with the Quebec city council, by which the line will be extended to Lesage Ave. by May 15, and the work done on Plamondon St. by June 1.

The company's hotel, Kent House, Montmorency, was recently reopened after being enlarged and redecorated. (Dec., 1910, pg. 1067.)

Simcoe Ry. and Power Co.—Application is being made for the approval of the Governor-in-council of the plan and site of the company's high tension transmission line across Matchedash Bay, at Waubaushene, Ont., the plans of which have been deposited in the registry office at Barrie, Ont., and in the offices of the Georgian Bay Lumber Co., Waubaushene, Ont. (Sept., 1910, pg. 783.)

Timiskaming, Ont. — The Dominion Government is asking Parliament to vote $50,000 towards the erection of a bridge to connect the provinces of Ontario and Quebec, near Timiskaming, Ont. A proposal to have the bridge sufficiently strengthened so as to enable an electric railway to be operated over it has been made. Such a line would connect up Cobalt, Haileybury and other Ontario towns with Ville Marie, Que.

St. John Ry.—We are advised that the St. John, N.B., city council is being asked to grant the company permission to extend its car lines from the foot of Brussels St., to Loch Lomond Road, about 0.6 of a mile, and the township municipality is being asked to grant permission for the extension of this line along the Loch Lomond road to the cemetery by the back road, 0.4 mile, and from the Loch Lomond road along the Crouchville road to the Old Loch Lomond road, 1.6 miles. It is only proposed to build the first two lines and 0.6 of a mile of the last mentioned line during the current year. (June, 1910, pg. 497.)

Toronto.—The Toronto city council is applying to the Ontario Legislature for confirmation of certain bylaws and also for the following powers: Confirming and validating the notice given to the Toronto and York Radial Ry. of the intention of the corporation to acquire that portion of its line running from Sunnyside to Long Branch Park; declaring that the corporation may acquire the line under the provisions contained in the agreement, dated Dec. 23, 1890, made with the old Toronto and Mimico Ry., and under the provisions of the Railway Act of 1887, notwithstanding the repeal of that act; authorizing the acquiring of the line as from Dec. 23, 1911, under certain conditions, and authorizing the raising of money by debentures to purchase the line. It is also desired to have authority to extend the line easterly along the Lake Shore Road and Queen St., so as to connect with the Toronto Ry., and to be enabled to make agreements with the Toronto Ry. for the interchange of cars and traffic, and for running rights over the Toronto Ry. to St. Lawrence Market or other points in the city.

The taxpayers, Jan. 2, by 14,592 votes to 4,758, authorized the council to raise $1,157,293 by debentures for street railway construction in the city. Several notices of motion have been made at meetings of the council subsequently held, but nothing further has been done.

Toronto and York Radial Ry.—Application is being made to the Ontario Legislature to authorize the company to build lines and branches between its present termini in different parts of the city of Toronto, to which it is at present authorized to build, and for power to build additional lines as follows: From the Toronto and Scarboro Division to Markham; from Sutton, on the Metropolitan Division, to Pefferlaw.

The new bridge over Mimico creek on the Lake Shore road has been completed. The building of the bridge, which is on a private right of way, has enabled the company to cut out some curves on this section of the line.

A private right of way is being acquired for a section of the Metropolitan Division, at Woodlawn Ave., Toronto. (Dec., 1910, pg. 1069.)

Toronto Interurban Ry.—Application is being made to the Ontario Legislature to incorporate a company with this title to build a line from Toronto to Barrie, Ont. Ritchie, Ludwig and Ballantine, Toronto, are solicitors for applicants.

Toronto Ry.—The city engineer has recommended the city council to call upon the company to lay a double track line on Danforth Ave., from Broadview to Greenwood Ave., and on Greenwood Ave., from Gerrard St. to Danforth Ave. (Oct., 1910, pg. 877.)

Toronto Suburban Ry.—The Ontario Legislature is being asked to authorize the company to extend its line from some point on its authorized line to Guelph, to Milton, and to extend its Guelph line to Berlin, Preston, Hespeler, Galt and Hamilton; to increase its capital stock, to issue bonds for terminals, and to extend the time for the construction of the previously authorized lines. (Aug., 1909, pg. 609.)

Winnipeg Electric Ry.—The track mileage of the lines in Winnipeg was increased during 1910 by 5.44 miles.

A new power house is to be erected at a cost of about $500,000 at the foot of Mill St., for the purpose of generating power by steam, for distribution in the city. This announcement has been made as a result of the recent decision of the courts as to the rights of the company to distribute power from Lac du Bonnet in the city. Leave has been granted to carry the case to the Imperial Privy Council, as neither the company nor the city is satisfied with the decision of the Court of Appeal. (Nov., 1910, pg. 965.)

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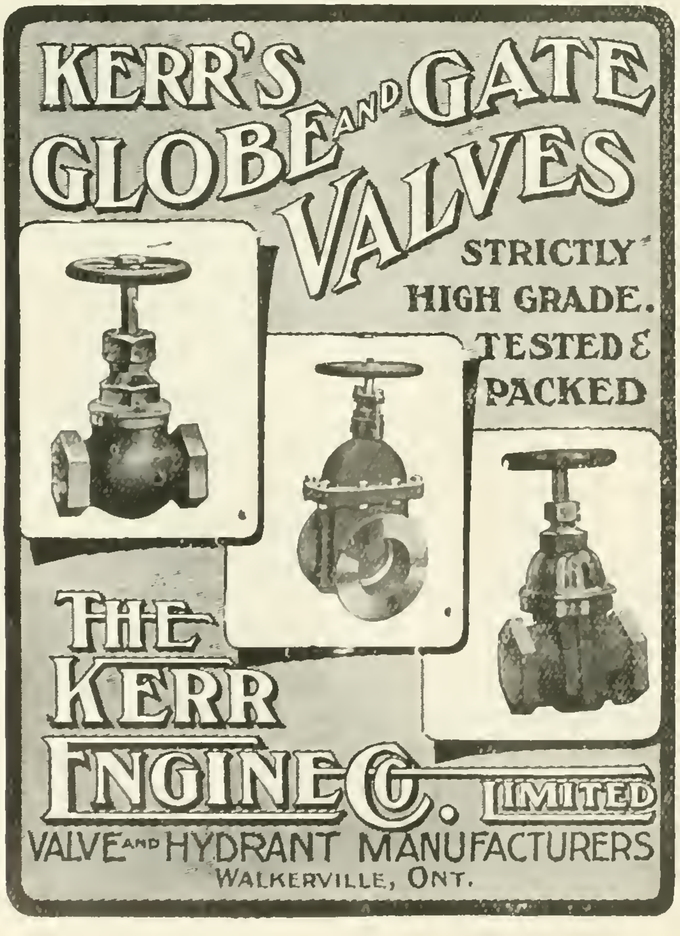

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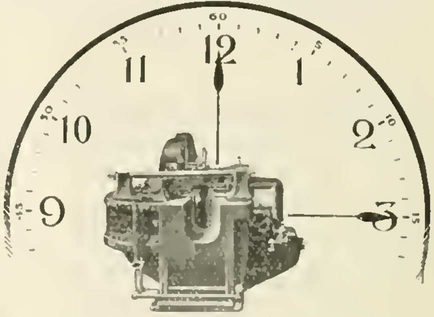

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THOS. C. IRVING.

Gen. Man. Western Canada, Toronto.

Electric Railway Notes.

H. C. Johnson has been elected President of the Toronto Ry. Employes Union for the current year.

The Winnipeg Electric Ry. has issued orders forbidding conductors and motormen to wear "union" buttons while on duty.

W. P. Kellett has resigned his position as General Manager Grand Valley Ry. to become Chief Engineer of a proposed electric line, to be called the Lake Erie and Northern Ry.

W. Rae, Inspector of Tramways for British Columbia, has ordered the Nelson St. Ry. to equip its cars with air brakes, and to purchase an additional car.

The Toronto and York Radial Ry. is applying to the Ontario Legislature to authorize it, among other things, to run its cars on Sundays to and from any city of more than 50,000 inhabitants.

E. Daganais, R. Fournier and R. Blake, clerks in the Montreal St. Ry. offices, were charged, Jan. 11, with conspiracy to defraud the company by tampering with conductors' fare boxes. The two first pleaded guilty and the third, not guilty.

The British Columbia Electric Ry. commenced a mail service, by arrangement with the postal authorities, between New Westminster and Chilliwack, Jan. 11. No arrangement has as yet been made as regards mail matter for intermediate points.

The Quebec Ry., Light and Power Co. is reported to be in the market for eight pay-as-you-enter double truck steel motor cars, eight double truck trailer cars, 10 single ended open car bodies, and 25 box cars, including trucks.

The Winnipeg city council is to consider a bylaw requiring the Winnipeg Electric Ry. to operate an all night service and a full service on Sundays. It is also considering a proposal to build a tunnel route across the city in order to relieve the congestion of traffic on the city lines.

The Montreal board of control has adopted a recommendation of the legislation committee, that in all streets on which a street car line exists, the company or individual exploiting these tramways, shall pay one-third of the cost of the pavement of the street, and shall maintain the pavement during its franchise.

A statement purporting to emanate from the city hall, Montreal, claims that the Montreal St. Ry. is indebted to the city to the extent of $70,000, its share of the cost of snow removal, which it refuses to pay, as the city did not handle the work in a businesslike manner, and that in consequence much money was wasted.

A deputation of labor men from various parts of the province waited upon the Premier of Quebec, at Quebec, Jan. 20, and referred, among other things, to the use of running boards and air brakes on street cars. In reply, the Premier said that the question of the abolition of running boards from street cars was one that might be referred to the Public Utilities Commission, as the one relating to the use of air brakes had already been.

The last distribution of profits to the employes of the British Columbia Electric Ry., under the plan adopted in 1902, by which one-third of the net profits, after paying 4% dividend on the common stock, was set aside for division among the employes, has been made, when cheques for $57.31 were handed out to those of the employes entitled to them. The plan was abandoned at the men's initiation, as they preferred an increase of pay to a share in the profits.

A point of law was raised in Montreal, Jan. 11, in a claim for the death of a child through being knocked down by a Montreal St. Ry. car. After proving the death of the child, the case was rested on the claim that the onus lay with the company to prove that it was not liable, a precedent being cited in the case of Doucet against the Shawinigan Falls Co., when the judge stated that there was a presumption against the owners of a thing which caused an accident, that it was their fault. Judgment was reserved on the point raised.

The new rules, drawn up by the British Columbia Government, for the regulation of interurban tramways, went into effect Jan. 1. They deal with train rules, time tables, signals, the movement of trains by time table or train order, dispatching system and train order forms, train rules for both double and single track, standardization of time, limitation of running time and all varying conditions of track, grade, etc.; automatic block system, station protecting signals, flag stop signals, interlocking signals, etc. A penalty of $100 fine or three months imprisonment attaches to each violation of a rule. The rules for the operation of electric lines in cities are under consideration, and it is expected they will be put in force shortly.

Telegraph and Cable Matters

The Maritime Telegraph and Telephone Co. paid its second quarterly dividend of 1½%, Jan. 3.

The Canadian Northern Telegraph Co. is extending its office accommodation at Brandon, Man., owing to its largely increased business.

S. S. Dickenson, General Superintendent Commercial Cable Co., New York, who died there recently, was for some years Superintendent at Hazel Hill, N.S.

A. Harris has been appointed Telephone Inspector C.P.R. Telegraphs Manitoba Division, Winnipeg, vice W. R. Jones, transferred to the British Columbia Division.

The Dominion Government wireless telegraph station at Ikeda Head, Queen Charlotte Islands, B.C., has been completed, and one at Lone Tree Point is under construction.

The Western Union Telegraph Co. has completed the erection of a copper wire between Halifax and North Sydney, N.S., and an additional no. 8 iron wire between North Sydney and Glace Bay.

F. E. Camp, heretofore Telephone Inspector C.P.R. Telegraphs, Revelstoke, B.C., has been appointed Inspector of Telegraphs there, covering the main line, Field to Kamloops, and Kootenay lines.

W. R. Jones, heretofore Telephone Inspector C.P.R. Telegraphs Manitoba Division, Winnipeg, has been appointed Telephone Inspector British Columbia Division, with headquarters at Revelstoke, vice F. E. Camp.

The Commercial Cable Co. has extended its ocean mail services, which have been adopted in New York, to St. John and Halifax. By this means the public can, up to the last moment, connect with the outgoing mail.

The Board of Railway Commissioners has approved the forms used in transmitting messages by the C.P.R., White Pass and Yukon Route, Great North Western, Canadian Northern, North American, Western Union, Marconi Wireless and G.T.P. Telegraph Cos. for four months from Jan. 9, or until further order.

A board of conciliation, consisting of Judge Barron, Stratford, Ont., chairman; J. H. Gillman, Brockville, Ont., representing the Government Railways Managing Board, and J. G. O'Donoghue, Toronto, on behalf of the men, has been appointed to enquire into alleged grievances of I.C.R. train dispatchers and telegraph operators.

The Commercial Cable Co. has declined the proposal of the city of St. John's, Nfld., regarding a location within the city limits, on account of the refusal to exempt the company from a special tax. The company is prohibited from doing business in the island by its contract with the Government, and proposed to establish a city office connected with its cables for the Government convenience.

The Western Union Telegraph Co., by the acquisition of control of the Anglo-American Cable Co., will take over the Prince Edward Island telegraph service, and also part of the Newfoundland service, which will be added to the district having its headquarters at St. John, N.B. Press reports state that a number of new lines will be erected in New Brunswick.

It is reported that the British Postmaster General has accepted the cable companies' proposal in connection with a half-rate arrangement for deferred messages. It is stated that the arrangement will not come into force for some time, as the British Government will have to obtain the consent of other cable companies and some of the European Governments.

The number of wireless telegraph stations along the coasts of Canada is 24. Of these, 15 are on the Atlantic coast and along the Gulf of St. Lawrence, the former being operated, under arrangement, by the Marconi Wireless Telegraph Co. Those on the Pacific coast, which have been in full operation since last June, dealt with 18,469 messages in four months from that date.

Alien Captains on Inland Steamboats.

The recent decision of the U. S. Government to enforce the regulation requiring that all masters of U. S. steamboats must reside in the United States, has been followed by the refusal of licenses to a number of captains living in Canada in the winter, on the ground that they are not U. S. citizens. Press reports state that the general question will probably be taken up by the Minister of Marine, and that it will form the basis of some negotiations respecting the status of mariners in Canada and the U. S. in this regard.

The Canada Shipping Act, 1910, cap. 113, sec. 75, reads: "Examinations may be instituted in Canada for British subjects or for persons domiciled in Canada for at least three years, who intend to become masters or mates of ships trading on the inland waters of Canada, or on the minor waters of Canada, or on coasting voyages, or who wish to procure certificates of competency or service. Foreign subjects serving in ships registered in Canada and trading on the inland waters of Canada, or on the minor waters of Canada, or on coasting voyages, shall be deemed to be domiciled in Canada while so serving."

In 1908 an amendment was made to the foregoing section, by the addition of the following clause: "The Minister may refuse to admit to the examinations mentioned in the two preceeding sections any person domiciled in Canada who is a subject or citizen of a country in which British subjects do not enjoy similar privileges in respect to such examinations."

The foregoing extracts from the Revised Statutes of Canada indicate that the Minister of Marine has power to reciprocate in similar cases where masters of Canadian vessels, not being Canadian citizens, are concerned.

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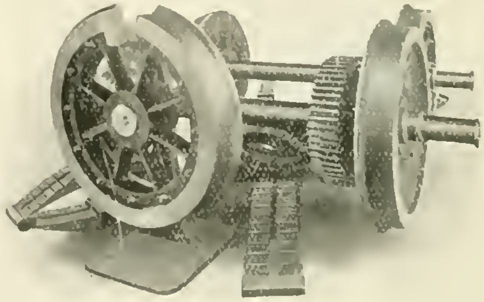

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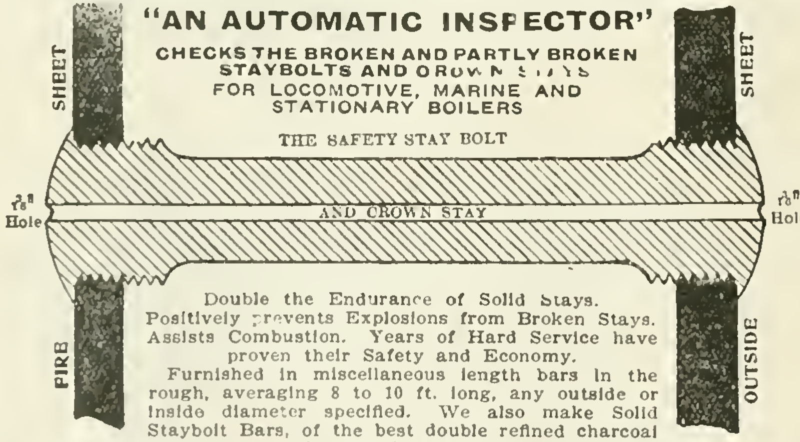

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ATLANTIC TRANSPORT LINE
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WHITE STAR DOMINION LINE
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Montreal to Avonmouth Docks
(Bristol and Antwerp)

LEYLAND LINE
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Great Lakes and St. Lawrence River Rate Committee.

CHAIRMAN, E. E. Horsey, Kingston, Ont.
SECRETARY, Jas. Morrison, Montreal.

International Water Lines Passenger Association.

PRESIDENT, W. M. Lowrie, New York.
SECRETARY, M. R. Nelson, New York.

The Shipping Federation of Canada.

PRESIDENT, A. A. Allan, Montreal; MANAGER AND SECRETARY, T. Robb, 526 Board of Trade, Montreal.

Ship Masters' Association of Canada.

GRAND MASTER, Capt. J. H. McMaugh, Toronto, Ont.; GRAND SECRETARY-TREASURER, Capt. H. O. Jackson, 376 Huron St., Toronto.

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St. Lawrence & Chicago Steam Navigation Co.

The following report was presented at the annual meeting in Toronto, Jan. 20:

The season of 1910 has been one of the worst in the history of lake commerce. The high rates on iron ore and the marvellous growth in lake traffic for the past few years has stimulated the building of lake vessels, until their number and carrying capacity is considerably in excess of the present needs of commerce. Rates have, therefore, ruled very low for the entire season, grain having been carried in Oct. from the head of the lakes to Buffalo at ⅞ and ¾ of a cent per bushel, equivalent to a rate of about 10c per ton on coal. In addition to the low rates the low depth of water at Sault Ste. Marie reduced the carrying capacity of our three largest steamers nearly 10%, while the cost of fuel and provisions has increased materially. Our boats have had no serious accidents during the season.

The question of the cost of marine insurance on lake veessels has become a very serious one, the rates having been advanced by the underwriters in 1909 about 20% over 1908, and again advanced about 20% in 1910 over the high rates of 1909, until this item amounted in 1910 to a charge against our boats of 7% on the capital stock. Your directors realizing the importance of this matter in view of the excessive competition among lake vessels, decided in 1909 to try the experiment of carrying 25% of the risk against stranding and collision, while insuring full against total loss, with the result that we have $13,802.30 still at credit of contingent fund out of a total of $20,483.46 charged to the boats in two years, after charging the fund with its proper share of all accidents for that time. A resolution will be submitted to you by which you will be asked to authorize your directors to operate the steamers without insurance until the underwriters offer a reasonable rate and policies of insurance which will protect us. as the present form of policy is faulty and virtually enables the underwriters to repudiate many just claims if they see fit, besides charging against the vessel $500 on every accident, which shuts out small damage claims.

The lengthening of the steamer G. R. Crowe was successfully accomplished last winter, and she has given very satisfactory service.

The directors from the earnings of the season have paid a dividend of 3% on the capital stock, and, after providing for same, have carried forward $3,035.61 to the credit of profit and loss, making a balance at the credit of that account of $136,042.89.

PROFIT AND LOSS.

Balance forward, Jan. 2, 1910		$133,007.28
Steamships' earnings	$42,760.86	
Interest	69.20	
		42,830.06
		$175,837.34
Salaries, taxes, office rent, directors and auditors' fees, etc.		$ 13,994.45
Dividend 3%, payable Jan.. 3, 1911		25,800.00
Balance carried forward		136,042.89
		$175,837.34

Assets.

Five steamers: Algonquin, Iroquois, W. D. Matthews, G. R. Crowe, E. B. Osler	$1,000,000.00
Insurance unexpired	13,000.00
	$1,013,000.00

Liabilities.

Capital	$ 860,000.00
Accounts payable	92.00
Contingent fund	13,802.30
Dominion Bank	3,062.81
Balance of profit and loss carried forward	136,042.89
	$1,013,000.00

The report was unanimously adopted, as well as the following resolution:—"In view of the present excessive rates charged by the underwriters and the unsatisfactory form of policy of insurance given, and with the experience of the past two seasons, when the total of all accidents to the company's steamers is less than $32,000, against premiums paid of over $110,000, the shareholders believe the company should, and hereby authorize the directors to operate the steamers without insurance until, in their opinion, the underwriters grant reasonable rates and a satisfactory form of policy to cover the steamers, either in whole or part."

The directors who were re-elected for the current year are:—President, W. D. Matthews; Vice President and Secretary, J. H. G. Hagarty; Managing Director, A. A. Wright; other directors, Jas. Carruthers, Capt. S. Crangle, G. R. Crowe. C. S. Gzowski, E. B. Osler, M..P.

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Vessels Removed from the Register.

The following vessels were removed from the register, during Nov. 1910, for the reasons assigned, Steam, Argosy, Lunenburg, N.S., 84 tons, stranded; Aurora, St. Andrews, N.B., 183 tons, broken up; Cecebe, Toronto, 8 tons, broken up; Chicoutimi, Toronto, 70 tons, out of existence: City of Stratford, Toronto, 3 tons, out of existence; Clara, Toronto, 8 tons, broken up; Curlew, Toronto, 3 tons, dismantled; Devenish, Toronto, 2 tons, no information obtainable; Douglas, Toronto, 4 tons, no information obtainable; Edith, Toronto, 1 ton, no information obtainable; Erastus Wiman, Toronto, 36 tons, burnt; Florence, Toronto, 2 tons, broken up; General Wolseley, Toronto, 70 tons, broken up; H. L. Lovering, Toronto, 38 tons, out of existence; Huron, Toronto, 56 tons, broken up; Hygeia, Toronto, 1 ton, no information obtainable; Inter Ocean, Toronto, 98 tons, broken up; Jubilee, Toronto 2 tons, out of existence; Lake Joseph, Toronto, 19 tons, broken up; Mabel, Toronto, 8 tons, dismantled; Maggie Mason, Toronto, 38 tons, wrecked; Minden, Toronto, 3 tons, broken up; Minnie Wade, Toronto, 6 tons, no information obtainable; Pochahantos, Toronto, 20 tons, out of existence: Queen, Toronto, 5 tons, no information obtainable; Ripple, Kingston, Ont., 10 tons, wrecked; Sarama, Toronto, 1 ton, out of existence; Sea Flower, Toronto, 5 tons, no information obtainable; Silver Wing, Toronto, 2 tons, no information obtainable; Startled Fawn, Toronto, 17 tons, no information obtainable; Stella, Toronto, 5 tons, broken up; Sutton Belle, Toronto, 4 tons, dismantled; Toronto Belle, Toronto, 12 tons, no information obtainable; Undine, Toronto, 15 tons, no information obtainable; Viola, Toronto, 46 tons broken up; Vivid, Toronto, 35 tons, no information obtainable; Zephyr, Toronto, 11 tons, wrecked. Sailing, A. E. Moore, Digby, N.S., 11 tons, broken up; Alouette, Chatham, N.B., 10 tons, broken up; Bruin, Toronto, 104 tons, out of existence; Coral Leaf, Parrsboro, N.S., 374 tons, transferred to West Indies; Coronet, Toronto, 24 tons, no information obtainable: Cygnet, Toronto, 27 tons, broken up; Cyprus. Toronto, 6 tons. no information obtainable; Davidson, Ottawa, 150 tons, broken up; Estelle, Yarmouth, N.S., 15 tons, burnt; F. J. Boswell, Ottawa, 153 tons, broken up; Garfield White, Parrsboro, N.S., 99 tons, sunk; Harry, Ottawa, 166 tons, broken up; Ingonish, Sydney, N.S., 16 tons, transferred to Newfoundland; J. B. Blanchard, Ottawa, 150 tons, broken up; James, Ottawa, 153 tons, broken up; James Cunningham, Ottawa, 176 tons, broken up; John M. Plummer, Halifax, N.S., 83 tons, wrecked; Janett, Halifax, N.S., 32 tons, wrecked; Levi Crannell, Ottawa, 157 tons, broken up; Lithophone, Toronto, 14 tons, out of existence; Maggie, Maitland, N.S., 35 tons, wrecked; Margaret Leonard, Digby, N.S., 37 tons, foundered: Merle, Toronto, 11 tons, sold to foreigners; Mildred M. Bell, Lunenburg, N.S., 54 tons, transferred to Newfoundland: Mink, Toronto, 19 tons, out of existence; Minnie. Toronto, 63 tons, out of existence; R. S. McKenzie. Ottawa, 154 tons, broken up; Rockland, Ottawa, 136 tons, broken up; Stella, Toronto, 5 tons, broken up, and the following were removed during Dec., 1910:—Steam, Acadia, Ottawa, 354 tons, broken up; Beatrice B., Ottawa, 43 tons, dismantled; Bismarck, St. John, N.B., 10 ton, broken up; Clyde, Ottawa, 26 tons, dismantled; Conqueror, Toronto, 17 tons, out of existence; Crusader, Ottawa, 2 tons, wrecked 20 years ago; Cuba, Hamilton, Ont., 599, converted into a sailing vessel; Despatch, Goderich, Ont., 22 tons, broken up; Favorite, Toronto, 24 tons, out of existence; Flora, Ottawa, 4 tons, broken up; G. H. Notter, Ottawa, 9 tons. burnt; Gypsie, Peterboro, Ont., 2 tons, broken up; Helena, Toronto, 9 tons, out of existence; Hubert Larkin, Quebec, 33 tons, broken up; Ida, Ottawa, 6 tons. broken up; Kate Murray, Toronto, 2 tons, out of existence; Kenneth, Brockville, Ont., 2 tons, broken up; Ladas, Toronto, 37 tons, out of existence; Lizzie, Ottawa, 8 tons, broken up; Naiad, Ottawa, 6 tons, burnt; Northern Light, Ottawa, 267 tons, broken up; Onaniche, Ottawa, 1 ton, burnt; Pierreville, Sorel, Que., 76 tons, wrecked; Pilot, Toronto, 48 tons, burnt; Ptarmigan, New Westminster, B.C., 155 tons, broken up; Wanda, Kingston, Ont., 4

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tons, dismantled. Sailing:—Alphonse Pierre, Quebec, 29 tons, out of existence; Argentina, Chatham, N.B., 12 tons, broken up; Charming Lass, Charlottetown, P.E.I., 67 tons, wrecked; Conductor, Windsor, N.S., 1,063 tons, sold to Brazilians; Dawn, Chatham, N.B., 12 tons, broken up; Emaroy, Ottawa, 79 tons, out of existence; Emery Bailey, Windsor, Ont., 47 tons, wrecked; Emile, Quebec, 55 tons, out of existence; Frank Russell, Toronto, 283 tons, out of existence; Genser, Quebec, 44 tons, out of existence; Gertie, Windsor, N.S., 45 tons, sunk; George Manly, Toronto, 284 tons, out of existence; Hiram, Ottawa, 134 tons, broken up; Hiram Benson, Toronto, 275 tons, out of existence; Humming Bird, Halifax, N.S., 17 tons, supposed to have been lost; John Cuzner, Ottawa, 46 tons, broken up; John Loughrin, Ottawa, 36 tons, broken up; Midnight, Halifax, N.S., 66 tons, sunk in collision; Omega, Windsor, N.S., 199 tons, wrecked; Phillippe, Ottawa, 154 tons, broken up; Preference, Windsor, N.S., 243 tons, abandoned at sea; Rover, Ottawa, 74 tons, broken up; Rupert, Lunenburg, N.S., 78 tons, transferred to Newfoundland; Sea Nymph, Halifax, N.S., 77 tons, wrecked; Shepherd Boy, Ottawa, 62 tons, reported sunk; Sir Hector, Kingston, Ont., 183 tons, broken up; Violet, Halifax, N.S., 12 tons, broken up.

Montcalm-Kron Prinz Olaf Collision.

The following judgment was recently delivered by Capt. L. A. Demers, Wreck Commissioners, and concurred in by A. Reid, Port Warden and Surveyor to Lloyds' Register, Montreal, as Assessor, in the case of the collision of the Government s.s Montcalm, and the s.s. Kron Prinz Olaf, near Channel Patch in the St. Lawrence River, Sept. 24, 1910:

The Court having carefully weighed the testimony adduced finds that L. Thivierge, pilot in charge of the Kron Prince Olaf, displayed a gross lack of knowledge of the recognized laws of navigation of the channel and is guilty of culpable errors of judgment by coming in contravention with the afore enumerated articles of the rule of the road, and in consequence the Court hereby condemns him to a fine of $200, payable in four monthly payments. The Court further holds that P. A. Nelson, master of the Kron Prince Olaf, deserves censure for his failure to be in readiness on deck to advise his officers while navigating in narrow water, and also that M. Toftdahl, mate of the Kron Prinz Olaf, showed gross lack of judgment and of good seamanship both before and at the time of collision, and as both master and mate, are possessors of Norwegian certificates with which this Court has no jurisdiction to deal, it is hereby suggested that their conduct be reported to the Norwegian Board of Trade as being deficient in the proper management of their vessel. Regarding the movements of the Montcalm, the Court accepts them as proper from when the Kron Prinz Olaf's lights were first observed up till the moment the latter vessel sounded the two blast signal for a second time, from which juncture the Court holds that Pilot A. Lachance in charge of the Montcalm was guilty of an error of judgment by failing to stop and go full speed astern. No pilot, master or officer in charge of the bridge must take for granted that a certain action or movement may be performed by another vessel, but must at once himself adopt such measures as will eliminate elements of doubt and apprehension, but as the aforementioned error of judgment of which A. Lachance is guilty is not of a culpable nature, the Court desires to admonish him to be more careful in the future. A word of warning is also given the Master, who must bear in mind that the presence of a pilot on a bridge does not relieve him of his responsibilities as Master and that in the event of the pilot performing an action or issuing an order contrary to good judgment, it is his duty to interfere and assert his authority.

LIST OF STEAM VESSELS REGISTERED IN CANADA DURING DECEMBER, 1910.

Name	No.	Where and When Built.	Engines, etc.	Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
B. & M. LeBlanc..	126,805	Tusket Wedge, N S., 1910..	Screw 8 n. h. p..	51.0	14 6	7.0	33	12	Yarmouth, N.S.......	H. A. LeBlanc, M.O., Tusket Wedge, N.S.
Buaney . ..	130,354	St. Peters, N.S., 1910.......	" 12 "	43.8	12.4	5.4	14	13	Arichat, N.S...	Stewart Fish Co., St. Peters, N.S.
Colomb.......	126,926	Lauzon, Que., 1910.	" 128 " ..	120.6	34 0	15.5	559	338	Quebec, Que.........	Levis Ferry, Ltd., Levis, Que.
Coocoocache..	130,399	Grand Piles, Que., 1910.....	" ½ " ..	23.6	4.6	2.3	1	1	Montreal	J. A. LaFontaine, Grand Piles, Que.
Delbert D ...	126,806	Meteghan River, N.S., 1910	" 14 " ..	61.0	15 3	7.6	44	16	Yarmouth, N.S	P. L. LeBlanc, M.O., Tusket Wedge, N.S.
H.C.M., No. 1	130,406	Montreal, Que., 1868.	" 7 " ..	84.0	24.0	8.2	135	72	Montreal	Harbor Commissioners of Montreal.
H.C.M., No. 2	130,407	" " 1864	" 7 " ..	86.5	24.8	8.8	177	107	"	" " "
H C.M., No. 6	130,408	" " 1873	" 6 " ..	84.0	24.0	7.7	168	102	"	" " "
H.C.M., No. 7	130,409	" " 1872	" 5 " ..	83.5	23.8	8.0	173	108	"	" " "
H.C.M., No. 9	130,410	" " 1873	" 6 " ..	84.0	24.0	7.7	170	105	"	" " "
H.C.M., No. 10 .	130,411	" " 1875	" 6 " ..	92.0	25.0	8.5	172	117	"	" " "
H.C.M. No 14...	130,412	" " 1881	" 6 " ..	86.2	25.8	9.1	190	119	"	" " "
H.C.M., No. 15...	130,413	" " 1899	" 8 " ..	85.5	27.6	7.7	205	125	"	" " "
H.C.M.. No. 16..	130,414	" " 1899	" 8 " ..	85.5	27.6	7.7	205	125	"	" " "
H.C.M.. No. 17. ..	130,415	" " 1904 ...	" 8 " .	84.5	27.5	8.4	210	129	"	" " "
H.C.M., No. 18..	130,416	" " 1904	" 8 " ..	84 5	27.5	8.4	210	129	"	
Hitaka	126,795	Steveston, B.C., 1910.	" 24 " ..	37.6	8.8	3 9	10	7	New Westminster, B.C	Y Nakanichi, Steveston, B.C.
Hydah	126,615	Skidegate, B.C., 1910.......	" 2 " ..	33.1	9.8	3.7	8	6	Prince Rupert, B.C.	I. Wilson, Skidegate, B. C.
Kawasemi ..	126,794	Steveston, B.C., 1910.....	" 24 " ..	39.0	8.8	4.5	11	8	New Westminster, B.C	S. Yoshida, Steveston, B.C.
Laura M. Levy . ..	126,819	Tancook, N.S., 1909	" 3 " ..	40.2	10.6	5.6	12	11	Lunenburg, N.S.. ..	M. Levy, Lunenburg, N.S.
Lula May ...	130,232	Collingwood, Ont., 1910 ..	" 4 " ..	66.4	14.	6.5	34	23	Port Stanley, Ont. ..	A. Graham and D.A. Paterson, J.O., Port Stanley, Ont.
Navy Isle ...	122,600	Deer Island, N. B., 1910....	" 12 " ..	34.2	9.2	4.2	9	6	St. Andrews, N.B.....	E. H. Carson, St. Andrews, N.B.
Plessis	126,925	Lauzon, Que., 1910.........	" 128 " ..	120.6	34.0	15.5	559	338	Quebec, Que..........	Levis Ferry, Ltd., Levis, Que.
Princess Adelaide .	126,948	Govan, Scotland, 1910.	" 13 " ..	290.5	46.1	15.0	3061	1910	Victoria, B.C.........	C. P. R. Co., Montreal.
Yeldah......	112,193	Chatham, Ont., 1901, 1905..	Paddle 2 " .	63 0	17.3	4.0	42	26	Chatham, Ont.	J. Hadley, Chatham, Ont.

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA DURING, DECEMBER, 1910.

Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners
Bertha M.	100,437	Shemogue, N.B., 1910	Schr.	43.0	13.3	4.1	13	Moncton, N.B..	R. Wells, Anderson, N.B.
Cadeco No. 2 ...	130,400	Longue Point, Que., 1910	Scow	104.5	28.6	9.3	251	Montreal.............	Canadian General Development Co., Montreal
Cadeco No. 3 ...	130,401	" " " "	"	105.0	28.6	9.3	252	"	" " " " "
Cadeco No. 4	130,402	" " " "	"	105.0	28 6	9.3	252	"	" " " " "
Calceolaria	126,910	Bay St. George, Nfld., 1909...	Schr.	60.0	17.0	6.6	30	Halifax, N.S. .. .	S. Swyer, Bay St. George, Nfld.
*Cuba	71,153	Kingston, Ont., 1875	Barge	168.7	25.6	11.0	386	Montreal.	A. Labrecque, Lanoraie, Que.
David Evans.	126,947	Marshfield, Ore, 1901.	Schr.	200.4	40.0	15.3	748	Victoria, B.C..... .	E. H. Hunter, Kobe, Japan
Dombrico No. 3 .	130,397	Lachine, Que., 1910	Scow	100.0	37.6	6.0	183	Montreal	Dominion Barging Co., Lachine, Que.
Dombrico No. 4	130,398	" " "	"	100.0	37.6	6.0	183	"	" " " "
Edna H	126,911	Tancook, N.S., 1910..........	Schr.	47.0	12.9	6.2	17	Halifax, N.S.	M. Harrie, Terrance Bay, N.S.
The Foundation Co., No. 1.. ..	130,403	Lachine, Que., 1910	Scow	62.0	26.0	4.8	65	"	Foundation Co., Montreal
The Foundation Co., No 2......	130,404	" " "	"	62.4	25.8	4.9	63	"	" " "
The Foundation Co., No. 3	130,405	" " "	"	79.0	25.7	5.0	84	Montreal	" " "
Minnie Davis ...	130,421	Bristol, Me., 1876	Schr.	28.2	16.4	6.2	23	St. Andrews, N.B. ...	S. Brown, Campobello, N.B.
O.C.	126,924	Chateau Richer, Que., 1907 ..	"	70.4	22.4	6.8	54	Quebec, Que.	O. Caron, Jr., Chateau Richer, Que.
Shrubb	130,344	Richibucto, N.B., 1910	"	34.0	9.4	4.0	10	Chatham, N.B.	W. G. Mills, Hardwick, N.B.
Viola G. Hartlin..	126,912	Jeddore, N.S , 1910	"	51.0	16.0	6.8	25	Halifax, N.S.	P. Hartlin, M.O., Jeddore, N.S.
William C. Smith	126,818	Lunenburg, N.S., 1910	"	104.8	26 0	10.6	99	Lunenburg, N.S......	W. C. Smith, M.O., Lunenburg, N.S.

* Formerly a sailing vessel

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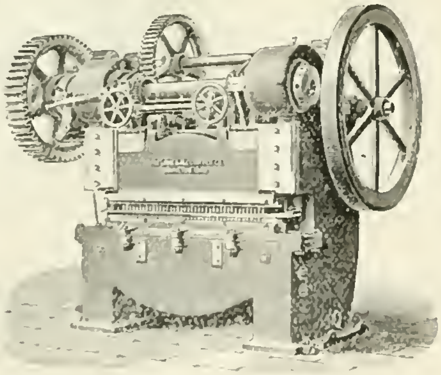

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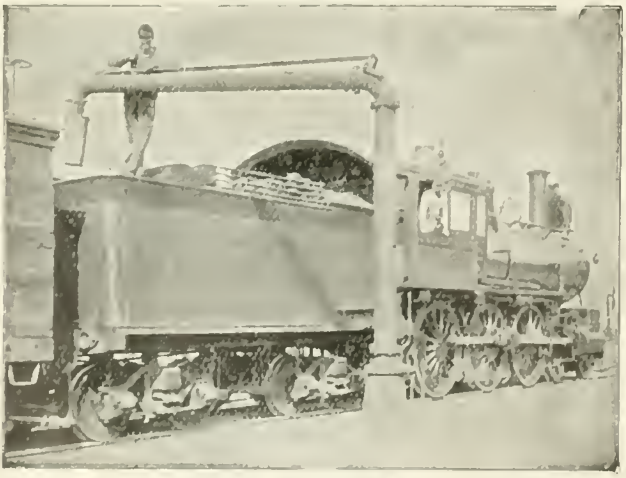

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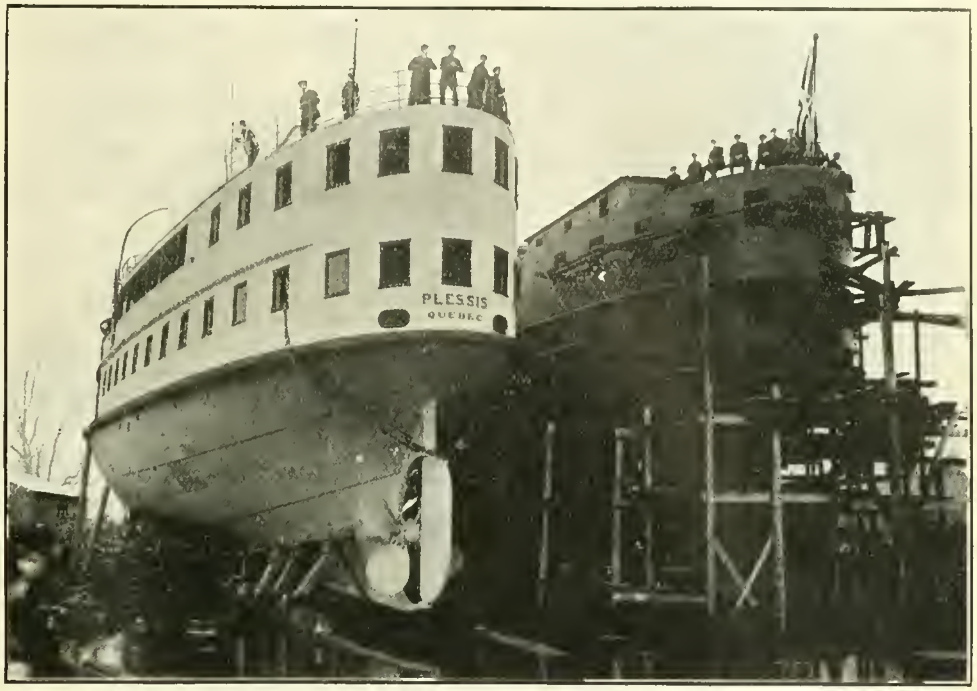
The Levis Ferry Limited.

This company has four boats for the ferry service between Levis and Quebec City, all of which were built by G. T. Davie & Sons, at their Levis yard, within 10 months. Work on the two summer boats, Lauzon and Levis, was begun in Jan., 1910, and they were running May 1. They are 150 ft. long and 27 ft. beam, their engines being 52 nominal horse power. The winter icebreaking boats, Plessis and Colomb, were commenced in July, 1910, and finished ready for operation Nov. 25. They are 120 ft. long by 35 ft. beam, web framed throughout, built of ¾ in. steel plates. They have triple expansion engines 128 nominal h.p. Both summer and winter boats are fitted throughout with electricity, the winter boats having powerful search-lights. All four boats are screw propelled and equipped for both passenger and freight service. The accompanying illustrations show one of the summer boats, Lauzon, and one of the winter ones, Plessis, prior to launching.



The Levis Ferry, Ltd., Winter steamboat Plessis before launching.

◆

Niagara Navigation Company, Ltd.

Following is the report for the year ended Nov. 30, 1910, presented at the annual meeting in Toronto, Jan. 10:—

As authorized at the last annual meeting, Yonge St. dock, Toronto, has been purchased, and the cost thereof added to the dock property owned by the company. The debenture account has been increased by $105,000, which with cash on hand, was applied to cover cost of Yonge St. dock.

The character of the company's business requires a very high standard of service. To maintain this standard and provide for prospective increase of traffic, it may be necessary in the near future to add a new steamer to the fleet. The steamers and all the properties have been fully maintained.

After providing for the dividend, interest on debentures, writing $25,000 off steamer values, and placing $25,000 to renewal and betterment fund, the balance to credit of profit and loss account stands at $141,317.30.

Assets.

Steamers	$834,725.33	
Less written off	25,000.00	
		$ 809,725.33
Dock properties Toronto and Niagara River		347,700.00
Accounts receivable		3,552.46
Cash in bank		62,611.78
		$1,223,589.57

Liabilities.

Capital stock authorized	$1,000,000.00	
Subscribed and paid		$ 701,700.00
Debentures outstanding 4½ per cent.	227,000.00	
Accrued interest	4,256.25	
		231,256.25
Reserve for renewals and betterments		40,000.00
Accounts payable		5,247.12
Fire loss recovered from insurance companies		12,500.90
Mortgage on Yonge St. dock property due Dec. 5, 1912		63,500.00
Dividend 4%, payable Jan. 3, 1911		28,068.00
Balance at credit of profit and loss		141,317.30
		$1,223,589.57

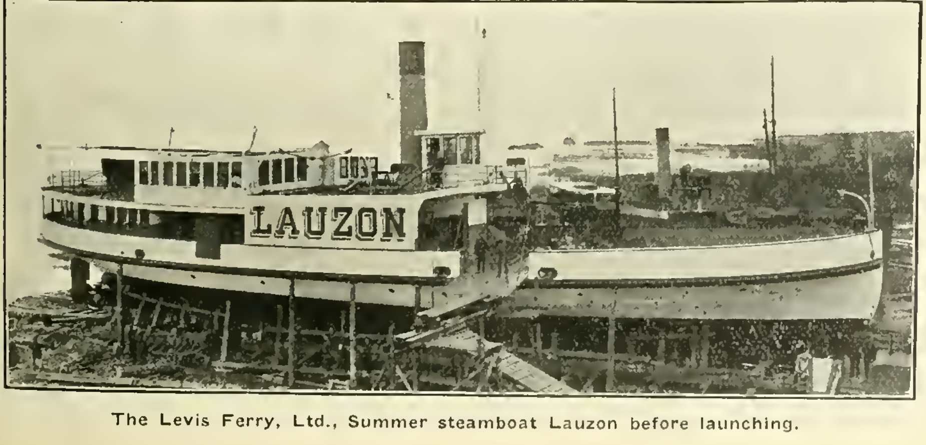
Profit and Loss Account.

Balance Dec. 1, 1909		$133,714.02
Net earnings for year		124,703.07
		$258,417.09
Interest on debentures		$ 9,126.29
Written off steamers		25,000.00
Appropriated for renewals and betterments		25,000.00
Discount and charges on debentures issued		1,837.50
Dividend 4% paid July 3, 1910	$28,068.00	
Dividend 4%, payable Jan. 3, 1911	28,068.00	
		56,136.00
Balance carried forward		141,317.30
		$258,417.09

The officers and directors for the current year, as re-elected, are:—President, E. B. Osler, M.P.; Vice President, Barlow Cumberland; other directors, Hon. J. J. Foy, Hon. J. S. Hendrie, J. Bruce Macdonald, W. D. Matthews, H. G. Osler.

◆

J. F. Demers, Manager Levis Ferries, Ltd., died at Quebec recently, after a short illness.



The Levis Ferry, Ltd., Summer steamboat Lauzon before launching.

Public Works Dredge for B. C.

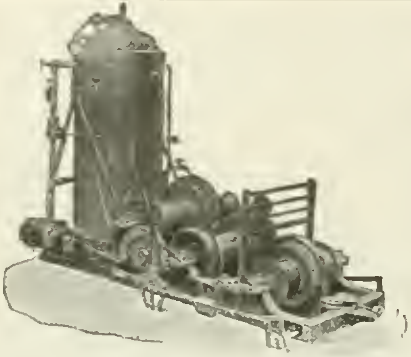
The dredge which has been built for the Dominion Government to be used in widening Burrard Inlet, Vancouver, B.C., is of the bow well bucket ladder type, constructed of steel and built under Lloyds' rules to Class A1 steel dredger, special survey, and has the following principal dimensions: Length between perpendiculars, 199 ft.; breadth moulded, 36½ ft.; depth moulded, 13½ ft. The driving gear and bucket chain is designed for dredging hard ground; the buckets are 24 cub. ft. capacity, with solid cast steel backs and links the cutting lips and all wearing surfaces are of manganese steel. The gearing for driving the chain, which is of cast steel, is arranged to give two speeds which are suitable for the material to be dredged. The bucket ladder is suspended on an independent shaft, works in an iron bow well and is capable of cutting the dredge's flotation and dredging to a depth of 50 ft. The dredging machinery and bucket chain are designed for dredging 1,000 tons of free material per hour. Shoots are provided on each side of the dredge to deliver the spoil as required, and are worked by independent steam gear. All the necessary mooring and warping winches are of the most powerful design for dredging in rapid currents.

The dredge is propelled by two sets of compound surface condensing engines, and the speed on trial trip in deep load conditions was 10 knots. The engines are arranged to drive direct on the screw shafting or to operate the dredging machinery. Steam is supplied by two Scotch boilers having a working pressure of 120 lbs.

The dredge was built in Scotland, the order being placed through John Reid & Co., Montreal. She was launched on Nov. 7, 1910, and sailed on her long voyage around the Horn on Nov. 17, and should arrive at her destination in the latter part of February.

◆

The C.P.R. has placed a contract at Newcastle-on-Tyne, Eng., for the construction of a steamship for its Pacific coast service, similar to its s.s. Princess Adelaide, to be equipped as an oil burner. She is to be ready for service by June.



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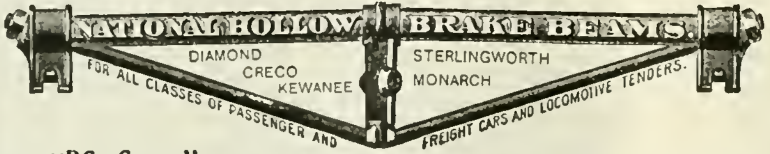
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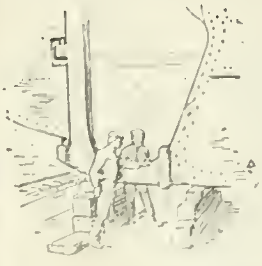

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Dominion Marine Association.

At the annual meeting in Montreal, Jan. 20, the reports of the executive committee and the committee on aids to navigation were adopted and several important resolutions were passed.

The Association declared itself opposed to the present system of examination of masters and mates, and recommended that the examination papers should be prepared at Ottawa, printed there and sent under seal to the examiner, not to be opened until the commencement of the examination, that examinations be held at stated dates and ports, and that as some parts of the examinations are oral, two examiners should sit together.

It was decided to recommend that all improvements or changes in navigable waters be made by the Dominion Government only, and solely with a view to the improvement of navigation, that only such water powers be developed as can be done without injury to navigation, and that before any further concessions are granted a comprehensive scheme should be developed by the Government.

That the Cataraqui bridge at Kingston, Ont., be raised and the harbor dredged.

That the Dominion Government be requested to keep all canals open on Sundays.

The report that the Gibraltar light on Toronto Island was to be discontinued elicited the remark from A. A. Wright that any captain who could not make Toronto harbor without the aid of that light should be sailing a stone boat behind a yoke of oxen.

The term of office of H. H. Gildersleeve, Northern Navigation Co. of Ontario, L. Henderson, Montreal Transportation Co., F. Plummer, Canadian Lake Transportation Co., and J. Playfair, Inland Lines, Ltd., who were elected in 1909 to serve for two years, having expired, Messrs. Gildersleeve and Henderson retired, Messrs. Plummer and Playfair were re-elected for three years, and E. E. Horsey, Lake Ontario and Bay of Quinte Steamboat Co., and J. E. McLurg, Algoma Central Steamship Lines, were elected for three years to fill the two vacancies. The other members of the executive committee are:—Elected in 1909 for three years, one year yet to serve, A. B. Mackay, Inland Navigation Co.; S. A. Calvin, Calvin Co.; J. W. Norcross, Mutual Steamship Co.; D. Murphy, Ottawa Transportation Co.; elected in 1910, two years yet to serve; H. W. Richardson, H. W. Richardson & Sons; J. P. Cavanagh, Ogdensburg Transportation Co.; W. F. Wasley, Muskoka Lakes Transportation and Hotel Co.; G. B. Green, Upper Ottawa Improvement Co.

The officers were re-elected as follows:—President, F. Plummer; First Vice President, J. S. Playfair; Second Vice President, D. Murphy.

The executive committee's report dealt very fully with the Association's work during the year, the following being extracts therefrom, with summaries of the less important matters:—

Pilotage Dues.—The bill introduced in the Commons last session on behalf of the Association to provide for the inclusion of Ontario in the list of provinces enjoying exemption from the compulsory payment of pilotage dues, came up for its second reading and was referred to the standing committee on marine and fisheries. The Association counsel attended with witnesses when this committee considered the matter in Ottawa, and was successful in getting the bill through the committee. Unfortunately, the committee's report was not taken up in the house before Parliament prorogued, although no opportunity was lost to urge its presentation. At the instance of the Association the bill was again introduced early in the present session, and has led the Department to consider the matter seriously and to propose the introduction of a Government measure. The terms of this measure were discussed at a meeting called by the Minister of Marine in Montreal on Dec. 22, 1910, at which the Shipping Federation of Canada, and this Association were represented. The Shipping Federation presented strong opposition to the proposals of this Association, but ultimately the following conclusions were arrived at: Firstly, the pilotage charge for entering and moving in Montreal harbor will be discontinued; if necessary, by amendment of the statute. Secondly, the Minister considers favorably a suggestion, concurred in by the Shipping Federation, that provision be made for examinations for masters and mates to qualify as pilots in the districts of Montreal, Quebec, etc., similar to the provision now made by sec. 487 regarding other districts. Thirdly, the Minister favorably considers a suggestion, made by this Association and ultimately agreed to by representatives of the Shipping Federation, that sec. 435 be put in operation and second-class pilots appointed accordingly from among the apprentice pilots, and that the employment of these men on certain conditions be permitted on vessels from the lakes. Fourthly, the Minister strongly favors the construction of a second ship channel where necessary between Montreal and Quebec, for the use of lighter draught vessels such as those from Ontario.

The Minister is preparing a bill and hopes to submit the draft measure to representatives of this Association, of the Shipping Federation and of the Pilots Association, early in the year, with a view to having the amendment of the statute made during this session. In the meantime the pending bill of this session, may reasonably be permitted to stand, and its sponsor has been asked to await developments.

U. S. Tonnage Tax and Canadian Harbor Masters' Dues. — Representations made by the Association and supported by the Lake Carriers Association, secured the passage of the bill by the U. S. Congress, which became effective at the opening of navigation in 1910. The reciprocal arrangement was then completed by the repeal of the order-in-council of 1909, which reimposed harbor masters' dues in Ontario on vessels from the U. S.

U. S. Corporation Tax.—Members of the Association carrying freight or passengers from or to ports in the U. S. are subject to this tax of 1% on the net income over $5,000 received from business transacted and capital invested within the U. S., and also requires the filing annually of a statement showing the amount of this net income. Much correspondence has taken place regarding the application and interpretation of this law, and probably no two companies have adopted exactly the same method of determining the amount of their "business transacted" within the U. S. Apparently the department charged with the collection of the tax has not arrived at satisfactory conclusions as to the method of computation in the case of companies foreign to the U. S., for the request for rulings in the matter, made on behalf of the Association, has elicited only ambiguous and unsatisfactory replies. Attention is called to the penalties provided for failure to make up and file the required annual statements before the dates named in the statute.

Power Development in Navigable Waters.—The proposals of the Long Sault Development Co. and of the St. Lawrence Power Co. were considered at the last annual meeting of the Association, and a committee was appointed to join a conference in Montreal of the various interests opposed to the proposals and to attend the session of the International Waterways Commission in Toronto. It was further resolved that if the full information and plans promised were not forthcoming at the session, details should be demanded and that in any event an adjournment should be asked to permit consideration after the plans were submitted. At the conference in Montreal it was arranged that each interest should present its own case, but that all should join in an effort to obtain the plans and an adjournment for further consideration. The subsequent session of the Commission in Toronto was largely attended and the Association's Counsel and A. A. Wright presented the Association's objections and claims. The Dominion Conservation Commission, the Ontario Hydro-Electric Commission, and various public and private interests, including the Richelieu and Ontario Navigation Co., the Calvin Co., and others, were also heard in opposition to the scheme. An opposite view was taken by certain other members of the Association interested in the transportation of freight on the St. Lawrence, and their views were presented by F. Plummer, who expressed the belief that the proposed undertaking would be advantageous to vessel interests. The Commission took no action beyond undertaking again that the plans would be produced; and it is understood that the question stands for consideration by the new International Commission, for the appointment of which legislation is pending in Parliament.

The application for incorporation of the St. Lawrence Power Transmission Co., although only for transmission rights, met with strong opposition in the house, as its incorporators were largely identical with the promoters of the power development plans, and was only put through after many amendments in the bill and considerable limitation of the company's powers.

A bill introduced on Dec. 14, 1910, in the U. S. Congress to provide for the erection of dams for water power and other purposes in the St. Lawrence near Long Sault Island, was referred to the Committee on Rivers and Harbors in the House of Representatives, and a public hearing was arranged by that committee in Washington for Jan. 9, 1911, of which your committee received due notice, with an invitation to have a representative attend. It was resolved that no action be taken by the Association in the meantime in regard to this bill, as the proposed legislation is expressly subject to the approval of the proper authorities, and the International Commission will doubtless hold further public enquiry in the matter. Your committee recommend, in view of the conflict of opinion within the Association, that the annual general meeting should consider the question and decide whether any and, if so, what further action shall be taken by the Association on the whole question.

The Canadian Light and Power Co. applied for leave to withdraw more water from Lake St. Francis by the Beauharnois canal, and written protests were made on behalf of the Association to the Premier and the Ministers of Railways and Canals, Marine, and Public Works, as soon as the matter became known. Counsel waited upon the ministers later, and an appointment was made for the hearing of all parties. At that hearing it developed that compensating or remedial works were proposed to maintain levels and protect navigation, but a strong protest was made on behalf of the Association against such methods and against further similar power concessions on the St. Lawrence on the ground that experience proved that navigation interests were not always protected; and a plea was also made for better recognition of the admittedly correct doctrine that navigation interests are to be the first considered.

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A. A. HEARD, G.P.A., Albany, N.Y.

An important point in favor of the contentions of the Association was developed at this meeting by the complaint of the Cedars Rapids Manufacturing and Power Co., that, by reason of their existing rights in the Cedar Rapids, the Government could do nothing to alter the flow down these rapids without their consent and proper indemnities being given. The Minister of Canals admitted that there might be something in this Association's contention that the Government was losing control of the river. The Ministers finally agreed to require submission of the plans to an engineer for this Association, and H. Holgate, C.E., was named. Later, in a written memorandum, your Counsel submitted the Association's views maintaining the position of absolute opposition to the proposals and at a meeting of the committee this protest was ratified and confirmed, and it was also resolved that a committee consisting of Messrs. Henderson, Plummer and Smith, should interview Mr. Holgate and ascertain his views and the nature of his recommendations before the Association commit itself to acceptance of his services and advice.

Great Lakes Protective Association.—Canadian Lake Protective Association.—At the last annual general meeting of the Great Lakes Protective Association, in Detroit, your Counsel was appointed to represent Canadian owners upon the advisory committee of that Association, and during 1910 he attended all except two out of the dozen meetings which that committee has held at Cleveland. The failure of the Canadian representative to secure support in an effort to bring one of the principal functions of the Great Lakes Protective Association into operation and discipline masters guilty of apparently careless navigation, was a large factor in the discussion that led to the formation of an organization in Canada for that and other purposes. The Canadian Lake Protective Association has been organized among the owners of steel built bulk and package freight boats of British and Canadian register trading on the lakes and St. Lawrence, and proposes to exercise control over the methods of navigation of the boats owned by its members. Rules for masters and engineers have been framed and will be enforced by a committee duly appointed. It is believed that this organization will justify the formation of a preferred class of underwriting risks and bring about a substantial saving in the cost of insurance for its members. At the date of this report some 80,000 or 90,000 net registered tons of vessel property of the class named are enrolled in the new Association. The formation of this Association, and the question of cheaper marine insurance and the adoption of means to justify a decrease in premium rates, have occupied the attention of the grain section throughout the year. Doubtless the readiness with which owners have entered the new organization is an indication of a general intention to try to make a better record in the matter of disasters on the lakes. At one of the last meetings the consensus of opinion, with the exception of only one or two owners, was in favor of asking for no extensions of cover beyond the date Nov. 30, fixed by underwriters for last sailings on the lakes. Your representative so reported to the committee of the Great Lakes Protective Association, and the opinion was concurred in.

Terminal Elevators.—Considering this vexed question, the last annual meeting adopted the recommendation of the executive committee in favor of the complete abolition of the system of Government supervision and certificate in weighing grain into vessels, being driven to this alternative by the intimation from the Department of Trade and Commerce that the application of the system to unloading as well as loading ports could not be hoped for. The bill introduced by the Minister of Agriculture to give effect to this recommendation was not enacted, having no further consideration in the house after its first reading, nor is it known whether the measure will be introduced again at the present session. The subject should have the attention of your new committee in 1911.

Later in 1910, at a meeting of the grain section of the Association, it was resolved to ask the Government to take over and operate the terminal elevators, and a recommendation was made accordingly to the Minister of Trade and Commerce and other members of the cabinet. From time to time in the course of interviews with members of the Government, this recommendation has been discussed and the idea has developed that while ownership might not be possible, supervision might in some way be undertaken. Your committee fully appreciate the action of the Government during the past season in holding an investigation into affairs at the Canadian loading ports, and the assistance rendered by the grain exporters of the country in bringing this about is cordially recognized. There is no doubt that this enquiry resulted in a very substantial improvement of conditions. Recently, and since the pressure of the large delegation of western grain growers has brought the matter under immediate discussion, the Premier has intimated the intention of the Government to take control of the situation, a bill is being introduced and the appointment of a commission to control the operation of the terminals is probable at an early date; and having regard to the work of the railway commission and similar bodies, it may reasonably be hoped that a practical remedy for many existing troubles is thus close at hand.

The Lake Shippers' Clearance Association has had one complete season's operation, but unfortunately conditions were such in the season of 1910 that results can scarcely afford a fair or complete test. The consensus of opinion is that the organization has proved distinctly beneficial, and while there are of course individual instances of dissatisfaction, on the whole dispatch in loading has been much improved; and from a variety of causes, including not only the operation of this system, but also the investigation on the part of the Government, discrepancies in weight have not been so heavy or so frequent. The question of the rates charged for loading at one, two or three or more houses remains to be considered, and it has been felt by some that at least the fixed rate of 10c. for any number of houses more than two will require revision. This Association applied for detailed information so that the question might be intelligently discussed, and considerable correspondence ensued, but the request was made in the end that the matter should be allowed to stand until next year, so that the records might be more complete.

Charges for Trimming Grain Cargoes.—A committee was appointed at the last annual meeting to endeavor to arrange a satisfactory schedule of rates with trimmers at Fort William and Port Arthur and to try to carry out the recommendations on record regarding the installation of trimming spouts on all loading elevators. This committee went to Fort William and there made a three-year agreement with the trimmers for the adoption of a schedule of graded charges, and this schedule has now been in force and adhered to throughout the past season. The possibility of installing trimming spouts was also investigated, and the question was discussed with the management of the various elevators, with some hope of improvement, but without material results, at least up to the present date. Your committee believes that the installation of these spouts should be made compulsory, and recommends that if the authorities do not undertake to make provision for this in the law, private legislation should be introduced on behalf of the Association, as in the case of the Pilotage Bill.

Welland Canal. — The unanimous adoption of the report of the last executive committee by the annual meeting at Ottawa in Jan., 1910, left this association pledged to the support of the proposal for an improved Welland canal in accordance with many previous resolutions and recommendations. Nevertheless, in view of an existing division of opinion and the belief on the part of some members of the associaton that the building of the new canal would bring heavy U. S. tonnage into competition with the Canadian tonnage for which the present canal is adapted, this association has not been officially represented at the hearing of any of the delegations which have met the Government this year to urge the commencement of the undertaking, and your counsel when he has appeared has done so on behalf of the Kingston Board of Trade. The only question left open now by the announcements made by the Government is the time at which the work shall commence.

Rideau Canal.—Active measures were taken on behalf of this association in opposition to the C.P.R. plans for entrance into Ottawa over the bed of the Rideau canal. The proposals involved the closing of the last mile of the canal and the utilization of this space for railway station, yards and sidings. The usefulness of the canal for through traffic between the Ottawa River and Lake Ontario was threatened with destruction, but nevertheless the proposals seemed to meet with serious consideration. Protests were filed on behalf of the association with the Department of Railways and Canals and with the Railway Commission. Later the association joined in the support of a movement to increase the value of the canal by provision for the maintenance of water levels throughout the season of navigation, and in Nov. last authorized members of the association joined a delegation of some 60 or 70 representatives of municipalities and organizations interested in this waterway and assisted in the presentation to the Minister of Railways and Canals of the claims made for protection and improvement. This delegation received a very favorable hearing and was not only practically assured that the C.P.R. application would not be granted, but was also promised an immediate survey of the route with a view to making it navigable at all seasons, at least to the full draft for which the locks are adapted.

Sault Ste. Marie Lock.—The recommendations of the last annual meeting for the building of a new lock on the Canadian side at Sault Ste. Marie and for the posting at suitable points of the available depth of water in the present lock and for better control of the valves in operating the lock, were laid before the Department, but your committee is unable to report what consideration they received.

Handling Lines at Canal Entrances.—Your last committee's report named the various locks and entrances at which the Department, through its ex-Deputy Minister, M. J. Butler, had arranged to take lines from vessels, and also the points at which the association desired additional men. In spite of the good progress apparently made, your committee has now to report with regret that men were taking lines this season at only two points, namely, the head of the Soulanges and the lower entrance of Farran's Point canal. This condition of affairs was reported by the association to the Department some time be-

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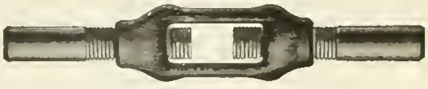

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fore the close of navigation, and the urgent need of assistance in the matter was pressed upon the Department's attention. The Department has, however, vouchsafed no explanation beyond acknowledging the letters.

Soulanges Canal.—Recommendations have been made by the association at various times during the season for an early undertaking of the improvement of the entrance at Coteau in accordance with previous recommendations and investigations; and for concrete retaining walls or other preventive works in the stretch above lock 4 to half a mile east of the Delisle River, to obviate the tremendous difficulties that would be entailed if the banks, on account of the nature of the soil, should collapse, as they have done on another occasion. The committee can only report acknowledgment of the receipt of some of these recommendations.

Lachine Canal.—The signal lights on lock gates recommended by the last executive committee were installed.

Cornwall Canal. — Improvement of the end of the bank at the eastern entrance was recommended, but no action or consideration promised.

Morrisburg Canal.—The committee believe that improvement of the upper entrance is desirable, because entrance is impossible in the current, and in time of low water, as in the past season, loaded boats which should have gone down the canal, have touched bottom in the Rapide Plat.

Murray Canal.—In view of the greatly increased traffic in the Bay of Quinte, the association has recommended the lighting of the Murray canal, and the matter is under consideration.

Opening Canals on Sunday.—As in other seasons, the association has when special circumstances warranted, asked that the canals remain open on named Sundays, and reasonable requests of this kind were usually granted. The usual permanent opening during the fall months was also asked for and granted, and a request was presented that arrangements be made by general rule that the canals remain continuously open each year after Sept. 1.

In your last committee's report, reference is made to the statement by the ex-Deputy Minister, M. J. Butler, that while the association was asking a good deal, he nevertheless appreciated the efforts of the association to improve the efficiency of the canal system. Your present committee regrets to report that its efforts are apparently not looked upon quite so favorably, and that in fact formal or printed acknowledgments of its recommendations and the lack of further evidence of serious consideration rather indicate the need of a better understanding with the present officials of the Department, and it is suggested that an effort be made by your next committee to bring this about.

Dry Docks.—No amendment has been made in the law imposing customs duty on repairs made in a foreign port, but in every case which has been shown by reasonable proof to fall within the provisions of the statute regarding re-payment of the duty, the proper remission and refund has been readily obtained. The Government's policy in favor of subsidies for new docks in Canada was made operative by legislation during the last session of Parliament, and improved docking facilities are already under way at various points. At Kingston the Kingston Shipbuilding Co. has leased the Government graving dock and is undertaking the establishment of a shipbuilding plant. The association was instrumental in the revision of the tariff of tolls proposed by this company and in preventing the approval of a schedule by the Department of Public Works until it was generally satisfactory.

Central Pier Bridges.—On account of complaints made, the plans submitted by the C.P.R. for its new bridge over the Kaministikwia River were not approved, and the elimination of the central pier, a wider span, and a change in location were demanded. New plans were prepared and submitted and the promised opportunity was given to the association to inspect them before action was taken, approval only taking place after a declaration from the association that the new proposals, which included a bascule or lift bridge of wider span, were quite satisfactory.

A request for action to lead to improvement of the central pier bridge on the G.T.R., near Welland, met the response that nothing would be done in that regard during 1910. Your new committee should apparently repeat the request.

U. S. Commerce Court.—Attention is called to the Act of Congress of 1910 to create a Commerce Court. By sec. 6 it becomes the duty of every common carrier, subject to the provisions of the act, to designate in writing an agent in the city of Washington upon whom service of all notices and processes may be made in any proceeding or suit pending before the Interstate Commerce Commission or the new Commerce Court, provision being also made that service may be made by posting such notices in the office of the commission if no agent is appointed. The corporations subject to the commission and the new court are named in sec. 7 of the act, and attention is called to that section's definitions of the kind of transportation subject to the statute.

Customs Duty on Steamboat Fuel.—Early in the year the association was asked to endorse a proposal for the removal of the customs duty on coal. The grain section considered the question and came to the conclusion that in view of the conditions under which steamboat fuel is now obtained it would be better to limit the request of the association and to ask simply that all Canadian lines be put on a parity, so that boats plying in Canadian waters only should enjoy the same exemption from duty on their fuel as is enjoyed by Canadian vessels which enter or pass through U. S. waters. Some correspondence ensued with the Department of Customs, but no action was taken, the Department alleging that the distinction was made between Canadian vessels that enjoyed exemption from competition with U. S. tonnage, and those that were not protected by the coasting laws, and that uniformity could only be obtained with due regard to the preservation of the duty on coal for local consumption by withdrawing the privileges altogether.

The National Association of Marine Engineers, by deputation and by letter, asked for the appointment of a committee of arbitrators by this association to act with a similar committee of their own appointment and settle all disputes arising between the associations or their members. The communications were considered at a meeting of the grain section early in the year, and it was resolved that no action be taken, an objection being raised that this association had no inherent authority to deal with matters pertaining to the operation of individual vessels.

Light House Board of Canada.—The association was invited by the Minister of Marine and Fisheries to nominate a representative to act on the Light House Board in the interests of vessels on the inland waters, and your Counsel was nominated. The Department states that the Board is being reorganized, and it is understood that the appointment of your nominee will be made before long.

Livingston Channel, Detroit River.—The association was asked by the president of the Lake Carriers' Association to use its influence at Ottawa to prevent opposition to the maintenance of dams, etc., necessary in the construction of this work. Some enquiry was made in the effort to learn what proper basis existed for the local protests made against these dams, but in the absence of accurate data it was considered wise to confine the association's action in the matter to a general petition that no petty or selfish claims of small moment or little substance should be permitted to interfere with the speedy completion of a great undertaking financed by the U. S., and to be enjoyed by this country and its lake shipping without expense.

Lake St. Clair and Lake Erie Canal.—A project is on foot for a deep draft canal from the southeast end of Lake St. Clair across the neck of land to Lake Erie to shorten the passage and avoid the dangers of navigation in the Detroit River and in Lake Erie west of the southeast shoal. The association has been approached by the promoters of the undertaking with a view to learning the attitude of vessel owners towards the project, but no formal application for an expression of opinion has been made. It is understood that the plans and proposals in detail will be laid before the association early in the year.

The report dealt at considerable length with various bills introduced at the last session of the Dominion Parliament, and pointed out the association's action in regard to the same and the very satisfactory results secured.

The tonnage entered in the association and upon which dues were paid in 1910 was 175,594 net registered tons, of which 137,384 was steam and 38,210 barge or sailing property. The total shows an increase of over 20,000 tons over tonnage enrolled in 1909. The receipts for the year were:—Balance from 1909, $1,904.58; interest, $27.26; membership assessments, $2,939.48; total, $4,871.32; expenses, $3,373.11, balance on hand, $1,498.21.

Wireless Telegraphy on Ships.

The bill recently introduced in the House of Commons, respecting wireless telegraphy on ships, provides that every sea-going and coasting passenger ship over 400 tons, gross tonnage, registered in Canada, and every sea-going and coasting freight ship over 1,200 tons, gross tonnage, registered in Canada shall be equipped with an apparatus for wireless telegraphy, and that every owner of any such ship who neglects to equip it with the said apparatus shall be guilty of an offence, punishable on summary conviction or on indictment, and be liable to a penalty of not less than $100, and not exceeding $1,000, or to imprisonment for a term not exceeding 12 months, or to both fine and imprisonment.

The Allan Line is reported to have purchased premises, adjoining the Canada Life Block, recently bought by the C.P.R., on Main St., Winnipeg, where it proposes to erect an office building, of which it will occupy the ground floor, the remainder being taken by Allan, Killam and Mackay, real estate and insurance brokers.

During Nov. 1910, 12 employes were killed, and six injured in the course of their work in connection with the navigation of Canadian waters. Of the fatalities, 10 were due to drowning, and one each to being caught between vehicles, and to a fall, while of the other accidents, four were due to falls, and one each to falling material and to machinery.

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Northern Navigation Co. of Ontario

Following are extracts from the report of the year 1910, presented at the annual meeting in Toronto, Jan. 31:

Navigation opened on Lake Superior on April 16, and the Georgian Bay on April 23, which was 11 days earlier on Lake Superior and eight days earlier on the Georgian Bay than in 1909.

Our statement shows an increase of about $84,000 in gross receipts, and $20,000 in net receipts, as compared with the previous year.

Last year 10 steamers appeared in the balance sheet valued at $1,485,394. This year it shows nine steamers, valued at $1,479,373. This difference is accounted for by the sale of the City of Windsor and some slight increases in the construction accounts of the Hamonic and Waubic before transferring them to the steamers' account.

The gross earnings of the company were $729,011.34, and the expenditure $568,935.95, which, with the balance at credit of profit and loss, Jan. 1, 1910, of $58,641.66, leaves a balance of $218,717.05, less appropriation for President and directors of $3,220.00. Out of this amount your directors have made the following appropriations:—

Claims for 1909 paid in 1910	$ 5,733.56
Interest on insurance and renewal funds	4,093.77
Renewal fund	28,000.00
Repair and maintenance fund	10,000.00
Written off special improvement account	2,100.00
Appropriation for President and directors, 1910	3,000.00
Interest on bonds hypothecated with Traders Bank	22,231.14
Dividend at 8% per annum on capital account	80,000.00
	$155,158.47

Leaving a balance to be carried forward at the credit of profit and loss of $60,338.58.

The reserve funds now stand as follows:—

Renewal fund	$120,312.43
Marine insurance fund	17,174.43
Profit and loss	60,338.58
	$197,825.44

The percentage of expenses of gross earnings (not including claims paid for previous years) are as follows:—1903, 94.16%; 1904, 89.71%; 1905, 80.73%; 1906, 77.73%; 1907, 77.63%; 1908, 80.73%; 1909, 77.80%; 1910, 78.04%. The percentage for operating for 1910 over 1909 shows a slight increase, which is accounted for by the loss of revenue during the strike on the G.T.R.

Your directors opened a laundry during the year at Sault Ste. Marie, Ont., it being a central location, the results of which have been satisfactory. On account of the scarcity of labor for handling package freight at Point Edward, your directors found it advisable to erect boarding houses to take care of outside labor.

Profit and Loss Account.

Balance from 1909	$ 58,641.66	
Less appropriation for President, directors and executive fees	3,220.00	
		55,421.66
Gross earnings, 1910	729,011.34	
Less total expenditure	568,935.95	
Net earnings		160,075.39
		$215,497.05
Dividend 8%	$ 80,000.00	
Steamers renewal fund	28,000.00	
Interest on renewal fund $89,190.78 one year at 3½%	3,121.65	
Interest on marine insurance fund $16,202.31 one year at 6%	972.12	
Written off special improvement account	2,100.00	
Appropriation for repair and maintenance	10,000.00	
Claims 1909 paid 1910	5,733.56	
Appropriation for president, directors and executive fees, 1910	3,000.00	
Interest on bonds hypothecated with Traders Bank	22,231.14	
		155,158.47
		$ 60,338.58

Assets.

Nine steamers	$1,479,373.49	
Buildings and furniture	41,808.68	
Fuel and supplies	16,297.77	
Insurance unexpired	17,349.00	
Accounts receivable	58,498.84	
Stocks and bonds	1,500.00	
Bills receivable	2,000.00	
Repair and maintenance	11,727.90	
Special improvement account	2,200.00	
Fuelling plant	19,399.53	
Grain Exchange seat, Winnipeg	1,450.00	
		$1,651,605.21

Liabilities.

To shareholders:		
Capital stock	$1,000,000.00	
Renewal fund	120,312.43	
Marine insurance fund	17,174.43	
Profit and loss	60,338.58	
Dividend, 1910	80,000.00	
To the public:		
Traders Bank	364,853.93	
Accounts payable	8,925.84	
		$1,651,605.21

Jas. Playfair, of Midland, Ont., President of the Inland Lines, Ltd., on behalf of himself and associates, made an offer in the middle of January of $1,250,000 for the $1,000,000 of the Northern Navigation Co.'s stock, $50,000 to be paid Feb. 15 and the balance Mar. 31. The matter was expected to come up at the N.N. Co.'s annual meeting Jan. 31, which had not been held when this issue was closed for the press.

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Notices to Mariners.

The Department of Marine has issued the following:

119. Nov. 19.—313. Ontario, Lake Ontario, Cobourg harbor, changes in lighting arrangement.

120. Nov. 14.—314. British Columbia, Burrard Inlet, First Narrows, Prospect point, red sector to be inserted in light. 315. British Columbia, Vancouver island, east coast, Baynes sound, Port Augusta, Goose spit, intended change in light.

121. Nov. 25.—316. Nova Scotia, Cape Breton island, Cape North, change in position and character of light. 317. New Brunswick, Miramichi River, northwest branch, light on bridge discontinued.

122. Dec. 14.—318. Quebec, River St. Lawrence, Saguenay river entrance, Pointe Noire, daymarks on range lighthouses. 319. River St. Lawrence, Crane island, change in character of light. 320. River St. Lawrence, ship channel between Quebec and Montreal, Ste. Croix, arc of visibility of range lights. 321. River St. Lawrence, ship channel between Quebec and Montreal, Lake St. Peter, gas buoy at No. 3 curve.

123. Dec. 15.—322. British Columbia, Active Pass, Galiano island, Mary Anne point, beacon light established. 323. Queen Charlotte sound new channel, Crane Islets, beacon light established.

124. Dec. 15.—324. Prince Edward Island, south coast, Hillsborough bay, Charlottetown harbor, change in color of Brighton Beach range lights. 325. Prince Edward Island, south coast, Bedegree harbor, Summerside harbor, change in description of island shoal buoys.

125. Dec. 28.—326. British Columbia, Vancouver Island, east coast, Baynes sound, Port Augusta, Goose spit light, erratum. 327. Alaska, Clarence strait, Ship island, light established. 328. Alaska, Sumner strait, Strait island, light established.

126. Dec. 30.—329. Ontario, Georgian bay, Nottawasaga island, period of flashes of light. 330. Ontario, Georgian bay, Parry Sound, wreck removed.

1. Jan. 4.—1. Nova Scotia, south coast, Halifax harbor, Leopard shoal, gas buoy established. 2. Newfoundland, south coast, Trepassey bay, Powles head, change in characteristic of fog alarm.

2. Jan. 5.—3. British Columbia, Queen Charlotte islands, Hecate strait, off Selwyn inlet, Low island, gas lighted beacon established. 4. United States of America, Washington, Juan de Fuca strait, Neah bay, range lights established. 5. United States of America, Washington, Juan de Fuca strait, Neah bay, Baaddah point, light changed.

3. Jan. 9.—6. New Brunswick, Bay of Fundy, Whitehead island, Gull cove, light pole replaced by tower.

4. Jan. 9.—7. Ontario, Lake Ontario, west end, Burlington channel, main light improved. 8. Ontario, Lake Superior, Thunder bay, Hare island reef, gas and bell buoy to be established.

5. Jan. 11.—9. Quebec, Ottawa River, McTavish point, light pole replaced by tower. 10. Ontario, Lake Ontario, Bay of Quinte, Onderdonk point, lighthouse established. 11. Ontario, Lake Huron, Kincardine, change in character of back range light.

6. Jan. 14.—12. New Brunswick, Bay of Fundy, Deer island, off North West harbor, Pompey ledge, change in color of beacon. 13. Nova Scotia, Bay of Fundy, Chignecto channel, Shulie, position of lighthouse. 14. Quebec, Chaleur bay, St. Omer, lighthouse established.

7. Jan. 20.—15. Quebec, River St. Lawrence, Matane, bell buoy replaced by gas and bell buoy. 16. Newfoundland, north coast, Strait of Belle Isle, Cape Norman, change in appearance of lighthouse.

8. Jan. 20.—17. Ontario, River St. Lawrence, Thousand Islands, buoy established south of Howe island. 18. Ontario, Georgian bay, Victoria harbor, range lights established.

9. Jan. 21.—19. Nova Scotia, southwest coast, Pubnico harbor entrance, St. Ann point, bell buoy established. 20 Nova Scotia, Cabot strait, St. Paul island, northeast point, fog alarm established. Atlantic cove, fog alarm discontinued. 21. New Brunswick, east coast, Northumberland strait, Jourimain islands, change in position of lighthouse.

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Atlantic and Pacific Ocean Marine.

The Merchants and Shippers Steamship Co., of Sydney, Australia, has proposed to its Government to establish a 15 knot service between Australia, New Zealand and Canada.

The Elder Dempster Co.'s s.s. Kwarra, which was scheduled to sail from St. John to South African ports in January, was reported to have run ashore in Pentland Firth, Scotland, Jan. 3.

The White Star Line's s.s. Teutonic will be transferred to the Canadian service on the reopening of the St. Lawrence season. She will carry second and third class passengers only.

Press reports state that the steamship companies running to St. John, N.B., are considering a reduction of service to that port, on account of the increased harbor dues there, and the decrease in freight offering at remunerative rates.

The charges recently brought against the local agent of the Uranium Steamship Co., for bringing undesirable immigrants into the country, were dismissed at Halifax, N.S., on the ground that he was not responsible for any violation of the act.

A cargo of iron was landed at Halifax, N.S., Jan. 5, which has been salved from the Allan Line s.s. Hungarian, which was wrecked on the Nova Scotia coast in 1860. Several years ago a quantity was landed from the same source, but the work was abandoned as it did not pay, but owing to the present price of

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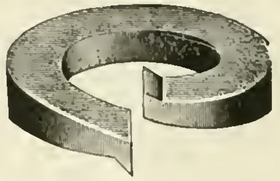

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The Northern Navigation Company, Limited

Notice is hereby given that a Dividend at the rate of Eight Per Cent. on the paid-up Capital Stock of this Company has been declared for the current year ending Dec. 31st. The same will be payable on Friday, Jan. 20th, 1911, to shareholders of record Jan. 16th, and the transfer books will be closed from Jan. 17th to 31st, 1911, both dates inclusive.

By Order of the Board.

H. H. GILDERSLEEVE,
Manager.

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iron, the salving is considered remunerative.

The Canadian Mexican Pacific Steamship Co., announces that it has arranged for the purchase of a steamship of about 7,000 tons capacity, to commence service in March, to replace the s.s. Henley, the charter for which expires in Feb. Capt. T. H. Worsnop, General Manager, states that by the autumn, another vessel will be added, making three in the service between the B.C. coast and Salina Cruz, Mexico.

Application is being made to the Dominion Parliament to incorporate the All Red Steamship Co., with powers to own and operate steamers from Canadian ports on the Atlantic and Pacific oceans, and waters contiguous thereto, and to build, own and operate harbors, docks, wharves, piers and other works in connection therewith. E. N. Armstrong, Montreal, is solicitor for applicants.

The U.S. Government has brought action against a number of steamship companies, including the C.P.R., Allan Line and International Mercantile Marine Co., and against a number of persons, connected therewith, including B. J. Allan, of the Allan Line, Boston, Mass., as members of the Atlantic Conference, for making an illegal contract, and asks that they be enjoined from further agreeing or conspiring to injure or destroy the business of any corporation engaged in carrying steerage passengers between points in the U.S. and Europe. It is stated that the action is a "friendly" one, and also that so far as purely Canadian companies are concerned in Canadian business, there is no jurisdiction. It is claimed that the action has been taken at the instance of a steamship company, not a member of the Conference, and which claims that "all the competitive devices of the conference are in full force" against it.

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Maritime Provinces and Newfoundland.

The city of St. John, N.B., received from harbor fees, dues and wharfage, during 1910, $92,835, against $84,649 during the previous year.

The New Brunswick Public Works Department has received tenders for the construction of a low water wharf at Maugerville, in Sunbury county.

The Dartmouth, N.S., Ferry Commission, it is reported, has decided to order a steel ferry steamboat, to be built in Glasgow, Scotland, at a cost of about $62,000.

J. McGill recently launched, at Shelburne, N.S., a schooner named Lloyd George, for Zwicker & Co. Her dimensions are, length, 108 ft., breadth, 26 ft., depth 10 ft. 5 ins.

The s.s. John Irwin, which recently stranded at Queensport, N.S., has been docked at Halifax, and tenders have been called for repairs. It is stated that 29 new plates will be required, in addition to minor repairs.

W. D. Reid, President Reid Newfoundland Co., in an interview recently, indicated that the establishment of a daily steamer service between Port aux Basques and North Sydney, is a probability of the coming season.

The Governor of Newfoundland has declared, by proclamation, that the provisions of chap. 121 of the Consolidated Statutes concerning outport pilots and pilotage, shall apply to Port aux Basques, effective July 1.

The Reid Newfoundland Co.'s coastal bay service, which completed its season on the last day of the year, handled a considerable increase in both passengers and freight, over the previous season, and without any fatal accident.

The name of the schooner Rowena, register no. 103261 at St. John, N.B., which was wrecked some time ago, has been changed by order in council, the requirements of the law having been complied with, to Ethel McLeod.

The St. John, N.B., city council ferry committee, decided recently in response to the offer of the Pennsylvania Rd., to sell one of its ferry steamers, to send the Superintendent of the ferry service to New York, to inspect the vessel and report.

S. Brookfield, of the Halifax dry dock, recently offered the use of the plant to the city, for the construction of two, or more, steel schooners for the deep sea fisheries. The city council and board of trade are taking the matter up, with a view to giving practical effect to the offer.

The Government s.s. Stanley, which, with the s.s. Earl Grey, has been running to Charlottetown, P.E.I., was compelled to change to the Georgetown route, Jan. 4, on account of the heavy formation of ice. The latter vessel is able to continue on the Charlottetown route.

Bowring Bros.' sealing steamer, Stephano, which is under construction in Glasgow, Scotland, will, it is stated, be completed by the end of March, and is due to arrive at St. John's, Nfld., early in April. She will be operated on the St. John's, Halifax and New York route, with the s.s. Florizel.

The survey of the St. John River, which is being undertaken by the International St. John River Commission, is being continued throughout the winter. When completed, a complete survey of the river, with its tributary streams and lakes will have been obtained. The work is in charge of H. M. Ranney.

The Port Elgin Fish Co., Ltd., has been incorporated under the New Brunswick Companies Act, with a capital of $24,000, and office at Seal Cove, to carry on a general fishing and fish dealing business along the coast of New Brunswick, and in connection therewith to own and operate boats, wharves and all the necessary facilities therefor.

The returns of trade at the port of St. John, N.B., for the portion of the winter season to the end of 1910, show Canadian exports of $1,785,267, against $2,355,476 for same period 1909. There was also a decrease of about $43,000 in foreign exports through the port. The chief falling off was in the export of lumber to Great Britain.

The Star Line Steamship Co., Ltd., is applying in the N.B. courts for a winding up order. J. W. Smith, President, is reported to have said, in St. John recently, that this action was necessary, in the interest of the creditors, as the company had been going behind. The sale of the assets would probably follow the granting of the winding up order.

R. G. Reid, General Superintendent Reid Newfoundland Co., in a conference with the representatives of the Longshoremen's Protective Union, at St. John's, Nfld., recently, effected a settlement of the dispute with the men, which provides that the company will not employ non-union men, except in cases where the demand for men cannot be met by the union.

The Dominion Public Works Department will shortly call for tenders for the construction of a steel sand suction dredge for work in the Maritime Provinces. The specifications provide for a dredge 110 ft. over all, 30 ft. beam, and 7 ft. 8 ins. deep, fitted with a 15 ins. suction, triple expansion engine, Scotch marine boiler and service condenser adapted for salt water. Teh discharge will be on the pontoon system.

Press reports from Halifax state that the Nova Scotia Fish Co., is being organized, to own and operate 25 vessels, two of which will be of steel, and two fishing stations, one on the Newfoundland coast and one at Cape Breton. It is proposed that after the fishing season, the vessels will take the fish to the Mediterranean and Brazil. It is stated that French capital is chiefly interested in the scheme.

The Naval Service Department recently received tenders for the supply of a schooner for the Naval Service Supply service. The vessel required is to be of 100 tons burden, not more than three years old and well and strongly built of oak, built along the lines of those used by fishermen along the Newfoundland banks, complete with all gear, sheathed with greenhart, and equipped with auxiliary engine. The two latter items are optional.

The Labrador Whaling Co. has ordered a whaling steamship to be built in Norway, to replace the steamer Cachelot which was lost during last summer. The new vessel will bear the same name, but will be larger and stronger, and will be equipped with the latest patent gun, which is claimed to be a distinct advance on the weapon at present in general use. She will be ready in the spring, and will reach St. John's in time for next year's operations.

The Hilyard Dock and Construction Co. is applying for incorporation in New Brunswick, with a capital of $250,000 and office in St. John. Among the powers asked, are those for the building, owning and operating of steam and other vessels, wharves, docks, graving docks, etc., and to carry on a general transportation business. The applicants are, A. H. and G. A. Hilyard, G. G. Murdoch, W. H. Harrison and H. A. Powell, St. John.

The Dominion Government quarantine steamboat Alva, which has been built at Dartmouth, Eng., for the quarantine station at Halifax, N.S., arrived there Jan. 8, after a lengthy and stormy passage from England, which she left Nov. 22, via the Azores and Bermuda. Her dimensions are, length, extreme, 89¼ ft.; length from stem to stern post, 83½ ft.; beam, molded, 19 ft.; depth, 10 ft.; draft with 15 tons of water and 30 tons of coal, 8 ft. at stern and 6 ft. at bow. Her cost is $22,600. A full description was given in our Mar. 1910, issue.

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Province of Quebec Marine.

The Quebec Harbor Commission recently received tenders for the construction of a bascule, single track railway bridge.

The city of Quebec recently received tenders for the erection of a bascule span, or a swing bridge, to span the St. Charles River, in Limoilou ward.

The Richelieu and Ontario Navigation Co. will move its head office in Montreal, in March or April, to the building it has secured in Victoria Square, where it will occupy five of the seven stories, the remaining two being let as offices.

The Department of Marine has arranged for a series of lectures to be given on subjects connected with navigation, seamanship, rules of the road, etc., for the benefit of candidates who wish to qualify for the examination of masters and mates.

Aqueducts, Ltd., has been incorporated under the Dominion Companies Act, with a capital of $100,000 and office at Quebec, Que., to carry on a general contracting business. The incorporators are, R. O. Sweeney, A. H. Hall, F. A. La Rue, J. B. Churchill, and A. Leofred, Quebec.

The Department of Marine will receive tenders, to Feb. 15, for the construction of a twin screw steel steamer for survey and inspection work in connection with the St. Lawrence River ship channel, to be delivered at Quebec, to the following leading dimensions: length, between perpendiculars, 130 ft.; breadth, molded, 27 ft.; depth, molded, 13½ ft.; draught, mean, 9½ ft. It is reported that this vessel will be named Bellechasse.

On the re-opening of navigation, the light shown from the lighthouse on the outer end of the Government wharf on the south side of Crane island in the St. Lawrence River, below Quebec, will be changed from its present occulting characteristic, to fixed white. The apparatus will remain dioptric to the fourth order, but the light will be reinforced in the downstream range by reflectors. The light is produced by vaporized petroleum burned under a mantle.

The Dominion Premier, in a recent interview at Quebec, is reported to have stated that when the Marine Department's workshops at Quebec, were removed from their present location, they would be installed at the mouth of the St. Charles river, or thereabouts. He also stated that the reorganization of the Quebec Harbor Commission, on the lines adopted in connection with the Montreal Harbor Commission, was under consideration.

The Minister of Marine had a conference recently with representatives of ocean steamship companies, and the Pilots' Association, with reference to a proposal contained in a bill to be presented to Parliament, to provide that lake vesels should have the privilege of navigating the St. Lawrence ship channel without a pilot. The representatives present, it is stated, are opposed to the proposal.

Press reports from Ottawa state that the Government has decided to pay a subsidy on a first class dry dock at Montreal, providing the promoters vary their application. It is stated that this has been agreed to by all concerned, and that contracts for the work will be signed shortly. On a first class dock, the Subsidy Act provides for an annual payment of 3½%, for 35 years, on a maximum of $4,000,000, and although it is said that the subsidy granted may not reach this figure, the work will be in the first class. The same report states that the proposal to construct a dry dock at Levis appears to be in suspense for the present.

The Fraserville Navigation Co.'s s.s. Canada was offered for sale at the end of January, under an order of the Quebec Admiralty Court, on behalf of Mrs. G. St. Pierre. The matter has been before the courts for some time, a seizure being placed on the vessel in favor of G. St. Pierre, last October, for $12,000 on a second mortgage, there being also a first mortgage for $20,000, and a third mortgage for $5,000. The vessel, formerly known as Pro Patria, was built at Kinghorn, Scotland, in 1892. She is equipped with engine of 131 n.h.p., driving a screw, her dimensions being, length, 185.5 ft., breadth 27.2 ft., depth 19.5 ft.; tonnage, 701 gross, 449 register.

The Montreal Harbor Commissioners are proceeding with preparatory work in connection with the construction of a dry dock in the harbor. The site is opposite Molson's Creek, the distance from the shore, at this point, to the ship channel, being about 2,500 ft., the dry dock site and protection works projecting from the shore, about half that distance. The land which is to be reclaimed, will be filled with material dredged from the basin and approach from the ship channel. The dock will be of the floating type, with a capacity of over 25,000 tons, the cost of this and the ship repairing plant, being in the neighborhood of $4,000,000. The approach from the channel will give ample room for waiting vessels to anchor, and to turn, if necessary to proceed down channel. The centre of the dock basin requires a depth of 50 ft., while the remainder will be made the same depth as the ship channel. The dimensions of the dock, as shown on the plan, are, length, about 650 ft., breadth, about 130 ft., and it will be built in sections, so that smaller vessels will not require the whole dock to be utilized.

Ontario and the Great Lakes.

The New Liskeard board of trade decided recently to ask the Dominion Government that work on the construction of the new dock there be started immediately. The estimate for the dock and harbor facilities is $18,000.

The Owen Sound Dredge and Construction Co., Ltd., is applying to the Legislature for the acceptance of the surrender of its charter, as it has parted with its property, divided its assets rateably amongst its shareholders, and has no debts nor liabilities.

The Western Dry Dock and Shipbuilding Co.'s dry dock at Port Arthur was recently completed and put into operation. A number of the shops comprising the ship building plant are in course of erection, and it is anticipated that the whole will be completed in the early spring.

The Toronto harbor master reports that during 1910 3,402 vessels arrived, an increase of 461 over 1909. At the commencement of the year there was a cash balance in hand of $13,954.96, which, with receipts during the year of $14,891.70, less expenses, $13,425.51 leaves a balance in hand of $15,321.15.

The Public Works Department received tenders, Jan. 30, for the construction of a breakwater at Port Burwell, 1,200 ft. long, 30 ft. wide and 8 ft. above low water, sunk in a dredged berth 23 to 25 ft. below the low water line. The substructure is to be of timber crib work filled with stone, and the superstructure of concrete.

At the recent annual meeting of the Turbine Steamship Co. in Hamilton the usual routine business was conducted. Following are the officers and directors for the current year: President, J. C. Eaton; Vice President, R. Y. Eaton; Secretary-Treasurer, J. J. Vaughan; Manager, J. A. Goodearle; other directors, H. McGee and T. A. McCrea.

The Inland Lines steamboat Dunelm, which it was intended to dock at the Port Arthur dry dock for overhauling and repairs, after the wreck at Isle Royale, Dec. 7, when she was abandoned to the underwriters, has been tied up at the King elevator dock, where she will remain for the winter on account of the ice.

The U.S. Lake Survey reports the levels of the Great Lakes, during December, in feet above tide water, as follows: Superior, 601.50; Michigan and Huron, 579.51; Erie, 571.19; Ontario, 244.89. As compared with the average December levels for the past 10 years, Superior was 1.11 ft. below; Michigan and Huron 0.80 ft. below; Erie 0.52 ft. below, and Ontario 0.47 ft. below. It was anticipated that during January, Superior would fall 0.3 ft., Michigan and Huron 0.2 ft., and Erie and Ontario remain stationary.

Jas. Playfair, President Inland Lines Ltd., Midland, is negotiating with the shareholders of the Northern Navigation Co., to acquire their shares, and has offered to purchase the whole of the stock at $125. The Northern Navigation Co. has a paid up capital of $1,000,000, which, the directors were authorized at the last annual meeting, to increase to $1,500,000, the additional capital to be issued as required. The question was to come up for discussion at the annual general meeting of shareholders, Jan. 31.

Montreal press reports of Jan. 20 stated that negotiations were pending for the amalgamation of several large navigation companies, with the Richelieu & Ontario Navigation Co. interests in control. It is stated that preliminary matters have already been discussed with certain companies, and that, among others, overtures have been made to the Niagara Navigation Co., R. Forget, President R. & O.N. Co., subsequently stated that while there was some talk of a merging of navigation companies, nothing had been decided.

The Hamilton Steamboat Co.'s annual meeting was held at Toronto, Jan. 4, and a dividend of 10% was declared for the past year. Following are the officers and directors for the current year: President, J. C. Eaton; Vice President, R. Y. Eaton; Secretary-Treasurer, J. J Vaughan; Manager, W. E. Bishop; other directors, H. McGee, C. Booth and T. A. McCrea. The officers of the company's steamboats for the forthcoming season will be: Macassa, captain, J. Henderson; chief engineer, O. Flumerfelt; Modjeska, captain, P. Walsh; chief engineer, W. Noonan.

Application is being made to the Dominion Parliament to incorporate the Western Canal Co., to construct a canal from the Rainy River, below Fort Frances, Ont., to the Rainy River, five miles below the Long Sault Rapids; to carry on the business of forwarding and manufacturing; to erect and operate telegraph and telephone lines; to transmit electrical energy, and for the purposes of such canal and waterway construction and operation, to exercise all the powers and rights of the Railway Act, and with power to amalgamate with other companies. Smith and Johnston, Ottawa, are solicitors for applicants.

A proposal has been mooted in Toronto recently to construct a canal from Goderich to Hamilton, 35 ft. deep and 300 ft. wide, which, with the deepening of the St. Lawrence canals, would enable vessels to pass right up to Fort William and Chicago. A. P. Gillies, when interviewed on the subject in Toronto, recently, said that the matter would be brought to the attention of the Dominion and Ontario Governments, and the municipal and local bodies concerned, and even if their assistance was refused, the Canadian National Canal Co. was determined to carry out the scheme on its own responsibility. He has been interested in several large schemes, more or less visionary, a recent one being the establishment of a large terminal system in Toronto for handling all the railway traffic entering and passing through the city.

The Inland Lines s.s. Emperor, which was launched at Collingwood, recently, is 525 ft. long, 56 ft. beam, 31 ft. deep, and has been built with heavy double bottom and double sides, on the arch and web frame system. The pilot house and captain's and mates' quarters are at the forward end, and boiler and engine rooms at the stern. Between these the deck space is clear of spars and superstructures, and has 30 hatches, 9 ft. clear, with centres of 12 ft., with ore chute at each hatchway. The side ballast and water bottom tanks are directly connected with large steel pipes, with a combination header connected to sea valves and ballast pump. She is equipped with triple expansion engines, with cylinders 23, 38½ and 63 ins. diar. by 42 ins. stroke, supplied with steam by two Scotch boilers, 15½ by 12 ft., at a pressure of 180 lbs. a square inch.

Application is being made to the Dominion Parliament to incorporate the Nipigon, Albany Canal and Transportation Co., to build and operate a canal, waterway and transportation system from Nipigon Bay on Lake Superior, by way of the Nipigon River and Lake Nipigon, northerly to and along the Albany River to James Bay, and to utilize, deepen, widen and alter the course of waterways in the route; to build or otherwise acquire and operate steam and other vessels, wharves, docks, terminals and other facilities for the development of the undertaking. Power is also sought to carry on telegraph, telephone, express, warehousing, forwarding, hotel and other business, and to exercise the rights granted by the Railway Act, and that the work be declared to be for the general advantage of Canada. A. T. Thompson, Ottawa, is solicitor for applicants.

The Peterborough and Lake Simcoe Navigation Co., Ltd., the incorporation of which was announced in a recent issue, has taken over the steamboats recently operated by the Otonabee Navigation Co., and named Manita, Monarch, Otonabee and Water Lily. The route over which these vessels will be run on the re-opening of navigation, covers Lakes Simcoe, Scugog, Sturgeon, Cameron, Balsam, Pigeon, Bald, Sandy, Buckhorn, Chemong, Deer, Lovesick, Stony, Clear, Katchewanooka, and Rice Lake, 20 miles down the Otonabee River from Peterboro, aggregating over 150 miles. An issue of cumulative preference stock at 7%, to the amount of $75,000 in $100 shares, has been put on the market. R. Pinchin, formerly interested in the Otonabee Navigation Co., is Manager, and the other directors are W. A. Cressman, T. F. Matthews, W. H. Robertson, Peterboro; J. H. Brandon, Fenelon Falls, and W. H. Smith, Toronto.

The Ontario and Quebec Navigation Co., Ltd., which was recently incorporated, has been organized to take over the businesses and vessels of the former Ontario and Quebec Navigation Co., Ltd., and the Quinte Navigation Co. The O. and Q.N. Co., owned the steamboats Aberdeen, Alexandria, Lloyd S. Porter, and Water Lily, and the Q.N. Co. owned the steamboats Aletha, Brockville, Varuna and Where Now, running on Bay of Quinte waters, between Picton, Belleville, Deseronto, Trenton and Kingston. An order has been given for the construction of another steamboat, which will be operated between Toronto, Charlotte, Montreal and Quebec, during the coming season. Following are the officers and directors for the current year: President and General Manager, B. R. Hepburn; Vice President, J. F. Chapman, General Freight and Passenger Agent Rathbun Lines; General Freight and Passenger Agent, J. D. Hepburn; other directors, W. V. Cooper, A. Leslie, H. Dempsey.

The Toronto city council, in accordance with a recent vote of the ratepayers, is applying to the Dominion Parliament to change the constitution of the Harbor Commission so as to provide that hereafter the board shall consist of five members, three to be appointed by the city council, one by the Governor-in-council, on his own motion, and one on the recommendation of the Toronto Board of Trade, each for three years, with powers for removal and withdrawal. It is also provided that the board may take and hold the management of Ashbridge's bay, with the dock property and water lots owned by the city in the harbor, and along the east and west shores to the city limits, with the docks and shores on the island property, as far as is necessary for the protection and development thereof, and the regulation for the use of vessels. Power is also being sought to build docks, channels, railway tracks, equipment, etc., for carrying on a harbor and transportation business, and to levy harbor rates, tolls, etc., to be approved by the Governor-in-council, on all goods landed or shipped in the harbor, or moved on the harbor tracks, and to commute any such rates. It is also being asked that the commission shall have power to pass bylaws for the regulation and control of navigation and all works and operations within the harbor, to regulate building operations, deposit of material, pipes or conduits, to impose penalties for infringement of such bylaws, and for other purposes.

The Great Lakes and Atlantic Canal and Power Co. is asking the Dominion Parliament for incorporation, with power to build a canal from the eastern shore of Lake Huron, in Huron county, Ont., to the northern shore of Lake Erie, in Elgin county, and another canal from the northeastern shore of Lake Erie, in Haldimand county, to the western shore of Lake Ontario, in or near Lincoln county; to improve and deepen, if necessary, a channel in Lake Ontario and the St. Lawrence River, to or near Grenville county; to build a canal from or near Grenville county to the Ottawa River, near Ottawa; to improve and deepen a ship channel in the Ottawa River from the canal to its junction with Riviere des Prairies; to improve and deepen the channel in the Riviere des Prairies to join the St. Lawrence ship channel below Montreal Island, at or near Varennes, or by an alternative route, if deemed of better advantage, from St. Ann's, in Jacques Cartier county, Que., through Lake St. Louis to Montreal, with power to make surveys and determine the location of the waterway, whether canal or ship channel, and carry out such works, so as to complete a waterway from Lake Huron to the St. Lawrence ship channel or Montreal, of not less than 28 ft., and not over 33 ft. depth, and of such width as may be found necessary to enable ocean going vessels to meet and pass in safety at any point; to construct, own and operate wharves, docks, terminals, warehouses, elevators, tramways, steam and other vessels, dry docks, ship building plants, and to enter into agreements with the Government respecting subsidies and exemption from duty on articles used in the construction of such work, and for other purposes.

Manitoba, Saskatchewan and Alberta.

The Prince Albert, Sask., ratepayers have voted $26,000 for the building of a steamboat, and some barges, for hauling building materials on the Saskatchewan River for various city works.

A number of vessels of various types for navigation on the Red River, are reported to be under construction at Winnipeg, by the Hyland Navigation and Trading Co., the Eli Sand Co., and other companies.

The Moosonee Development Co., Ltd., has been incorporated under the Manitoba Companies Act, with a capital of $20,000 and office at Winnipeg, to acquire certain lands in the province, and to develop same; to build, own and operate steam and other vessels from its lands to a place on an existing or established railway, and to build wharves, docks, tramways, telegraph lines, etc., in connection therewith. The incorporators are, G. A. Elliott, A. C. Miller, F. J. Campbell, F. C. Kennedy, R. W. Wydeman, Winnipeg.

B.C. and Pacific Coast Marine.

The name of the G.T.P. Coast Steamship Co.'s s.s. Bruno was officially changed to Prince Albert, Jan. 3.

The Washington Tug and Barge Co of Seattle, Wash., has been licensed to carry on its business in British Columbia, with D. Donahy, Vancouver, as attorney.

The repairs on the C.P.R. s.s. Princess May, which ran aground on Sentinel Island last summer, have been completed, and she has been again put into service.

The Canadian North Pacific Fisheries Co. is reported to have five whaling vessels on the way from Norway to the Pacific coast, for operation during the coming season.

The recently arrived C.P.R. s.s. Princess Adelaide has been overhauled after her voyage from Great Britain, and has been put on her route. Capt. Hunter of the company's s.s. Charmer has been appointed to the Princess Adelaide.

The C.P.R. s.s. Princess Mary was reported at Coronel, about the middle of January, on her way from Great Britain to the B.C. coast. It was expected she would call at Callao, where she would coal for her final run to Victoria.

Capt. M. B. Wilson, for some time connected with the Liverpool Salvage Association, and a number of large salvage matters on the Pacific coast, has been appointed Manager of the British Columbia Salvage Co., Esquimalt.

The G.T.P.R. is reported to have purchased the Albion Ironworks site and waterfront lot at Vancouver, where it is proposed to build wharves and other accommodation for handling of G.T.P. steamship business.

Press reports from Nelson state that the C.P.R. has arranged to build an all steel car transfer barge to hold 15 of the heaviest cars on the system, to be used in the Proctor and Kootenay Landing service, at a cost of about $68,000.

The C.P.R. s.s. Princess Adelaide, which recently arrived on the coast from Great Britain, has been placed in service, relieving the Princess Royal. A full description of this vessel was given in our Apr., 1910, issue.

A steam tug, unnamed, has been built at Lulu Island, for the logging business at Cracroft. Her dimensions are: length, 55 ft.; breadth, 11 ft.; depth, 5 ft. The machinery which has been installed was taken from the tug Gypsy.

The Kyax Navigation Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of $25,000, to build, purchase or otherwise acquire and operate steam and other vessels, and to carry on a general transportation business.

Wallace Fisheries, Ltd., has been incorporated under the B.C. Companies Act, with a capital of $2,000,000, to carry on a general fisheries business, and in connection therewith to own and operate steam and other vessels of every description.

The arrangements whereby the G.T.P. Steamship Co.'s s.s. Prince Rupert were chartered for a trip to the Hawaiian Islands, in the spring, have been cancelled, the Seattle, Wash., parties responsible for the excursion not having complied with the conditions agreed to.

The B.C. Telephone Co. has prepared plans for a cable repair steamer, which it proposes to build for its repair service, at a cost of about $35,000. The hull will, it is said, be built in the province, and the equipment purchased in England.

The Marine Department's s.s. Newington, which returned to Victoria Jan. 4, after replacing several missing buoys, and placing a spar buoy at the entrance to the inner harbor, has been dispatched to Nootka Sound, where a lighthouse is under construction.

The plans for the dry dock, which the

G.T.P.R. proposes to build at Prince Rupert, have been filed with the Dominion Public Works Department. They provide for a dock of the second class, at a cost of about $2,000,000, which will carry a subsidy of 3½% for 25 years.

The order for the construction of the Marine Department's lighthouse and buoy steamer Estevan, for the British Columbia coast service, has been placed in Collingwood, Ont. The contract price is stated to be $260,000. A full description was given in our Nov., 1910, issue.

The Evans, Coleman Wharf Co., Ltd., registered under the B. C Companies Act, Sept. 5, 1905, passed a resolution, recently, to voluntarily wind up the company's affairs. A company of the same name has recently been incorporated under the B.C. Companies Act, as announced in our Dec. 1910 issue.

The dredge which the Dominion Public Works Department recently ordered in Glasgow, Scotland, for the widening of the channel in the Narrows, is reported to be on the way to the coast, where she is expected about the end of February. The width of the channel is to be increased from about 1,200 ft. at its narrowest, to about 2,400 ft. at its widest.

C. H. Nicholson, Manager G.T.P. Steamship Co., is reported to have stated recently that a representative is at present in Great Britain looking for a suitable vessel for use between Prince Rupert and Queen Charlotte Islands. The desired vessel will have first class passenger accommodation, and will be somewhat smaller than the company's s.s. Prince Albert.

The Canadian North Pacific Fisheries Co. has purchased the s.s. Petriana from the Northern Navigation Co., for use as a tender for its whaling stations. She has recently had her accommodation increased by the addition of four staterooms, and electric light apparatus, with a powerful searchlight has been installed. She was built at Workington, Eng., and has a single screw driven by triple expansion engines, developing 1,000 h.p. Her dimensions are: length, 182.7 ft.; breadth, 27.9 ft..; depth, 12.3 ft.; tonnage, 700 gross, 289 register.

The Westham Steamship Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of $5,000, to acquire and operate the steamship Westham; to own and operate steam and other vessels of all descriptions and to carry on a general ship owning and transportation business. The Westham is a screw driven vessel, with engine of 10 n.h.p., and is registered at New Westminster, where she was built in 1909. Her dimensions are: length, 85.3 ft.; breadth, 22 ft.; depth, 8.3 ft.; tonnage, 199 gross, 126 register.

The Purchasing Agents' Guide

To the Manufacturers of and Dealers in Steam and Electric Railway, Marine, Grain Elevator, Express, Telegraph, Telephone and Contractors' Supplies, &c.

Acetylene
Commercial Acetylene Co.........Toronto.

Aerated Waters
E. L. Drewry ....Winnipeg.

Air Brakes and Fittings
Allis-Chalmers-Bullock Ltd. ....Montreal.
Canadian Westinghouse Co. Hamilton, Ont.

Ales
E. L. Drewry ....Winnipeg.

Alloys
American Vanadium Co....Pittsburg, Pa.

Angle Bars
Hamilton Steel & Iron Co..Hamilton, Ont.
Montreal Rolling Mills Co.......Montreal.
Nova Scotia S. & C. Co., New Glasgow, N.S.

Anti Rail Creepers
The Holden Co., Ltd............Montreal.

Automobiles
Preston Car & Coach Co...Preston, Ont.

Axes
James Smart Mfg. Co.....Brockville, Ont.

Axles
Canadian Car & Foundry Co....Montreal
Hamilton S. & I. Co., Ltd., Hamilton, Ont.
James Hutton & Co. ....Montreal.
Nova Scotia S. & C. Co., New Glasgow, N.S.
Jas. W. Pyke & Co.............Montreal.

Babbit Metal
Tallman Brass & Metal Co., Hamilton, Ont.

Beacons
International Marine Signal Co....Ottawa.

Bearings, Side
Canadian Car & Foundry Co....Montreal.
Chicago Railway Equipment Co..Chicago.

Blankets and Bedding
The Hudson's Bay Co. ....

Boiler Checks
Nathan Manufacturing Co......New York.

Boilers
Babcock & Wilcox, Ltd.........Montreal.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S

Boilers, Portable
Babcock & Wilcox, Ltd.........Montreal.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Boilers, Stationary and Marine
Babcock & Wilcox, Ltd.........Montreal.
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Boiler Staybolt Iron or Steel Bars
Falls Hollow Staybolt Co..Cuyahoga Falls.

Boilers, Steam
Babcock & Wilcox, Ltd.........Montreal.
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S

Boilers, Water Tube
Babcock & Wilcox, Ltd.........Montreal.
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S

Bolsters
Canadian Car & Foundry Co....Montreal.
Canadian Ry. Equipment Co., Welland, Ont.

Bolts, Bridge
Montreal Rolling Mills Co.......Montreal.

Bolts, Track
Montreal Rolling Mills Co.......Montreal
Nova Scotia S. & C Co., New Glasgow, N.S.

Borers, Car Wheel
John Bertram & Sons Co....Dundas, Ont.

Braces, Cross Arm
Montreal Rolling Mills Co.......Montreal.

Brake Beams
Canadian Car & Foundry Co....Montreal.
Chicago Railway Equipment Co..Chicago.

Brake Shoes
Am. Brake Shoe & F'dry Co., Mahwah, N.J.
Canada Iron Corporation, Ltd..Montreal.
The Holden Co., Ltd............Montreal.

Brake Shoes, Locomotive Driver
Am. Brake Shoe & F'dry Co., Mahwah, N.J.
Canada Iron Corporation, Ltd..Montreal.
Railway Materials Co. .... ..New York.

Brass and Copper Cloth
The B. Greening Wire Co..Hamilton, Ont.

Brasses, Car
T. McAvity & Sons ....St. John, N.B.

Bridge Numbers
Acton Burrows, Limited ....Toronto.

Bridges
Canadian Bridge Co.....Walkerville, Ont.
Dominion Bridge Co.............Montreal.

Bronze
American Vanadium Co....Pittsburg, Pa.

Buckets, Coal, Ore and Concrete
M. Beatty & Sons, Ltd....Welland, Ont.
Brown Hoisting Machinery Co., Cleveland.
Williams & Wilson, Ltd ....Montreal.

Buildings, Steel
Canadian Bridge Co.....Walkerville, Ont.
Dominion Bridge Co.............Montreal.

Bumping Posts
Dominion Equip. & Supply Co., Winnipeg.
The Holden Co., Ltd............Montreal.
McCord & Co. ....Chicago, Ill.

Buoy Lighting
Safety Car Heat. & Light. Co..New York.

Buoys
International Marine Signal Co....Ottawa.

Cables, Electric and Feeder
Chapman & Walker, Ltd........Toronto.
E. F. Phillips Electrical Works.Montreal.
The Wire and Cable Co..........Montreal.

Caps, Uniform
W. H. Coddington ....Hamilton, Ont.

Car Furnishings
Guilford S. Wood..............Chicago, Ill.

Car Loaders, Box
Mussens, Ltd. ....Montreal.

Car Movers
F. H. Hopkins & Co..............Montreal.
Mussens, Ltd. ....Montreal.

Cars
Crossen Car Mfg. Co........Cobourg, Ont.
Canadian Car & Foundry Co....Montreal.
J. T. Gardner ....Chicago, Ill.
Hart-Otis Car Co., Ltd.........Montreal.
The Males Co., ... Cincinnati, O.
Ottawa Car Co., Ltd..............Ottawa.
Pay-As-You-Enter Car Co....New York.
Preston Car and Coach Co., Ltd..Preston.
Russel Wheel & Fdry Co...Detroit, Mich.
Silliker Car Co., Ltd........Halifax, N.S.

Cars, Logging
Peteler Car Co. ....Minneapolis, Minn.
Russel Wheel & Fdry Co...Detroit, Mich.

Castings
Edgar Allen & Co., Ltd. .... Montreal.
American Vanadium Co....Pittsburg, Pa.
Canadian Car & Foundry Co....Montreal.
Crossen Car Mfg. Co........Cobourg, Ont.
John Inglis Co., Ltd. ....Toronto.
Lumen Bearing Co.....West Toronto, Ont.
I. Matheson & Co......New Glasgow, N.S.
Russel Wheel & Fdry Co...Detroit, Mich.
Standard Steel Works Co..Philadelphia, Pa.

Castings, Brass
Canadian Bronze Co. ....Montreal.
Canada Iron Corporation, Ltd...Montreal.
Kerr Engine Co. ....Walkerville, Ont.
Lumen Bearing Co.....West Toronto, Ont.
Tallman Brass & Metal Co., Ltd.Hamilton.

Castings, Car
Edgar Allen & Co., Ltd. .... Montreal.
Am. Brake Shoe & F'dry Co., Mahwah, N.J.
Canada Iron Corporation, Ltd...Montreal.
Russel Wheel & Fdry.. Co..Detroit, Mich.

Castings, Iron
Allis-Chalmers-Bullock Ltd. ....Montreal.
Canada Iron Corporation, Ltd...Montreal.
Kerr Engine Co..........Walkerville, Ont.
Russel Wheel & Fdry.. Co..Detroit, Mich.

Castings, Iron and Steel
Edgar Allen & Co., Ltd. .... Montreal.
Am. Brake Shoe & F'dry Co., Mahwah, N.J.

Castings, Malleable
Galt Malleable Iron Co.........Galt, Ont.
Taylor & Arnold ....Montreal.

Castings, Manganese Steel
Edgar Allen & Co., Ltd. .... Montreal.
Lumen Bearing Co.....West Toronto, Ont.
Montreal Steel Works, Ltd......Montreal.

Castings, Steel
Edgar Allen & Co., Ltd. .... Montreal.
American Vanadium Co....Pittsburg, Pa.
Canada Iron Corporation, Ltd..Montreal.
W. Kennedy & Sons, Ltd., Owen So'd, Ont.
Montreal Steel Works ....Montreal.

Chains
B. J. Coghlin & Co..............Montreal.

Chisels for Pneumatic Chipping Hammers
Edgar Allen & Co., Ltd. .... Montreal.
Cleveland Punch & Shear Wks., Cleveland.

Closets, Car
Duner Co. ....Chicago, Ill.

Coal
Nova Scotia S. & C. Co., New Glasgow, N.S

Compressors, Air
Allis-Chalmers-Bullock Ltd. ....Montreal.
The American Well Works...Aurora, Ill.
Canadian Rand Co. ....Montreal.
The Holden Co., Ltd............Montreal.
John Inglis Co., Ltd. ....Toronto.
Vandeleur & Nichols ....Toronto.

Concrete Mixers and Rock Crushers
Edgar Allen & Co., Ltd. .... Montreal.
F. H. Hopkins & Co............Montreal.
Mussens, Limited ....Montreal.

Contractors' Supplies
F. H. Hopkins & Co............Montreal.
Rice Lewis & Son................Toronto.
Peteler Car Co. ......Minneapolis, Minn.
Russel Wheel & Fdry.. Co..Detroit, Mich.
Williams & Wilson, Ltd .... Montreal.

Conveyors, Coal and Ash
Babcock & Wilcox, Ltd.........Montreal.
Williams & Wilson, Ltd ....Montreal.

Copying Presses
James Smart Mfg. Co.....Brockville, Ont

Couplers, Car and Locomotive
Canadian Car & Foundry Co...Montreal.
McConway & Torley Co....Pittsburg, Pa.
Montreal Steel Works, Ltd.....Montreal.
Taylor & Arnold ....Montreal.

Couplers, Steam
Consolidated Car Heating Co., Albany, N.Y

Cranes
Brown Hoisting Machinery Co..Cleveland.
Northern Engineering Wks..Detroit, Mich.
Williams & Wilson, Ltd ....Montreal.

Cranes, Electric
Babcock & Wilcox ....Montreal.
Dominion Bridge Co. ....Montreal.
Mussens, Limited ....Montreal.
Northern Engineering Wks, Detroit, Mich.

Cranes, Locomotive
The Males Co., ... Cincinnati, O.

Cranes, Wrecking
Mussens, Limited ....Montreal.

Crowbars
B. J. Coghlin & Co..............Montreal.

Curtains and Fixtures, Car
The Holden Co., Ltd............Montreal.
Preston Car & Coach Co...Preston, Ont.

Cuts
Acton Burrows, Limited ....Toronto.

Cylinders
American Vanadium Co....Pittsburg, Pa.

Derricks
M. Beatty & Sons ....Welland, Ont.
Mussens, Limited ....Montreal.

Diaphragms, Vestibule
Guilford S. Wood..............Chicago, Ill.

Dies
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co. ......Hespeler, Ont.

Ditchers
M. Beatty & Sons ....Welland, Ont.

Diving Outfits
John Date ....Montreal.
Mussens, Limited ....Montreal.

Doors, Steel Rolling
Mussens, Limited ....Montreal.

Door Signs
Acton Burrows, Limited ....Toronto.

Draft Gear
The Holden Co., Ltd............Montreal.
McCord & Co. ....Chicago, Ill.
Standard Coupler Co.....New York City.
T. H. Symington & Co.....Baltimore, Md.

Draughtsmen's Supplies
John A. Hart & Co ....Winnipeg.

Dredges
M. Beatty & Sons ....Welland, Ont.
Polson Iron Works, Ltd.........Toronto.

Drills, Air
Canadian Rand Co...............Montreal.

Drills, Flat Twisted
Cleveland Punch & Shear Wks., Cleveland.

Dry Goods
The Hudson's Bay Co.......................

Dump Cars, Contractors'
Dominion Equip. & Supply Co., Winnipeg.
F. H. Hopkins & Co............Montreal.
Peteler Car Co. ......Minneapolis, Minn.
Western Wheeled Scraper Co..Aurora, Ill.

Dump Cars, Hand
Meaford Wheelba'ow Co., Ltd., Meaf'd, Ont.

Dynamos
Northern Electric & Mfg. Co.....Montreal.
Vandeleur & Nichols ....Toronto.

Dynamo and Electric Castings
Am. Brake Shoe & F'dry Co., Mahwah, N.J.

Economizers
Babcock & Wilcox, Ltd..........Montreal.

Electric Apparatus
Allis-Chalmers-Bullock Ltd. ....Montreal.
Chapman & Walker, Ltd........Toronto.
Northern Electric & Mfg. Co.....Montreal.
Vandeleur & Nichols ....Toronto.

Electric Car Route Signs
Acton Burrows, Limited ....Toronto.
Preston Car & Coach Co...Preston, Ont.

Electric Light Plant
Allis-Chalmers-Bullock Ltd. ....Montreal.

Elevators, Grain
John S. Metcalf Co. ....Chicago, Ill.

Enameled Iron Signs
Acton Burrows, Limited ....Toronto.

Engines, Automatic
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Russel Wheel & Fdry Co..Detroit, Mich.

Engines, Corliss
Allis-Chalmers-Bullock Ltd. ....Montreal.
John Inglis Co., Ltd. ....Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Engines, Gas
Allis-Chalmers-Bullock Ltd. ....Montreal.
Vandeleur & Nichols ....Toronto.
Williams & Wilson, Ltd ....Montreal.

Engines, Gasolene
Canadian Fairbanks Co., Ltd...Montreal.
Ontario Wind Engine & Pump Co. Toronto.
Vandeleur & Nichols ....Toronto.

Engines, Hoisting
Allis-Chalmers-Bullock Ltd. ....Montreal.
M. Beatty & Sons ....Welland, Ont.
Dominion Equip. & Supply Co., Winnipeg.
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Russel Wheel & Fdry. Co..Detroit, Mich.
Williams & Wilson, Ltd ....Montreal.

Engines, Pumping
John Inglis Co., Ltd. ....Toronto.

Engines, Stationary and Marine
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Engines, Stationery, Appliances
Nathan Manufacturing Co......New York.

Engines, Steam
Allis-Chalmers-Bullock Ltd. ....Montreal.
Vandeleur & Nichols ....Toronto.

Explosives
Standard Explosives, Limited ..Montreal.

Express Office Signs
Acton Burrows, Limited ....Toronto.

Fencing
Owen Sound Wire Fence Co., Ltd., O'n S'd.

Ferro-Vanadium
American Vanadium Co. ..Pittsburg, Pa.

Fire Appliances
Missouri Lamp & Mfg. Co., St. Louis, Mo.

Flags
The Hudson's Bay Co.......................

Flour
The Hudson's Bay Co.......................

Forgings
Edgar Allen & Co., Ltd. .... Montreal.
American Vanadium Co. ..Pittsburg, Pa.
Canadian Car & Foundry Co...Montreal.
Cleveland City Forge & Iron Co., Cleveland.
Crossen Car Mfg. Co........Cobourg, Ont.
Nova Scotia S. & C. Co., New Glasgow, N.S.
Standard Steel Works Co., Philadelphia, Pa.
Steel Co. of Canada, Ltd. ..Hamilton, Ont.

Foundry Appliances
Goldschmidt Thermit Co. ....Toronto.
Ont. Wind Eng. & Pump Co., Ltd., Toronto.

Frames, Steel for Cars
Canadian Ry. Equip't Co., Welland, Ont.

Frogs
Canadian Ramapo Iron Wks.Niagara Falls.
Peteler Car Co. ......Minneapolis, Minn.

Furnaces, Corrugated
Continental Iron Works....Brooklyn, N.Y.

Furnaces, Oil
Railway Materials Co. ....New York.

Furnaces, Shop
Railway Materials Co. ....New York.

Fuse Batteries
Standard· Explosives Limited...Montreal.

Fuse Datonators
Standard Explosives Limited...Montreal.

Fuses, Electric
Standard Explosives Limited...Montreal.

Gaskets
The Holden Co., Ltd............Montreal.
McCord & Co. ....Chicago, Ill.

Gates
Owen Sound Wire Fence Co., Ltd., O'n S'd.

Gates, Crossing
The N. L. Piper Ry. Supply Co...Toronto.

Gauge Cocks
Nathan Manufacturing Co......New York.

Gauges, Locomotive
Taylor & Arnold ....Montreal.
Utica Steam Gauge Co...........New York.

Gauges, Water
Nathan Manufacturing Co......New York.

Gears
American Vanadium Co. ..Pittsburg, Pa.

Generators, Electric
Northern Electric & Mfg. Co.....Montreal.

Grates, Shaking
Babcock & Wilcox, Ltd..........Montreal.
Polson Iron Works, Ltd.........Toronto.
Vandeleur & Nichols ....Toronto.

Groceries
The Hudson's Bay Co.......................

Hammers, Cast Steel
American Brake Shoe & Fdry Co.Mahwah.
James Smart Mfg. Co....Brockville, Ont.

Handcars
Canadian Fairbanks Co., Ltd...Montreal.
Crossen Car Mfg. Co........Cobourg, Ont.
Dominion Equip. & Supply Co., Winnipeg.
F. H. Hopkins & Co............Montreal.
Mussens, Limited ....Montreal.
Rice Lewis & Son...............Toronto.

Hardware
The Hudson's Bay Co.......................
Rice Lewis & Son...............Toronto.

Hats
W. H. Coddington.........Hamilton, Ont.

Headlights
Commercial Acetylene Co.........Toronto.
The N. L. Piper Ry. Supply Co...Toronto.
Pyle National Elec. Headlight Co..Chicago.

Headlinings
Crossen Car Mfg. Co.......Cobourg, Ont.

Heaters, Feedwater
Robb Engineering Co., Ltd..Amherst, N.S.

Heaters, Oil-burning
Tate, Jones & Co. Inc. ..... Pittsburg, Pa.

Heating, Car
Canadian Gold Car H'g & L'g Co..Montreal.
Consolidated Car Heating Co., Albany, N.Y.
Safety Car Heating & L'ting Co.New York.

Hoists, Pneumatic
Taylor & Arnold ....Montreal.

Hollow Staybolt Iron and Steel Bars
Edgar Allen & Co., Ltd. .... Montreal

Hoppers, Car, Wet or Dry
Duner Co. ....Chicago, Ill.

Hose, Air Brake and Steam
Guilford S. Wood..............Chicago, Ill

Hydrants
Canadian Fairbanks Co., Ltd...Montreal
Kerr Engine Co..........Walkerville, Ont

Illustrations
Acton Burrows, Limited..........Toronto

Injectors
T. McAvity & Sons ....St. John, N.B.
Nathan Manufacturing Co......New York.

Inspections
R. W. Hunt & Co...............Montreal.

Insurance, Accident
Can. Casualty & Boiler Ins. Co...Toronto.
Canadian Ry. Accident Ins. Co...Ottawa.
Imp. Guarantee & Acc. Ins. Co..Toronto.
London Guar. & Accident Co., Ltd.Toronto.

Insurance, Boiler
Can. Casualty & Boiler Ins. Co...Toronto.

Interlocking Plant and Signals
Montreal Steel Works, Ltd......Montreal.
Railway Signal Co. of Canada....Montreal.
Saxby & Farmer, Ltd...........Montreal.

Iron, Pig
Nova Scotia S. & C. Co., New Glasgow, N.S.

Iron Signs
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TORONTO, CANADA, MARCH, 1911.

For Subscription Rates, See page 241.

Lubrication of High Pressure Slide and Piston Valve Locomotives.

By W. O. Taylor.

With the lubricant properly introduced and distributed with the steam, the pressure and temperature of the steam, are factors of but little, if any, importance.

It is within the memory of many who are in active service today, when vegetable and animal oils were the sole lubricants for valves and cylinders. The introduction of a mineral cylinder oil in 1870 met with derision by some, scepticism by many, and it was received in confidence but by few. Of such superior merit, that long before its general introduction, a railway master mechanic made the statement in convention, that since its adoption as a substitute for tallow, the gain in power permitted the addition of one car to each train, it would have seemed an easy matter to induce the user of tallow to leave it for something better, but the change came about only through the persistent efforts of the manufacturer, and this statement applies to every user of steam, as well as to the railroads. How well has it been verified. "If we begin in certainties, we shall end in doubt, but if we begin with doubts, and are patient in them, we shall end in certainties." It has long since been demonstrated that the best of animal oils will rapidly decompose, their fatty acids corrode metal, and their gummy nature prove a source of danger as well as expense. That a viscous and cohesive mineral oil only, should be used in steam cylinders, and on hot rubbing surfaces, and that the price of an oil is of little importance in comparison with its friction reducing power.

Of the various terms which apply to all lubricating oils, gravity, viscosity, fire test, etc., explanation seems unnecessary; but as "flashing point" has become a byword with many since the use of steam of high temperature, it is pertinent to explain "flashing point" as the degree of temperature at which oils discharge vapor in sufficient quantity to mix with the air above the oil and produce a gas, which if brought in contact with a lighted match, or taper, will ignite and flash, hence "flashing point." The writer has witnessed a 550 degree test oil, passed through a cylinder in steam superheated to 1,000 degrees, and from the water of condensation recovered in its original condition. This test was in the laboratory, but it demonstrated that when protected by the steam the oil stood an excessive temperature, and that phenomenon of flashing, does not, and cannot occur while the oil is in the steam.

The function of a lubricant is to keep the rubbing surfaces apart; the determining quality of a lubricant is its ability to satisfactorily perform that function. The essential quality required is that of distribution over the surfaces to be lubricated. The best service from a valve or cylinder oil requires that it enter the steam chest thoroughly atomized, each drop being divided into thousands of minute drops, or atoms, as it reaches the rubbing surfaces. This is accomplished by a combination process of emulsification, vaporization, and atomization, and it follows that a first class cylinder oil must possess the qualities to readily emulsify and atomize, with a sufficient degree of vaporization to spread itself over the surfaces with the steam. In other words, to lubricate the steam..

W. A. Dube
Superintendent District 1, Intercolonial Railway.

Uniformity of distribution is as important as uniformity and continuity of supply. These are principles that apply to valve and cylinder lubrication, irrespective of type of valve or temperature of steam. The design of valve, the method of introducing the oil, are very important factors. It has been practically demonstrated that a flat or slide valve cannot be successfully used with very high temperature steam because of the heat warping the valve, presenting an uneven surface to the seat. Reference to this type of valve pertains to its use with saturated steam. With piston valves, where a very high initial pressure is used, or where superheated steam is used, which, because of a greater expansive force throughout the stroke, maintains a higher average pressure, even though the initial pressure may not be so high, the design of rings should be such as to avoid an excessive pressure behind them, forcing them against the walls of the valve chamber, which results in a loss of energy, and excessive wear of the rings. It has been found that when using steam at high temperatures the composition of the rings in both valves and cylinders is an important factor. A hard gray iron has given excellent results.

One of the world's great thinkers has said, "Men seek for truth in their own little world, and not in the great world about them." The average mind is prone to follow in the well beaten paths of the pioneers who blazed the trail. Precedent is the most available guide. It is only the restless spirit of the discoverer, or changed conditions that stimulate a new thought. The evolution of the locomotive has carried with it the progress from the earlier method of delivering the lubricant through the medium of a plug cup, located on top of the steam chest, to the more convenient location in the cab. The automatic displacement cup, located on top of the chest, has been superseded by the hydrostatic or mechanically operated lubricators, but it seems that because, in the infancy of the locomotive, from the top of the steam chest was the logical place to admit the lubricant, precedent rules that the old custom shall prevail, and at present, on a large percentage of locomotives in this country, the oil for valve and cylinder lubrication is delivered direct to the steam chest or valve chamber. "An obstinate adherence to custom, is as turbulent a thing as innovation." Is there a good reason for continuance of this practice, other than convenience, custom or precedent?

With the increase in steam pressure came the locomotives of increased valve and cylinder dimensions, a revolution in train service. and runs scheduled at higher speeds for long continued distances without closing of throttle. A new problem was presented. Precedent offered no solution. The revival of an old question, familiar to those who have seen the transition from tallow to mineral oil, the adaptability of the oil for the service, became a subject of discussion, and "flash point" was freely handled by many who have never given it thought before. Some not even knowing its significance. "Those who take in but few considerations easily decide." The lubricator and the oil manufacturers were placed on the defensive. In

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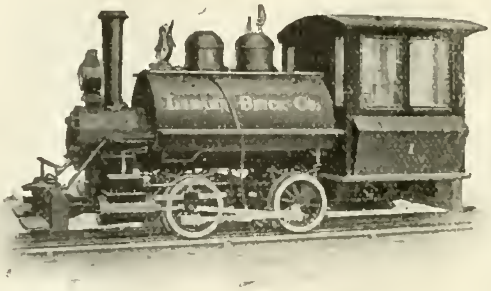

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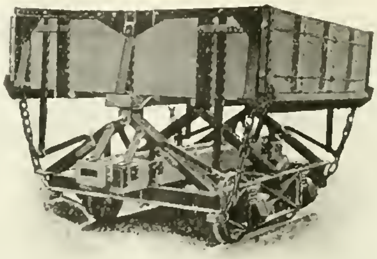

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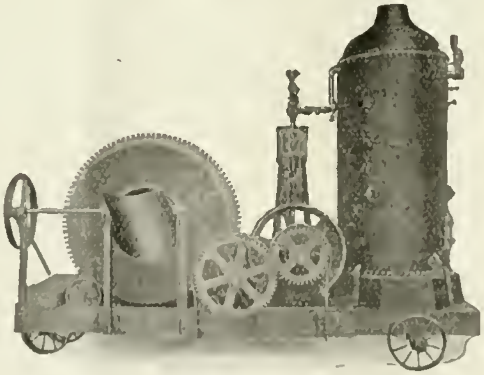

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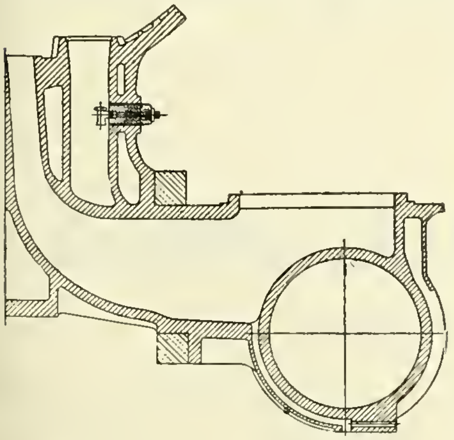
the minds of many there must be a different device for delivering the oil, and a better oil. The manufacturers of the hydrostatic feed lubricator, without any deviation from the principle upon which that device is operated, promptly met the requirements, by changes in construction, strengthening and increasing areas. In the vernacular of the day, the manufacturers of the oil "stood pat." They had builded upon solid foundation, and for the future. Through all the changes incident to the growth, from the 20 ton locomotives of years ago, to the mammoths of the present, through all the gradations of temperature, as steam pressures have increased from 120 to 230 lbs., and the higher temperatures incident to superheating steam, the oil has stood the test, and without one iota of change in composition or characteristic, the same oil that superseded tallow in 1870, has rendered, is rendering, and will continue to render satisfactory service, when properly delivered and distributed on the surfaces where needed.

It has been stated, that with the lubricant properly introduced and distributed with the steam, the pressure and temperature of the steam are factors worthy of but little consideration. The best authorities are agreed, that the ideal method of lubricating steam surfaces is by having the oil introduced in a highly attenuated form, and thoroughly intermingled with the steam, the steam becoming lubricated. Then why not deliver the oil into the steam, at a point where this process can take place before it reaches the steam chest or valve chamber, and thus secure lubrication at every point where the steam has contact? Those who have had to do with the examination of slide valves, have been impressed with the conditions found. All too frequently the valves and seat cut or excessively worn, and yet the top of the pressure plate always oily, a convincing refutation of the claim sometimes made, that the heat dries the oil, and a proof that while it has been delivered, it has not been satisfactorily distributed. Such conditions have prompted a change in the delivering point from the top of the chest, to the steam way in the saddle casting, and personal observations in several instances, justifies the assertion that better results were obtained than were posible under the old method. The kindness of a friend, who is thoroughly familiar with the subject, has made it possible to submit information pertaining to the device shown in one of the accompanying illustrations which has given excellent results, and is confirmatory of the writer's opinion as to the best place to admit the oil to the steam.

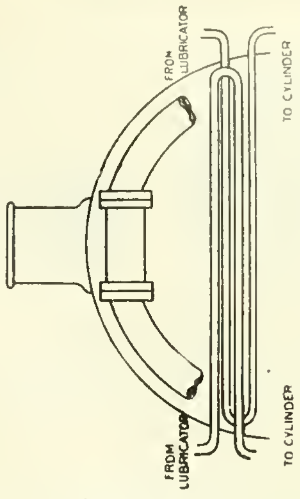
In a letter which accompanied the blue print, my friend wrote: "The drawing is from the original atomizer made, which idea was conceived and put into operation by J. C. Garden, Master Mechanic, G.T.R. on some passenger locomotives, cylinder dimensions 20x26, with steam pressure 225 lbs., equipped with Richardson slide valves, which were giving much trouble from valve seats cutting, notwithstanding engineers were receiving all the valve oil they desired. One engine in particular had valve seats faced four times in 2,000 miles made. The oil delivery pipes were then turned into the saddle to steam passages, and the valves examined after the engine had made 30,000 miles, and the seats were perfect. As an experiment, by putting a valve in delivery pipe, close to lubricator, and turning the pipe down a distance of 12 ins, and up again to the original position, and putting in another valve; after filling the bend in pipe with water, and working steam for some time opening the valve next to the steam chest, it was found that the water had been entirely drawn out of the 12 in. pocket. Mercury was also raised 3 in. in it proving that the atomizer is really a syphon to the delivery pipe. I am quite positive in assuring you that the locomotive is better lubricated by the use of this device, than with the ordinary couplings and plugs."


Position of atomizer for main valves.

Recently, in reading, I noted a thought which seems applicable here: "Things authorized by custom, if not excellent, are yet comfortable, and sort well together." And again, "With regard to what is common; let men reflect, that they have hitherto been used to do nothing but refer and adapt the causes of things of rare occurrence, to those of things which more frequently happen, without any investigation of the causes of the latter, taking them for granted and admitted." For years, the custom of delivering the oil to the steam chest, "If not excellent" has been "comfortable," convenient.

Twenty years ago, a cut valve was of rare occurrence. and always attributed to neglect. Now the "things which more frequently happen' are attributed to the same cause often without investigation. Not long since I learned of a device originating with J. H. Watters, Assistant Master Mechanic, Georgia Rd., by means of which after the oil leaves the lubricator it is passed through superheating pipes located in the front of the engine, by means of which the oil is raised in temperature to that above the temperature of the steam, and is carried with the steam to the surfaces to be lubricated. I am informed that this device was tried on a passenger engine, with cylinder dimensions, 18x24, wheel diameter, 60 ins., steam pressure 160 lbs., running in local passenger service 192 miles a day. This locomotive made 530 miles to one pint of valve oil, including the lubrication of the air pump. The illustration and information is submitted as a further confirmation of the statement that the efficiency of the oil is not impaired when submitted to high temperatures, and also as another means of obtaining satisfactory lubrication, by introducing the oil into the steam at a temperature above the steam, thus insuring more perfect atomization and distribution. While the locomotive upon which this test was made is not the equal in size or steam pressure, of the modern locomotives, the principle involved is the same, and results should be comparatively as good on the larger locomotives.

In the earlier experience with superheated steam, it was assumed that a mechanically operated, or force feed lubricator, was necessary. The error of that opinion is shown by the success attained from the hydrostatic feed lubricator, which is the standard in this country for superheated steam, as well as locomotives using saturated steam. It has been demonstrated beyond question, that the cylinder oil in general use, is efficient under all steam pressures and temperatures yet obtained in locomotive operation. It has been further demonstrated, that locomotives using superheated steam, where the maximum temperature does not exceed 500 degrees Fahr., do not require any more oil for valve and cylinder lubrication than the same locomotive using saturated steam. I will go further and say that even less oil is required for the locomotive using superheated steam. Conditions are more favorable for satisfactory and economical lubrication. The absolutely dry condition of superheated steam entirely obviates the flushing of valves and cylinders with the consequent washing away of the lubricant, which is a frequent cause of loss of material, and impaired efficiency of the locomotive, when using saturated steam. The pressure in the steam chest is necessarily lower than the boiler pressure, insuring a more uniform delivery of the oil when fed directly to the valve chamber. The oil is more thoroughly atomized when it comes in contact with the high temperature steam and is consequently better distributed over all parts to be lubricated. When brought in contact with these parts, because of their lower temperature, the oil condenses and remains because of the absence of moisture.



Watters Oil Heater. Outline Sketch.

The statement has been made, and reiterated, that the valve oil now in general use is efficient under all pressures and temperatures. Without equivocation that statement is correct. However, the manufacturers, realizing the importance of furnishing their patrons the best that can be produced, are now furnishing an oil specially adapted for service in steam temperatures above 500 degrees, because of its high viscosity, cohesion, and vaporization in such temperatures. In the terms we all understand, under those extreme temperatures this oil adheres more closely to the walls of the cylinders, and to the valve seats, than does the oil we are more familiar with, and consequently it requires a smaller quantity.

A committee upon the lubrication of locomotives using superheated steam, recently reported in part as follows: "From what the committee has been able to learn, the highest temperature of steam obtainable under present conditions, does not exceed 620 degrees Fahr., and of course, this temperature does not prevail in the cylinders, but only in the steam chest; inasmuch as the temperature in the cylinders is governed by the average pressure obtained throughout the stroke of the piston, and not the initial or admission pressure. It is believed by the committee that two locomotives, the same in every respect, except one being equipped with high temperature superheat, the one with superheater will make as many miles per pint with superheat valve oil, as engine with-

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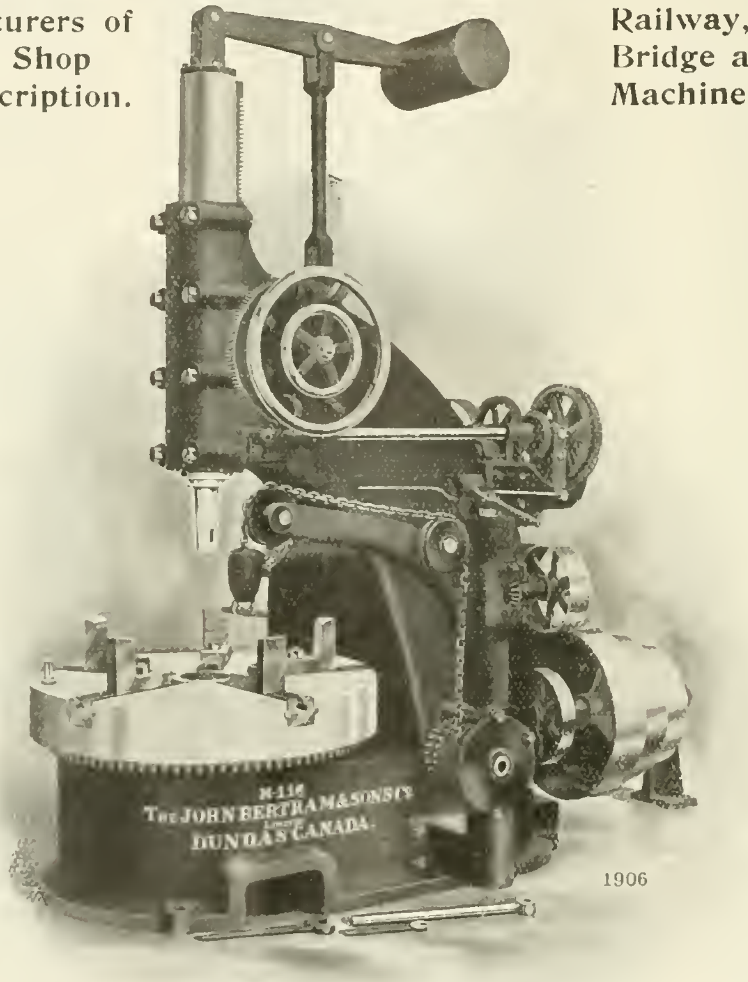
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out superheat, with the oil more commonly used." It was the sense of this committee, that while there is every probability of improvement in the present arrangement of superheating, it would seem improbable that any effort will be made to secure a much higher temperature, not because of the problem of lubrication, but in view of the effect upon the materials comprising the machinery.

That superheating is destined to find a permanent place, if not universal, in modern locomotive design, is the opinion of most competent authorities. With over 600 locomotives on the C.P.R., equipped with superheaters, it is but just to credit H. H. Vaughan with a large measure of the success attained in the new world from this feature of locomotive operation. What is known as the Vaughan-Horsey superheater, is used on the C.P.R. absolutely, and the superheat oil mentioned is used on this type of engine. It has been found that by using this oil, as many miles, or more per pint, can be made, compared with the non-superheated locomotive using the standard valve oil.

"Miles per pint" has been the unit of measurement, when considering the efficiency of a valve oil in railroad service. The C.P.R. freight locomotives average in steam temperature, from 540 to 560 degrees; on passenger engines 520 degrees. Engines equipped with superheaters, cylinder dimensions 21x28, and 22x32, are allowed oil on the basis of 75 miles per pint. Engines having cylinders 24x32, 65 miles to the pint, imperial measure, which is about one-fifth more than wine measure, such as is used in the U. S. Very good results are obtained from this allowance, and it is only on rare occasions that the allowance is exceeded. All engines equipped with superheaters, have piston valves, and carry 200 lbs. pressure, with the exception of about 100 engines, which carry 180 lbs. Diameter of driving wheels, 57 and 63 inches.

Excellent results have been obtained by applying the oil pipes in the steam passage in the saddle casting, and it has been further demonstrated that additional pipes are not necessary. It is found that cylinder packing wears somewhat faster with superheated steam, but this is attributed to the increased pressure behind the rings, or possibly to the deteriorating effect of the heat on the material in the rings, and not due to any deficiency in lubrication. As the locomotive and its equipment change, lubrication will demand consideration, to the end that efficiency and economy be maintained.

Acknowledgments are due, and gratefully rendered to the gentlemen whose names appear in mention of their devices, and also to several of the writer's associates in the Galena-Signal Oil Co.

The foregoing was read before the Central Railway Club at Buffalo N.Y., recently.

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G. T. Western Ry. Rate Case.—In the case of W. K. Noble vs. Grand Trunk Western Ry. et al, complainant asked reparation on shipment of coiled elm hoops from Mount Clemens, Mich., via Norfolk, Va., to Ripplemead, Va., on a combination rate of 26c. per 100 lbs. Subsequently a specific rate from Mount Clemens to Norfolk was published. Reparation was demanded on the basis of the resulting Ripplemead rate of 21½c. The Interstate Commerce Commission has held that as the later tariffs could not be used until the Commission's tariff rules had been complied with, there is no basis for an order of reparation. Such order should be made upon affirmative evidence that the rate complained of is unreasonable or unjustly discriminatory, which does not appear in this case.

March Birthdays.

Many happy returns of the day to:—

W. G. Annable, General Passenger Agent C.P.R. Atlantic Steamship Lines Montreal, born at Ottawa, Mar. 3, 1875.

P. S. Archibald, M. Can. Soc. C.E., General Manager Elgin and Havelock Ry., Moncton, N.B., born at Truro, N.S., Mar. 21, 1848.

G. J. Bury, General Manager C.P.R. Western Lines, Winnipeg, born at Montreal, Mar. 6, 1866.

Allan Cameron, General Traffic Agent, C.P.R., New York, born near Owen Sound, Ont., Mar. 14, 1864.

F. G. J. Comeau, General Freight Agent Dominion Atlantic Ry., Halifax, N.S., born at Meteghan River, N. S., Mar. 10, 1859.

A. E. Cox, Storekeeper Canadian Northern Ry., Winnipeg, born at Huddersfield, Eng., Mar. 12, 1863.

G. R. Fairhead, Commercial Agent Canadian Northern Ry., Hamilton, Ont., born at Toronto, Mar. 6, 1882.

C. Forrester, Trainmaster G.T.R., Stratford Ont., born at Wanstead, Ont., Mar. 5, 1876.

C. O. Foss, District Engineer National Transcontinental Ry., St. John, N.B., born at Wentworth, N.H., Mar. 20, 1852.

H. M. Gain, Passenger Trainmaster Eastern Division G.T.R., Montreal, born at Lindsay, Ont., Mar. 21, 1879.

R. A. Gamble, Fuel Agent Western Division C.P.R., Calgary, Alta., born at Dublin, Ireland, Mar. 1, 1876.

H. W. Gays, General Manager Ottawa and New York Ry., Ottawa, Ont., born at Brant, Erie Co., N.Y., Mar. 21, 1848.

A General Manager and Chief Engineer's Opinion.

M. H. McLeod, General Manager and Chief Engineer Canadian Northern Railway, Winnipeg, writes:—

"I have been a regular subscriber to the Railway and Marine World for some years, and I think you deserve great credit for the excellent publication. I have discussed this with various engineers and railway people, and they invariably express their appreciation of the magazine."

J. Halstead, General Freight Agent C.P.R., Calgary, Alta., born at Bracebridge, Ont., Mar. 2, 1877.

R. M. Hannaford, M. Can. Soc. C.E., Engineer Permanent Way, Buildings and Bridges, Montreal Street Ry., Montreal, born there, Mar. 22, 1865.

W. Harty, M.P., President Canadian Locomotive Co., Kingston, Ont., born in Biddulph tp., Middlesex, Ont., Mar. 8, 1847.

C. A. Hayes, General Freight Agent G.T.R., Montreal, born at West Springfield, Mass., Mar. 10, 1865.

Joseph Hobson, M. Can. Soc. C.E., Consulting Engineer G.T.R., Hamilton, Ont., born at Guelph, Ont., Mar., 1834.

N. J. Holden, President The Holden Co., Ltd., Montreal, born at Nobelton, Ont., Mar. 22, 1866.

A. R. Holtby, Master of Bridges and Buildings, Mountain Division G.T.P.R., Prince Rupert, B.C., born at Rawdon, Que., Mar. 23, 1859.

Frank Lee, M. Can. Soc. C.E., Division Engineer C.P.R., Winnipeg, born at Chicago, Ill., Mar. 7, 1873.

R. W. Long, Division Freight Agent G.T.R., Hamilton, Ont., born at Appin, Ont., Mar. 20, 1873.

T. W. Lowe, General Boiler Inspector C.P.R Western Lines, Winnipeg, born at Montreal, Mar. 30, 1858.

J. M. McKay, Trainmaster C.P.R., Winnipeg, born at Tiverton, Ont., Mar. 13, 1868.

Owen McKay, M. Can. Soc. C.E., Chief Engineer Essex Terminal Ry., Walkerville, Ont., born in Ross tp., Renfrew co., Ont., Mar. 13, 1848.

Col. H. H. McLean, K.C., M.P., Vice President St. John Ry., St. John, N.B., born at Fredericton, N.B., Mar. 22, 1855.

Sir Donald D. Mann, Vice President Mackenzie, Mann & Co., Ltd., and First Vice President Canadian Northern Ry., Toronto, born at Acton, Ont., Mar. 23, 1853

D. J. Murphy, Jr., Assistant Traffic Superintendent and Trainmaster Dominion Atlantic Ry., Kentville, N.S., born at Caledonia, Ont., Mar. 3, 1874.

R. Patterson, Master Mechanic G.T.R., Stratford, Ont., born at Brantford, Ont., Mar. 13, 1860.

F. W. Peters, Assistant to Vice President C.P.R., Winnipeg, born Mar. 25, 1860.

E. H. Sewell, City Passenger Agent C.P.R., Sherbrooke, Que., born at Quebec, Mar. 17, 1875.

C. J. Smith, General Manager Richelieu and Ontario Navigation Co., Montreal, born at Hamilton, Ont., Mar. 10, 1862.

G. Sommerville, Agent Merchants Line Steamers, Toronto, born at Kingston, Ont., Mar. 21, 1855.

W. Y. Soper, director Ottawa Electric Ry. Co., Ottawa, Ont., born at Oldtown, Me., Mar. 9, 1854.

W. C. Starke, Travelling Car Service Agent G.T.R., Montreal, born there, Mar. 9, 1867.

W. F. Tye, M. Can. Soc. C.E., ex-Chief Engineer C.P.R., Consulting Engineer, Toronto, born at Haysville, Ont., Mar. 5, 1861.

G. W. Vaux, General Passenger Agent G.T.R., Montreal, born at Montreal, Mar. 21, 1866.

D. O. Wood, General Freight Agent for Ontario, Allan Line Steamships, Toronto, born at Kleinburg, Ont., Mar. 16, 1864.

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Can. Soc. C. E., Committee Reports.

Several of the reports of committees of the Canadian Society of Civil Engineers, presented at the annual meeting in Winnipeg recently, which are of importance to railway engineers, are given elsewhere in this issue in full.

W. F. Tye, chairman of the committee on transportation routes, reported that a preliminary report on the relative cost of construction, maintenance and operation of the Georgian Bay canal, St. Lawrence canals and a lake and rail route was in course of preparation, that a great deal of work had been done on it, but that while it had been discussed and criticised by members of the committee, it had been found impossible to have it ready for presentation at the meeting.

J. G. Sullivan, Assistant Chief Engineer C.P.R. Western Lines, chairman of the committee on roadbed and ballasting, reported that as per instructions to the committee, it was hoped they would be able to agree on modifications and omissions of the specifications on roadways as adopted by the American Railway Engineering and Maintenance of Way Association, so that a standard specification might be recommended to the Society, but after considerable correspondence it was thought best not to recommend a specification this year. Some very good points have been brought out in correspondence, and it is thought better that the committee be given more time to carefully consider this important matter, especially as they hope to be able to get a specification that will meet with the general approval of the majority of the committee.

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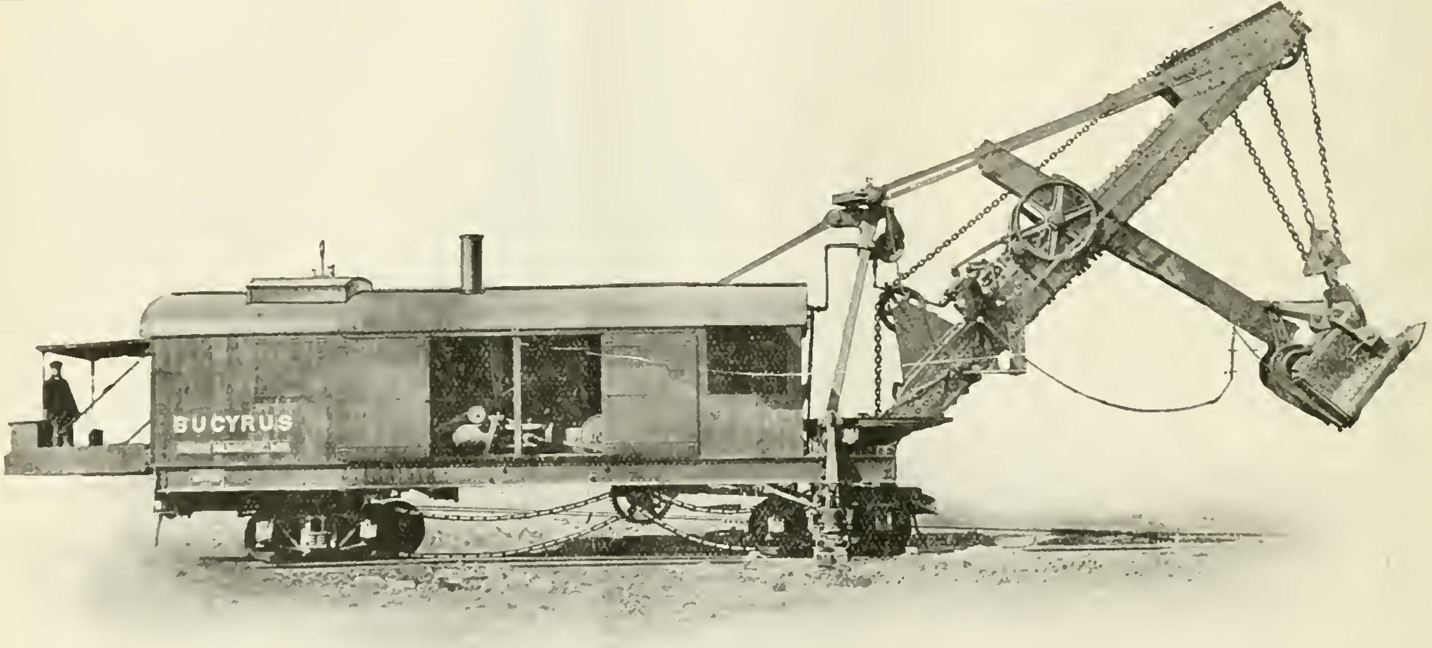

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Primitive and Wasteful Manner of Laying Out and Constructing Transportation Lines.

Col. H. N. Ruttan, President Canadian Society of Civil Engineers, read the following address at the annual meeting in Winnipeg recently:

Engineering was some 80 years ago defined by Thomas Tredgold as "the art of directing the great sources of power in nature for the use and convenience of man." At the beginning of the twentieth century it has become apparent not only to engineers, but to all those who have the interests of posterity at heart, that the great sources of power in nature should not only be directed, but that they should be economically managed and conserved, so that Tredgold's definition may now properly read, "The art of directing and conserving the great sources of power in nature for the use and convenience of man."

Anything approaching an exhaustive discussion on the subject, one on which volumes might be written, is not now intended. It may be pointed out that among the wastes which have been permitted throughout the past are:

1. The impoverishment of the lands. The gradual conversion of what were productive areas into barren wastes, examples of which may be seen in older parts of Asia and Europe, and, unfortunately, to an appreciable extent, in North America.

2. Following the exhaustion of the soil, and keeping pace with it, has been the destruction of the forests; and

3. The unbalancing and perhaps the lessening, of precipitation, so that rains come when they are not wanted and fail when they are indispensible for successful agriculture.

4. The primitive and wasteful manner in which transportation lines are laid out and constructed.

It is the last paragraph only with which it is proposed to deal in the present address. The requirements of modern civilization demand not only that people be carried at express speed from one quarter of the globe to another, but that every food and fabric grown and produced be distributed broadcast for the use and convenience of man. The rush to meet these requirements has led to the abnormal development of transportation routes, which, though good in themselves and generally advantageous, have often, with a total disregard of economic arrangement, been improperly located or needlessly multiplied in one section to the inconvenience of another. The necessary requirements in the initiation and construction of transportation lines may be stated as follows: A thorough knowledge of the country to be served, both in its physical features and its capabilities for production. That this knowledge be utilized in the location of lines of transportation, so that the greatest service be provided at a minimum ultimate cost against the traffic using the lines.

Before going further it may be well to consider to what extent these requirements are at present met. A study of the railway systems of any country must lead to the conclusion that no effective system of supervision has been exercised in the locations of the systems to meet the economic requirements above stated. Much comparatively useless road has been constructed for the purpose of enabling one set of capitalists to take tolls on traffic which could have been easily handled by an existing line. Instances appear where productive districts, separated by unproductive or partially unproductive country, are connected by lines running full length through the unproductive land, whereas a single line would have served the traffic of several converging railways. All this largely increases the capital, interest, maintenance, and management charges, which must be borne by the traffic. Some of the causes contributing to the defective economy referred to are:

Want of knowledge of the country in the construction of the first lines.

The desire of capitalists to share in profits being earned by favorably situated lines.

The ease with which charters for so-called competing lines may be obtained.

The relatively slight interest taken by the public in the location of transportation lines, and the mistaken idea that the construction of any line is advantageous.

This deplorable state of affairs may be remedied in a most simple and inexpensive manner. Before any companies are given franchises by Parliament, both the public and Parliament should insist upon having before them sufficient information to enable them to judge of the effect upon both public and private property of the proposed works. This information may be best given by large scale and accurate plans of the proposed works, such as are required by the standing orders of the House of Commons in England, extracts from which are given in an appendix to this address. In this connection attention is called to the fact that in Canada something should at once be done to arrange for surveys of the country and the preparation of plans similar to the ordnance maps of Great Britain.

A further step forward would be the giving of compulsory running rights over existing lines to companies which may properly participate in the traffic of certain districts, and which cannot do so without heavy expenditure in the construction of parallel lines, which would in themselves be unproductive or which would unnecessarily cut into business which can be readily handled by existing lines.

The remarks on granting charters to railway companies and proposed improvements in procedure apply with equal force to canals, river improvements, and hydro-electric plants. Though Canada is noted for its magnificent canal system and for the progressive and patriotic policies of its governments in this respect, the opening up of the country will necessitate in the immediate future a development far beyond any that has yet taken place. It is therefore most necessary that a broad and intelligent view of the whole situation be taken so that duplication of facilities be avoided and expenditure be made in the interest of and ultimate economy in, capital and operation charges.

Numerous instances might be given illustrating great expenditures which have been made in an ill-considered and extravagant manner in the construction of railways, and of applications to Parliament for charters to construct works, which were both physically and economically impossible to carry out. These have often masked the acquisition by private parties of important assets of the public domain. Such instances are well known to most engineers. It is therefore not necessary to refer directly to them.

It is not intended in any way to discourage development work in the country, but to point out the haphazard and expensive manner in which undertakings for the public service are often carried out, and to suggest what is considered a business-like and common-sense means of conserving, in this respect, the interest of the people at large. It must be remembered that eventually the burden falls upon, and must be borne by, the people. If the construction of an unnecessary mile of railway is prevented, or a mile already constructed is made to do the work of two, the country as a whole will be greatly benefitted.

At first it may appear that the suggested changes in initiating and carrying out public works would, if carried into effect, discourage the construction of works needed for the development of the country and its resources. This, however, would not be the case; on the contrary, the care displayed in scrutinizing projects before they were authorized would give confidence to investors by the assurance that, in the opinion of Parliament, the works were such as were reasonable and proper, and would go far, by the confidence inspired, to facilitate the flow of capital into the country. A charter granted by Parliament under the regulations proposed would be in itself a guarantee that the project was sound and practicable. The criticism called for by these regulations should greatly assist in determining the merits of such projects.

It is, of course, apparent that, in addition to the enormous saving which could be made by the economic location and construction of works for the use and convenience of the public, there are other conditions not less important. For example, the power now possessed by companies to increase capital beyond reasonable limits, and the crude management in operation, now being so much discussed in connection with the claim of the American railways, that rates must be increased to enable them to earn revenue to meet their capital and operation expenses.

In the following conditions the last two are not purely engineering, and need not be further considered at the present time: The economic location and construction of lines of transportation; the limiting of capitalization within reasonable bounds, and the scientific and economical operation of all transportation services, will all three have the effect of reducing rates to a minimum. It is in the first of these that engineers are vitally interested, and their advice to clients will go a long way towards conserving immense sums of capital now wasted in crude and uneconomical locations and constructions. The word economy has no reference to detail, and is used in its broader meaning only. As to economy of designs in detail, there is no fault to be found; on the contrary, all are proud of the bridges, tunnels, and other noted structures which are being constantly turned out by the profession.

In carrying out the proposed system no cumbersome legislative machinery would be required—an amendment to the Railway Act giving the Board of Railway Commissioners power to make regulations for the necessary surveys and plans, and finally to deal with the matters in question, is all that would be necessary.

Extracts from Standing Orders of the British House of Commons.

4. Plans, Books of Reference, Sections and Cross-sections.

40. Every plan required to be deposited shall be drawn to a scale of not less than 4 ins. to a mile, and shall describe the lands which may be taken or used compulsorily, or on which an improvement charge may be imposed, or which are rendered liable to the imposition of an improvement charge, and in the case of bills of the second class, shall also describe the line or situation of the whole of the work (no alternative line or work being in any case permitted), and the lands in or through which it is to be made, maintained, varied, extended, or enlarged, or through which any communication to or from the work may be made; and where it is the intention of the promoters to apply for powers to make any lateral deviation from the line of the proposed work, the limits of such deviation shall be defined upon the plan, and all lands included within such limits shall be marked thereon; and unless

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the whole of such plan shall be upon a scale of not less than ¼ in. to every 100 ft., an enlarged plan shall be added of any building, yard, courtyard, or land within the curtilage of any building, or of any ground cultivated as a garden, either in the line of the proposed work, or included within the limits of the said deviation, upon a scale of not less than a quarter of an inch to every one hundred feet.

41. In all cases where it is proposed to make, vary, extend, or enlarge any cut, canals, reservoir aqueduct, or navigation, the plan shall describe the brooks and streams to be directly diverted into such intended cut, canal, reservoir, aqueduct, or navigation, or into any variation, extension, or enlargement thereof respectively, for supplying the same with water.

42. In all cases where it is proposed to make, vary, extend, or enlarge any railway, the plan shall exhibit thereon the distances in miles and furlongs from one of the termini; and a memorandum of the radius of every curve not exceeding one mile in length shall be noted on the plan in furlongs and chains; and where tunnelling as a substitute for open cutting is intended, the same shall be marked by a dotted line on the plan, and no work shall be shown as tunnelling in the making of which it will be necessary to cut through or remove the surface soil.

43. If it be intended to divert, widen, or narrow any public carriage road, navigable river, canal, or railway, the course of such diversion and the extent of such widening or narrowing shall be marked upon the plan, and, if it be intended to divert any public footpath, the course of such diversion shall be marked upon the plan.

44. When a railway is intended to form a junction with an existing or authorized line of railway, the course of such existing or authorized line of railway shall be shown on the deposited plan for a distance of 800 yards on either side of the proposed junction, on the same scale as the scale of the general plan.

48. In cases of bills for improving the navigation of any river, there shall be a section which shall specify the levels of both banks of such river; and where any alteration is intended to be made therein it shall describe the same by feet and inches, or decimal parts of a foot.

49. In every section of a railway the line of the railway marked thereon shall correspond with the upper surface of the rails.

50. Distances on the datum line shall be marked in miles and furlongs, to correspond with those on the plan; a vertical measure from the datum line to the line of the railway shall be marked in feet and inches, or decimal parts of a foot, at the commencement and termination of the railway, and at each change of the gradient or inclination thereof; and the proportion or rate of inclination between every two consecutive vertical measures shall also be marked.

51. Wherever the line of the railway is intended to cross any public carriage road, navigable river, canal, or railway, the height of the railway over or depth under the surface thereof, and the height and span of every arch of all bridges and viaducts by which the railway will be carried over the same, shall be marked in figures at every crossing thereof; and where the railway will be carried across any such public carriage road or railway, on the level thereof, such crossing shall be so described on the section; and it shall also be stated if such level will be unaltered.

52. If any alteration be intended in the water-level of any canal, or in the level or rate of inclination of any public carriage road or railway, which will be crossed by the line of railway, then the same shall be stated on the section, and each alteration shall be numbered; and cross-sections, in reference to the numbers on a horizontal scale of not less than 1 in. to every 330 ft., and on a vertical scale of not less than 1 in. to every 40 ft., shall be added, which shall show the present surface of such road, canal, or railway, and the intended surface thereof, when altered; and the greatest of the present and intended rates of inclination of the portion of such road or railway intended to be altered, shall also be marked in figures thereon; and where any public carriage road is crossed on the level, a cross-section of such road shall also be added; and all such cross-sections shall extend for two hundred yards on each side of the centre line of the railway.

55. When a railway is intended to form a junction with an existing or authorized line of railway, the gradient of such existing or authorized line of railway shall be shown on the deposited section, and in connection therewith and on the same scale as the general section, for a distance of 800 yards on either side of the point of junction.

5. Estimates and deposit of money and declarations in certain cases.

56. An estimate of the expense of the undertaking under each bill of the second class shall be made and signed by the person making the same.

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Modern Track Tools and How to Use Them.

In writing on this subject I realize how important a matter it is to care for and use tools correctly. I will take the hand car. Its use is to carry men and tools to and fro; also light material. As to the care of hand car I would not overload it at any time nor carry unnecessary tools or material; keep it well oiled and lost motion corrected; would set it off and on track if force is large enough; if not I would turn it off. My way of putting car on track is as follows: One man and foreman constitutes the gang; I use a piece of crossing plank 14 ins. long by 8 by 4; adze it down to ½ in., this will give it a raise of 3½ in. When ready to put car on track pull rear wheels inside of track. Place frog inside of rail; go to front of car, pull around until wheel strikes frog and mounts the rail, then pull the other wheel on track. Two men can put the car on track as easy as four men and just as quick. The old way of pulling car over rails is very hard on the car. Don't place frog parallel with rail. But place one end close to rail, the other 5 inches away so as when wheel mounts the rail it will have full flange bearing and will not crowd over rail while the other wheel is mounting the opposite rail.

The track level is used in leveling track. It should be accurate, no matter how turned or what way you use it. For levelling curves: Know the proper elevation and set level board in accordance. A level board that is not true should not be used; they are very costly if used. Think of a surfacing gang using an untrue board, say ½ in. of level for one season. It would take half of the next season to level what should have been done in the first place. The results are the same on sections, use a poor level two years, then use a true level, note the result. Half the track is ½ in. low. All track levels should be tested before being sent out for use.

The track jack is used principally for raising track. It can be used for lining track, and can also be used around wrecks to good advantage for jacking cars over and clearing track. For raising track always place jack outside of rail in an upright position, to avoid throwing track out of line, and for safety.

The claw bar is used to pull track spikes. It should be made of good material, claws well hollowed out with high heel to pull spike straight up out of ties. Claw bars with low heel should not be used; they pull the spike over and tear part of the tie with it. I think the heels of claw bars should have sharp raised grooves to hold bar from backing away while spike is being pulled.

The tamping bar is used to pack all kinds of ballast under ties; it should have a well shaped blade of good steel, 4 by ½ in. thick or less; the upper end should have a blade 6 by 1 by ¼ in., slightly sharpened to clean surplus ballast from ties to be tamped. The tamping end should be well curved and the handle bent to balance. To get the best results the operator should stand as low as possible, so that tamping blade will drive ballast well under the ties; tamping ties with bar too straight will not drive it under but down, which will do no good to track.

Spike pullers are used to pull spikes where claw bars cannot be used. The ones in use are good, but could be made a little wider at the opening.

Cold chisels are used for cutting small pieces of iron; they are good for marking steel rails that are to be cut with track chisels; should be sharp and carried on car at all times.

Sledges are used for driving fence posts. Are also good to maul joint ties down to surface, but it is best to cover tie face with a large solid piece of elm or some tough wood to avoid bruising its face.

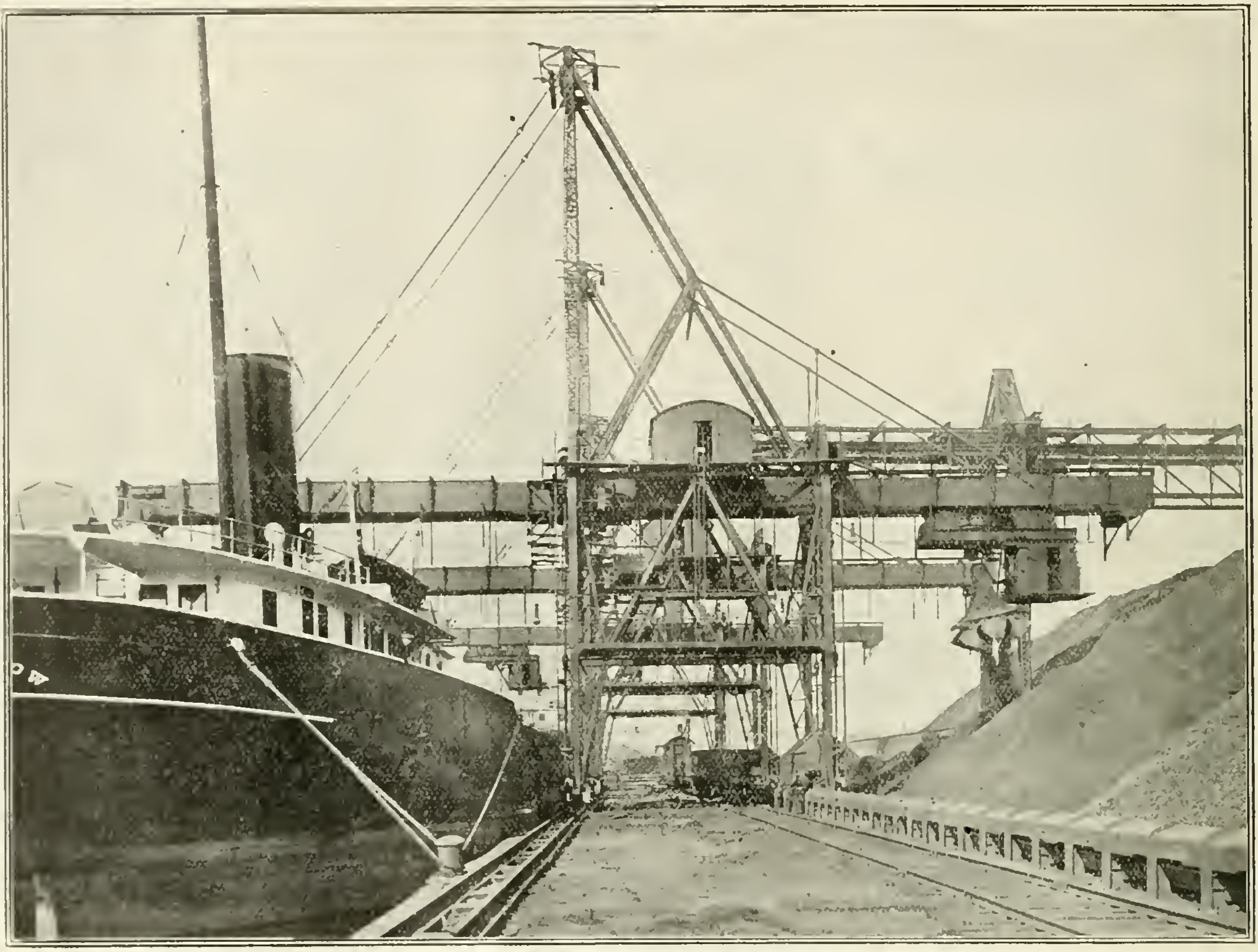
Track gauge is used for gauging track. Can also be used for leveling straight track; in cases of necessity place gauge on track with a small 10-in. level on top; this will do very well. Can also be used to square ties across track. In spiking new ties, place track gauge on track, gauge centre on tie centre, drive the other end to gauge, centre and tie will be square across track, either on curve or straight track.

The tape line is used for measuring anything you wish, but I would condemn the use of the common cloth tape line; nothing but the steel tape should be used, if accurate measurements are wanted, especially for rail measure.

Track drills, lining bars, pinch bars, in fact all track tools should always be kept in the very best of condition. No two men use the same tools alike. In fact a very small per cent. of laborers know how to use all tools correctly. Railway companies should furnish the best of tools to their employes and they in turn would take better care of them, especially the pick and shovel. To describe how to use them is a hard proposition. Volumes could be written on this subject and very little accomplished. I make a business of keeping all edge tools sharp, and all other tools in good condition. By "Rail Joint," in Roadmaster and Foreman.

◆

Cross-wall Railway Bridge, Quebec.—The railway bridge which the Quebec Harbor Commissioners are about to build, is at the entrance to the wet dock of Princess Louise Embarkment and docks. The superstructure will consist of a single leaf, single track bridge of the bascule type, having a clear span of 74 ft. 4 in., and giving 22 ft. headroom. The trusses will be 22½ ft. centre to centre. The bridge will give connection between the railway tracks on the two sides of the wet-dock and tidal basin. The contract has been given to the Dominion Bridge Co., Montreal.



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Rails, Fastenings and Tie Plates.

At the annual meeting of the Canadian Society of Civil Engineers in Winnipeg recently, H. G. Kelley, Chief Engineer G.T.R., Chairman of the committee, presented the following report:

At the annual meeting two years ago your committee on rails, fastenings and tie-plates, presented drawings of the various sections of rail used as standard by the railways of Canada and the United States, and also of some sections which had been proposed and were then being placed in service experimentally. At the last annual meeting your committee reported upon a standard drop testing machine, which received the approval of the Society, and which is now in universal use in the mills of both countries. The experiments with the new sections have not progressed sufficiently for your committee to present a statement of the results in this report, but the use of the new testing machine is proving most satisfactory, and is producing a uniformity of results in the physical tests at the different mills, which is of much value in the collation of statistics.

In considering the subjects for this year's report, it has seemed to your committee, that the next logical step is to consider the service to which a rail is subjected, and the physical qualities requisite for such a rail, leaving for future investigations the consideration of how such physical qualities can be obtained.

With the increasing traffic of railways there followed naturally and of necessity an increase in car capacity and of engine weights. From a freight car weighing about 16,000 lbs., with a carrying capacity of 20,000 lbs., there came gradually an increase to cars having a carrying capacity of 40,000 lbs., 60,000 lbs., 80,000 lbs., and finally 100,000 lbs., with an allowable overload of 10%. In this transition of car weight and capacity, it is interesting to note, that whereas the cars weighing 16,000 lbs., had a carrying capacity of 125% of their empty weight, that the cars of to-day carrying 100,000 lbs., with a maximum empty weight of 40,000 lbs., have a carrying capacity of 250% of their empty weight. Freight cars having originally about 36,000 lbs., upon 8 wheels, or 4,500 lbs. a wheel, were superseded gradually by cars having, when overloaded 10%, 150,000 lbs. upon 8 wheels, or 18,667 lbs. a wheel. Engines having 12,000 lbs. per driving axle, or 6,000 lbs. per driving wheel, gave place to engines having 50,000 lbs. per axle, or 25,000 lbs. per driving wheel.

The original weight of rails varied from 35 to 45 lbs. a yard, but with the increasing weight of equipment the change was rapidly made to 56, 60, 65, 72, 80, and finally to as high as 100 lbs. per yard. The effects of these heavy loads upon track having been investigated both theoretically by mathematical analysis and practically by carefully conducted tests upon the rail and track, under actual train movements. Allowing 100% for the impact of rapidly moving trains over the standard track in use in this country, with engine axle loading of 50,000 lbs., we obtain the following, in which the third column would probably be more nearly the correct one theoretically, provided the stresses were due to the effect of the assumed load only.

Weight of rail per yard	Fibre stress per square inch (Tension)	
	Between 3 ties as a continuous girder having stable supports.	Between 3 ties as a continuous girder having an unstable centre support
60 lbs.	24,878 lbs.	28,000 lbs.
80 lbs.	16,668 lbs.	18,750 lbs.
100 lbs.	11,417 lbs.	12,842 lbs.

The stresses shown in column 3 do not reflect accurately the actual condition to which a rail may be subjected, for there is a reversion of stress of tension to compression like the swing of a pendulum under the passage of every wheel. In addition, the rail is subjected to a continual series of shocks, due to imperfect counter-balancing of engines, flat spots on wheels, irregularity of track surface, the oscillation and jar of equipment, the tension due to contraction in a falling temperature, and the effect of the tractive force of the engines.

To determine the actual effect upon rails by passing trains, a series of careful experiments were conducted on the New York Central and Hudson River Rd., with a delicate automatic recording machine, by which the actual deformation of the rail could be measured for each passing wheel of a train, and the actual stresses in the rail determined. These investigations demonstrated that at speeds of 30 to 40 miles per hour, engines having about 20,000 lbs. upon a driving wheel would produce tension stresses in the bottom flange of 80 lb. rails somewhere in excess of that shown in the third column of the preceding table, but well within the safe allowable limits of unit stress for good rail steel.

Experiments upon joints have also shown that a tensile stress of 12,000 lbs. per sq. in. could be produced in the unloaded rail due to its contraction in a falling temperature, before the grip of the angle bars would permit the rail to slip and relieve itself. An accumulation of these varied stresses in the lighter sections of rail, might therefore bring the total stress up close to the "elastic limit" or "yield point" of some of the rail steel.

The question has sometimes been asked, has the weight of the rail section increased as rapidly as the wheel loading? To this may be answered, yes. In the days when a 60 lb. rail section was a common standard, an engine axle loading of 24,000 lbs. was not infrequent; this loading produced a tension in the rail under the conditions of column 3 of the table of 13,440 lbs. per sq. in., as compared with 12,842 lbs. per sq. in. for a 100 lb. rail, under an axle loading of 50,000 lbs.

From a study of the preceding conditions it is evident that certain physical characteristics must be secured, in a steel rail, to meet the requirements of modern transportation necessities; briefly these may be recalled as follows: The steel must be sound and free from physical defects. It must be sufficiently hard to resist abrasion reasonably and also deformation of section. It must be of uniform texture, tough, but not brittle. It must have a high limit of elasticity and ultimate tensile strength.

The question naturally arises, can such a rail steel be produced? The answer is, that it has been produced in the past, that it is produced today, although not uniformly, and therefore, that it should be produced uniformly in the future. How to produce a rail steel uniformly possessing such qualities, and how to identify positively when such a steel has been produced, is a work, first, for the manufacturers, and second, for the manufacturers and users of rail jointly, and this knowledge must be the basis of a satisfactory specification in the future. That such a result can be reached is earnestly to be hoped, but it will require the co-operation and serious endeavor of both interests to accomplish this most desired and necessary result.

From A Chief Engineer of Surveys, Construction and Maintenance.

R. S. McCormick, Chief Engineer of the Algoma Central & Hudson Bay Railway, the Manitoulin & North Shore Railway, and the International Transit Company, Sault Ste. Marie, Ont., in renewing his subscription for the current year, writes:—

"I cannot do without the Railway and Marine World. It is the best magazine for the money published."

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Officers Canadian Society of Civil Engineers.

Following are the officers for the current year, as elected at the annual meeting at Winnipeg recently:—

President—C. H. Rust, City Engineer, Toronto.

Vice Presidents—H. Holgate, Montreal; C. E. W. Dodwell, Resident Engineer Public Works Department, Halifax, N.S.

Councillors—District 1, Professor L. A. Herdt, M.A.E., E. E. McGill University, Montreal; Phelps Johnston, Vice President Dominion Bridge Co., Montreal; H. G. Kelley, Chief Engineer G.T.R., Montreal; J. M. Shanly, Consulting Engineer, Montreal; J. G. Sullivan, Assistant Chief Engineer C.P.R., Winnipeg; H. H. Vaughan, Assistant to Vice President C.P.R., Montreal. District 2, P. S. Archibald, Commissioner New Brunswick Coal and Ry. Co., General Manager Elgin and Havelock Ry., Moncton, N.B.; F. W. W. Doane, City Engineer, Halifax, N.S.; R. McColl, Provincial Engineer, Halifax, N.S. District 3, A. E. Doucet, District Engineer National Transcontinental Ry., Quebec; J. T. Morkell, Enginer Quebec Central Ry., Sherbrooke, Que.; P. E. Parent, District Engineer Marine Department, Quebec. District 4, C. R. Coutlee, District Engineer Georgian Bay Ship Canal, Ottawa; D. MacPherson, Assistant Chief Engineer National Transcontinental Ry., Ottawa; W. J. Stewart, Chief Hydrographer, Marine Department, Ottawa. District 5, Prof. H. E. T. Haultain, C.E., Toronto University, Toronto; A. F. Stewart, Chief Engineer Mackenzie, Mann & Co., Toronto; C. L. Fellowes, Deputy City Engineer, Toronto. District 6, Prof. E. E. Brydone-Jack, B.A., C.E., Manitoba University, Winnipeg; J. A. Hesketh, Assistant Engineer C.P.R., Winnipeg; J. G. Legrand, Bridge Engineer G.T. Pacific Ry., Winnipeg. District 7, F. F. Busteed, General Superintendent C.P.R., Vancouver; J. S. Dennis, Manager Irrigation Department Alberta and B.C. Land Departments C.P.R., Calgary, Alta.; J. H. Kennedy, C.E., Chief Engineer Vancouver, Victoria and Eastern Ry., Keremeos, B.C.

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St. Leonards-Van Buren Bridge.—In connection with the bridge being erected between these points by a commission representing Canada and the State of Maine, a bill is under consideration by the Maine Legislature providing for the incorporation of a company with the title of the St. John River Toll Bridge Co., with a capital of $40,000, to build a bridge and to charge tolls. The provisional directors are:—W. H. Cunliffe, F. W. Mallett, A. G. Finlayson, D. C. Burpee, J. R. Burpee, and W. D. Burpee. (Feb., pg. 135.)

The Lethbridge, Alta., Herald, in copying considerable matter from our January issue, said:—"The Railway and Marine World is a mine of information on railway and marine matters."

The Board of Railway Commissioners, which has under consideration the question of transcontinental rates from Winnipeg westbound, as distinguished from those from Vancouver eastward, will not deal with the matter finally until the next sitting in Vancouver, which will probably be held in the spring.

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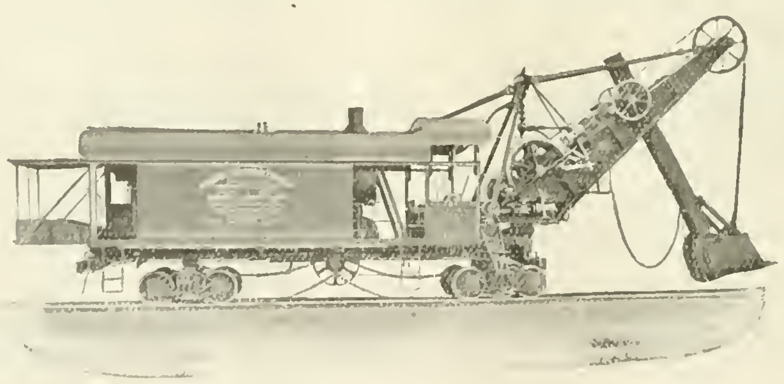

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Alberta and Great Waterways Ry.—The second instalment of interest on the $7,500,000 bonds of this company has been paid by the province of Alberta under its guarantee. The proceeds of the bond issue are lying in the banks or have been paid into court, pending a legal decision. (Feb., pg. 109.)

Alberta Central Ry.—The Minister of Railways has approved route plans from Rocky Mountain House to the Yellowhead Pass, Alta; and the Board of Railway Commissioners, Feb. 2, approved location plans between mileage 63 and 75 from Red Deer. (Feb., pg. 109.)

Alberta Ry. and Irrigation Co.—In discussing the company's bill in the House of Commons recently for an extension of time and for power to build certain lines, an amendment was proposed to compel the building of one of the proposed lines through Pincher Creek, instead of about three miles to the east. It was stated on behalf of the C.P.R., which acquired control of the A.R. and I. Co. some time ago, that there were engineering difficulties in the way of building the line as suggested. Several western members contended that there were no difficulties in the way, that the gradient between Cardston and Pincher Creek was less than one per cent., and that another company had completed a survey for a line with that gradient. The matter was, on Feb. 3, adjourned for further consideration. (Nov., 1910, pg. 909.)

Algoma Central and Hudson Bay Ry.—In continuance of the betterments which have been in progress during the past year, the company proposes this year to fill all timber trestles between Sault Ste. Marie, Ont., and mileage 69, to lay out new terminal yards at Sault Ste. Marie, and to build a new station there.

Work is reported to be progressing rapidly on the extensions of the line. The O'Boyle Construction Co. has the general contract, and sub-contractors working on the lines are: Murdock Bros., Gorman & Co., Hick & Furlong, H. Day and T. Trombley. (Feb., pg. 109.)

Brandon Transfer Ry.—According to a letter recently received by the Brandon, Man., city council, H. A. K. Drury, the Board of Railway Commissioner's Engineer at Winnipeg, has been instructed to discuss with the Canadian Northern Ry., the C.P.R., and the Great Northern Ry. representatives, the question of a route for this projected railway. (May, 1909, pg. 355.)

British Columbia and Alaska Ry.—We are advised that it has not been decided when construction will be started, but that it is expected that some work will be done this year. (Feb., pg. 109.)

British Columbia and Dawson Ry.—The Dominion Parliament has under consideration an application for the incorporation of a company with this title to build a railway from Lytton to Fort George, and from Telegraph Creek, B.C., to Dawson city, Yukon with a branch from Ashcroft to Vancouver. The provisional directors are: J. Walkenstein, A. T. Sullivan, C. G. Young, New York; J. O. Clifford, Chicago, Ill. (Nov., 1910, pg. 909. See also British Columbia and Alaska Ry., Feb., pg. 109.)

British Columbia and White River Ry.—Application is being made to the Dominion Parliament to incorporate a company with this title to build a line of railway from the International boundary at Bear Creek, B.C., to the Chilkat River, and northwesterly to the Alsek River, and on to White River, then to the International boundary between Yukon and Alaska, between the 62nd and 64th parallels. The provisional directors are: C. M. Marpole, G. Wilson, G. E. MacDonald, Angus McDonnell, Jas. Ironside, Vancouver, B.C.; J. Rosene, Seattle, Wash. (Dec., 1910, pg. 1013.)

Canadian Inter-Mountain Ry. — The provisional directors named in the application to the Dominion Parliament for the incorporation of a company to build the lines mentioned in our Jan. issue are: J. A. Harvey, W. Clayton, W. Warner, E. W. Bigelow, Vancouver, B.C. (Jan., pg. 21.)

Charlton to Elk Lake.—A deputation representing the Gowganda district waited upon the Ontario Government Feb. 15, to urge the granting of a right to a private company to build a line from Charlton or Uno Park, on the Temiskaming and Northern Ontario Ry. A company has been in negotiation for the building of this line since 1909, and the principal concession which the deputation asked was that the Government would not build a branch line in opposition.

Development Co. of Canada.—The Quebec Legislature is being asked to incorporate a company with this title to, among other things, build the following railways: from its mill site at Paugan Falls, Ottawa county, to the C.P.R.; from its mill site at Guigues, in Ottawa county, to the western boundary of the province, or in the alternative, to the C.P.R. Authority is asked to operate the lines by steam, electricity or any other motive power. The provisional directors are: R. H. Welden, C. W. Batho, W. B. Smith, Montreal.

Dominion Atlantic Ry.—A press report states that plans have been completed for the strengthening of a number of bridges, and for the building of a new bridge at Digby, N.S., on the location made by the old Western Counties Ry., and that the work will be put in hand at once. The building of a new bridge, it is stated, will enable the company to abandon a portion of the present route, which includes two bridges, and will give a shorter and better approach to Digby. (June, 1910, pg. 447.)

Great Lakes and Hudson Bay Ry.—Application is being made to the Ontario Legislature to incorporate a company with this title, to build a railway, to be operated by steam or electricity, or both, from near Peninsula Bay, on the coast of Lake Superior, following the Pic River northerly and northwesterly to Martin Falls near the northerly boundary of the province, with connecting lines, northerly or northeasterly to Hudson Bay, by way of the Kenogami River, Albany River, or other more direct course. Fullerton, Macdonald and Lytle, Toronto, are solicitors for applicants.

Ha Ha Bay Ry.—The branch line to Laterriere village, seven miles, starts from the main line at Riviere du Moulin, Que. The contractors, Boulianne and Boulianne, have started work, and expect to have the grading completed by July. (Feb., pg. 111.)

Halifax and South Western Ry.—See Liverpool and Milton Ry.

High River, Saskatchewan, and Hudson Bay Ry.—Application is being made to the Dominion Parliament to incorporate a company with this title to build a railway from some point in tps. 25 to 29, range one, west fourth meridian, Alta., northeasterly through Saskatoon, to the eastern boundary of Saskatchewan, in tps. 52 to 56, thence northeasterly to the Pas, in the Northwest Territories. Ballachy and Black, High River, Alta., are solicitors for applicants. (See High River and Hudson Bay Ry., Feb., pg. 111.)

Intercolonial Ry.—The Minister of Railways made the following statement in the House of Commons Jan. 30, in reference to dock accommodation at Halifax, N.S.:—"Some few months ago the Government Railways Managing Board visited Halifax and decided that some improvements in the way of additional accommodation should be made there. The department authorized the engagement of John Kennedy, of Montreal, who is an expert in harbor matters, to go to Halifax, make an investigation and report as to what was needed. His report has not come in yet, and it is too late to do anything this season. In the meantime some temporary arrangements were made to handle the traffic as well as possible this year. We hope in a few days to receive Mr. Kennedy's report and to take into consideration the much needed improvements with regard to wharf accommodation at Halifax during the coming year." (Feb., pg. 111.)

Joliette and Lake Manuan Colonization Ry.—The Dominion Parliament is being asked to extend the time within which the company may build its projected line from Joliette to Lake Manuan, Que., and to authorize the building of a line from Joliette southerly through Montcalm, L'Assomption and Hochelaga counties to Montreal. (Sept., 1910, pg. 727.)

Kettle Valley Lines.—Tracklaying is reported to be progressing between Midway and Rock Creek, 12 miles, and between Merritt and the crossing of the Coldwater River, B.C., on the portions of the extension under contract. About 20 miles of steel was reported to have been laid on the two sections Jan. 31. The Midway-Rock Creek section of 10 miles was reported laid Feb. 8, and according to the present rate of progress the Merritt-Coldwater River section is expected to be completed by Aug. 31. The location surveys for the route between the Coldwater Divide and Aspen Grove are reported to have been completed. N. E. Brooks and W. Gourlay are making surveys in the vicinity of Penticton and Trout Creek. (Feb., pg. 111.)

Kootenay and Alberta Ry.—The Board of Railway Commissioners has approved location plans for this projected railway from Pincher to Beaver Creek, Alta., mileage 0 to 13.09. (Jan., pg. 23.)

Liverpool and Milton Ry.—In connection with the contract under the Dominion act, granting subsidies in aid of certain railways, recently entered into, we are advised that the L. and M. Ry. was originally constructed as the L. and M. Tramway, and ran along the main road for most of the distance. This road ran from the pulp mills above Milton to Liverpool. A subsidy was voted some years ago by the Dominion Parliament, and has been revoted at various times since. This tramway, which was always operated by steam, was moved off the street in a number of places, but the gradients were heavy and the curves sharp, the road being of such a class as could not be passed for subsidy purposes. When the Halifax and South Western Ry. was built it was found that a good deal of freight would pass over the L. and M. R., and it became necessary to reduce the gradients and curves to allow an interchange of traffic. The Nova Scotia Government agreed to advance a certain sum to the L. and M.R. on a mortgage to make the necessary improvements to bring it up to the standard, so that it could obtain the subsidy. This work was virtually completed about a year ago, but no subsidy contract was made until recently. The line, which is five miles long, is now completed. Negotiations have been car-

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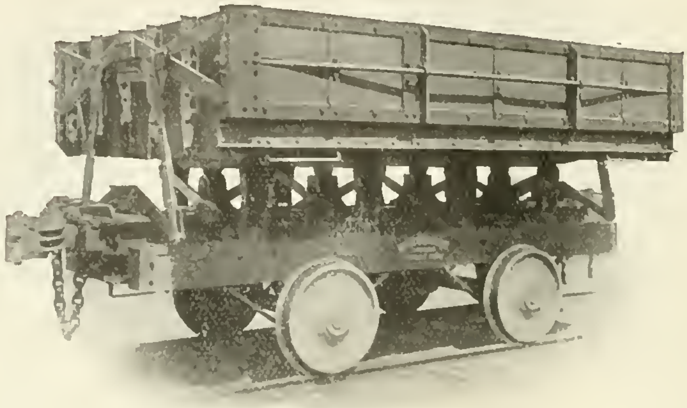

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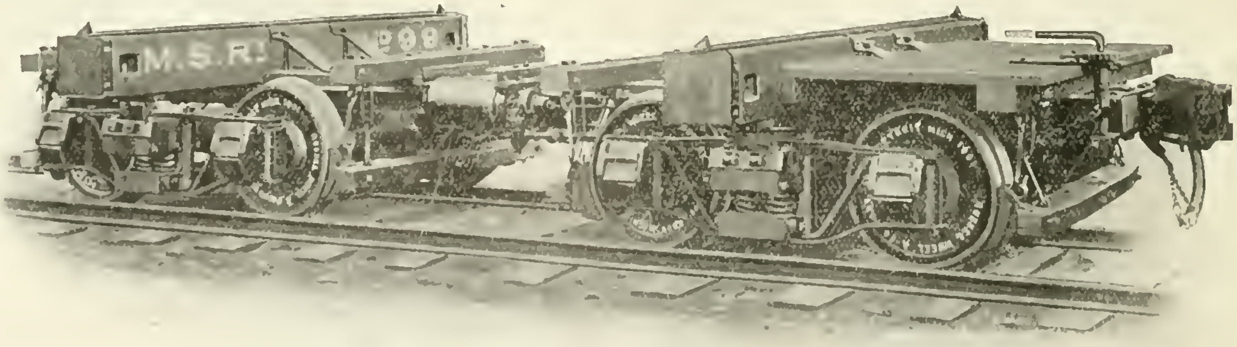

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ried on during the past year with the H. and S.W.R. for the purchase by it of the L. and M.R. The company was given authority by the Nova Scotia Legislature in 1910 to extend its line to Caledonia, about 25 miles. It is not possible to say at present whether any work will be gone on with on this extension in the near future or not. (Feb., pg. 155.)

Manitoulin and North Shore Ry.—Application is being made to the Dominion Parliament to change the name of the company to the Algoma Eastern Ry.

We are officially advised that the shop which has been erected at Clara Belle is not a locomotive repair shop, as press reports stated, but a car repair shop, and that it is a very small one. (Feb., pg. 111.)

Montreal and Great Eastern Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Montreal by way of Joliette and Lake Manuan, or by the most feasible route, to the National Transcontinental Ry. at Weymontachene, Que. In addition to asking power to enter into agreements with the G. T. Pacific Ry., the C.P.R., the Canadian Northern Quebec Ry., or any other railway crossed or to be connected with the projected railway, it is desired to have power to acquire the rights, etc., of the Joliette and Lake Manuan Colonization Ry. J. A. Ritchie, Ottawa, is solicitor for the applicants. (See Joliette and Lake Manuan Colonization Ry.)

Montreal and Northern Colonization Ry.—The provisional directors mentioned in the application to the Quebec Legislature for the incorporation of a company with this title are A. Geoffrion, K.C., V. Cusson, K.C., and L. Dansareau, Montreal. Power is asked to build a railway northerly from Montreal, the northerly terminal to be approved by the Governor General in Council, to build underground railways in Montreal, and for general powers as to the building of railway and general traffic bridges. The Montreal city council has authorized steps to be taken to see that the city's interests are protected when the bill is under consideration in the Legislature. (Feb., pg. 111.)

Montreal Central Terminal Ry.—The Montreal board of control has been informed by J. M. Shanly, President M.C.T.R., that it is intended to secure a location in the heart of the city, on which will be built a terminal station with underground and surface approaches. All trains coming from the south will reach the city by a subway beneath the St. Lawrence, while all incoming lines from other directions will be provided for by means of depressed lines, the existing approaches to the city being utilized therefor, and no appreciable change in the existing grades being affected. There will be no level crossings under the new conditions. Substations will be provided at various points in the city, in order to facilitate the transfer of passengers, baggage and freight. The incoming lines could, if necessary, connect with the existing street railway surface lines, and the latter lines would be used for the collection of freight throughout the city. The subways needed will be constructed, as far as possible, on private property, the city thoroughfares being utilized only when necessary.

Letters have also been received by the board of control from D. McNicoll, Vice President C.P.R., and C. M. Hays, President G.T.R., stating that with the improvements being made and in contemplation at their existing terminals, they see no advantage in the M.C.T.R. Co.'s plans. (Feb., pg. 113.)

Mountain Coal and Colonization Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a line from the G.T. Pacific Ry. branch now under construction, to the Yellow Head Pass Coal Co.'s lands, to tp. 46, range 23, west 5th meridian, with branches to the various coal mines along its route. Short, Wood, Biggar and Collisson, Edmonton, Alta., are solicitors for applicants.

New Ontario and Quebec Ry.—Application is being made to the Dominion Parliament to incorporate a company to build a railway from mileage 940 on the National Transcontinental Ry. in the province of Quebec, southerly around the east end of Upper Lake Abitibi, about 15 miles, through Matheson tp., Ont., to Tisdale tp., 95 miles, thence southwesterly to a junction with the James Bay Ry. near Congdon Station, or mileage 131, about 50 miles, making a total of about 160 miles; a line from near mileage 1,000, on the N.T. Ry. southerly along the west side of Abitibi Lake to a junction with the first mentioned line, being about 25 miles; a line from Iroquois Falls station, on the Temiskaming and Northern Ontario Ry. northerly and easterly along the Abitibi River, to a junction with the last mentioned line, about 25 miles. H. Fisher, Ottawa, is solicitor for applicants.

New Westminster Bridge.—The financial statement of British Columbia for the year ended Mar. 31, 1910, recently presented to the Legislature shows that the expenditure on the New Westminster Bridge was $94,108.78, of which $25,794.26 was on account of new flooring; $22,942.58 on account of repainting, and $12,648 for a new interlocking system. The bridge is used by the Great Northern Ry., by the B.C. Electric Ry., and by the general public. The bridge tolls received during the year were $29,901.35, the largest amount received since the bridge was opened during the financial year 1904-05.

Owen Sound and Meaford Ry.—See Simcoe, Grey and Bruce Ry. (Dec., 1910, pg. 1015.)

Pacific and Peace River Ry.—The provisional directors named in the application to the Dominion Parliament for the incorporation of a company with this title are: L. R. Lemarchand, V. Pujebet, A. Michelet, Edmonton, Alta.; E. Brunet, Havre, France; G. Pujebet, Andrincq, France; P. Bounet, Montbron, France, and A. Clement, Perigueux, France. The proposed railway would run from Bella Coola, B.C., to Fort McLeod, thence through the Pine Pass to Peace River, at Dunvegan, Alta., about 480 miles. (Dec., 1910, pg. 1015.)

Pere Marquette Rd.—Press reports state that the enlargement and improvement of the company's shops at St. Thomas, Ont., is under consideration. (Mar., 1909, pg. 175.)

Prince Edward Island Ry.—A Charlottetown, P.E.I., press report states that the building of what is known as the North Shore branch will be proceeded with at an early date. This line will, it is said, connect Kensington and New London, a distance of about 12 miles. (Feb., pg. 113, and Dec., 1910, pg. 1015.)

Prince Edward Island Tunnel.—In a discussion in the House of Commons with respect to the possibility of building a tunnel between Prince Edward Island and New Brunswick, the Minister of Public Works stated, Jan. 23, that he intended to submit a motion during the present session to have a survey made. (Oct., 1910, pg. 831.)

Railway to Hudson Bay.—It is expected that an announcement will shortly be made by the Dominion Government with respect to the policy to be pursued in regard to the building of the railway to Hudson Bay. The Saskatchewan Legislature has had under consideration a resolution favoring Government ownership and operation of the line. (Feb., pg. 105.)

Reid Newfoundland Ry.—The residents of the Burin district of Newfoundland are petitioning the Government to consider the building of a branch line from Come-by-Chance, or some other point on the main line, through the district to Baine Harbor. The branch would serve a population of about 20,000. (Feb., pg. 155.)

St. John Valley Ry.—We are officially advised that the preliminary surveys, made by engineers under the direction of D. F. Maxwell as Chief Engineer of Survey for the New Brunswick Government, have been completed and the estimates made. The report has been submitted to the Government, and it is expected it will soon be made public. The surveys cover the following sections of the route:—Fredericton to St. John, 74 miles; Evandale to Westfield, 20 miles; Westfield to Hampstead, 25 miles; Woodstock to River du Chute, via Sackville and Centreville, 44 miles.

The Minister of Railways gave notice in the House of Commons, Feb. 6, that he would bring forward a resolution authorizing the Government to lease the projected line from the New Brunswick Government, on its completion, for 99 years, for 40% of the gross receipts. The line will extend from St. John to Grand Falls, on the National Transcontinental Ry., 220 miles, and is to be built to the N.T.R. standard. The notice of motion provides that the Government may enter into a contract for the operation of the road in sections when completed and equipped, from Fredericton to Woodstock, from Fredericton south, 50 miles, and for each 25 miles thereafter until the line becomes completed and equipped from Grand Falls to St. John. (Feb., pg. 113.)

The St. Louis and Richibucto Ry. is an extension of the Kent Northern Ry. from near Richibucto to St. Louis, N.B., about seven miles. About 15 years ago, owing to the collapse of a bridge, the line ceased to be operated, and it has since lain derelict. A petition has been forwarded to the Minister of Railways asking that the line be inspected with a view of its being taken over in connection with other lines by the Intercolonial Ry. The applicants state that the line could be put in order at a small expense, as, with the exception of the fallen bridge, and decayed ties, it is in good condition. (See Kent Northern Ry., Dec., 1907, pg. 889.)

Sarnia, Chatham and Windsor Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Sarnia to Chatham, and thence to Windsor, Ont., with ferry boats across the Detroit and St. Clair rivers. Pringle and Guthrie, Ottawa, are solicitors for applicants.

Saskatoon and Hudson Bay Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Saskatoon northeasterly to Melfort, Sask., thence to Pas Mission, about 200 miles. The provisional directors are:—F. O. Fowler, Winnipeg; V. T. Bartram, Toronto; C. O. Foss, St. John, N.B.; H. Pardee, Philadelphia, Pa.; J. B. Craven, New York city. (Dec., 1910, pg. 1013.)

Shaw Lumber and Ry. Co.—Application is being made to the Saskatchewan Legislature to incorporate a company with this title to carry on a general lumbering business, and in connection therewith to build railways as follows: from Shaw's Siding southwesterly for 30 miles to timber limit 981, with a branch of 15 miles to the northern part of tp. 43, range 10, west second meridian, and from Shaw's Siding northerly for 30 miles to timber limit 960. The provisional directors are T. Shaw, Jas. Shaw, Dauphin, Man., and J. C. Shaw, Prairie River, Sask. (Feb., pg. 113.)

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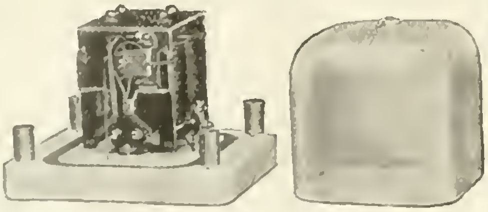

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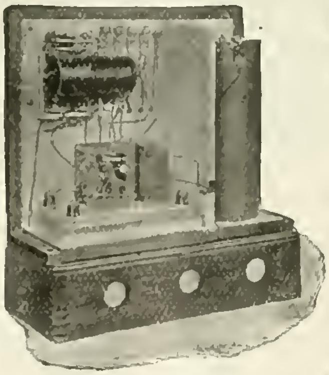

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MONTREAL TORONTO WINNIPEG REGINA CALGARY VANCOUVER

Simcoe, Grey and Bruce Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Southampton to Orillia, Ont., passing through Owen Sound, Meaford, Thornbury and Collingwood. The provisional directors are:—C. M. Bowman, Southampton; J. B. Tudhope, Orillia; W. T. Toner, Collingwood; H. Pedwell, Thornbury; H. Cleland, Meaford; S. J. Parker, J. McLaughlan, C. Eaton, F. W. Harrison, E. Lemon, R. McDowell, B. Allen, A. G. Mackay, Owen Sound. The bill was opposed in the House of Commons by the Ontario Government on the ground that the proposed company was one which should be under provincial jurisdiction. On the other hand, it was pointed out that the company proposed to carry on a business as steamship owners on the Great Lakes, with vessels running to U.S. ports. The bill was finally passed.

In the course of his inaugural address recently the mayor Owen Sound said the Meaford railway proposition (or better still, a railway from Orillia to Kincardine, via Collingwood, Meaford, Owen Sound, Allenford and Southampton) would be submitted for consideration during the year. A proposal was well advanced to build a railway from Meaford to Owen Sound, and the council would be asked to act in the same very shortly. (See Owen Sound and Meaford Ry., Dec., 1910, pg. 1015.)

Temiskaming and Northern Ontario Ry.—The speech from the throne at the recent opening of the Ontario Legislature stated that during the past year the line had been fully completed to a junction with the National Transcontinental Ry. at Cochrane, Ont., and that the Government was building a branch line into the Porcupine country, which it was expected to have completed by June 30.

On returning from a recent inspection of the line, J. L. Englehart, Chairman of the Commission, said the proposed terminus of the branch would be about a mile west of the southerly end of Porcupine Lake. Construction was being gone on with at a satisfactory rate, and the line would be completed by June 30. The Chief Engineer stated that there were 700 men at work, and it was expected that an additional 500 would be at work by Feb. 28.

The question of the building of a branch to Gowganda is being urged by the people of the district, and a deputation waited on the Government Feb. 15 to advocate it. (Feb., pg. 113.)

The Northern New Brunswick and Seaboard Ry., from Nipisiguit Jct., on the Intercolonial Ry., to the Bathurst iron mines, N.B., 16.9 miles, has been completed. The contractors were A. and A. W. Wheaton. (Oct., 1910, pg. 827.)

The Toronto, Hamilton and Buffalo Ry. is reported to have secured options on a considerable area of property in the northeastern section of Hamilton, Ont., with the object of building a spur line to the Canadian Westinghouse Co.'s works and other industrial establishments. The matter is expected to come before the city council at an early date in the form of an application to build the line across Princess St. (Feb., pg. 115.)

Thunder Bay, Lake Nepigon and St. Joe Ry.—The Port Arthur city council is asking the Ontario Legislature to revise the act incorporating this company, and to authorize the city to acquire the companies' rights and powers, and to proceed with the construction of the railway.

Winnipeg River Ry.—Application is being made for the incorporation of a company with this title to build a railway from Winnipeg to Lac du Bonnet, Man., about 65 miles, with power to build branch lines.

Railway Commissioners' Traffic Orders.

Summaries of other traffic orders are given on another page under "Orders by Railway Commissioners":—

Freight Rates to and From Kenora.

12685. Sept. 23, 1910.—Re application of the Board of Trade of Kenora, Ont., complaining that rates charged by C.P.R. on inward freight traffic to Kenora from Port Arthur and Fort William, and on outward freight traffic from Kenora, are discriminatory in favor of Winnipeg. It is ordered that the company publish and file on or before Feb. 15, 1911, a freight tariff (or tariffs) placing the rates from Port Arthur and Fort William to all stations intermediate to Winnipeg upon the same relative scale, with due regard to mileage, as the rates from Port Arthur and Fort William to Winnipeg, and that on or before the said date the company publish and file a special "town" tariff of rates on general merchandise distributed from the towns of Kenora and Keewatin.

Mining Students Rates to British Columbia.

12829. Jan. 26.—That the C.P.R. be granted leave to carry a party of mining students of McGill University at a special rate of $40 per capita for the trip from Montreal to Rossland, Phoenix and Greenwood, B.C., and return, or at a rate of $50 per capita from Montreal to Vancouver, B.C., and return, including side trips to Rossland, Phoenix and Greenwood, B.C. That the company be granted leave to carry such party, if desired, over its lines from Sudbury to Sault Ste. Marie and back at proportionate rate per capita of $2.75. That any other parties desiring to travel for the same purpose to British Columbia, or any other mining district, be granted equally favorable terms, until otherwise ordered by the Board.

Montreal Park and Island Ry. Passenger Fares.

12852. Jan. 25.—Re application of Montreal Park & Island Ry. under sec. 331 of the Railway Act. for approval of a standard passenger tariff applying on its lines a rate of 3c. per mile, with a minimum fare of 5c., subject to such special fares, if any, as may be in force under any agreements made by the company with the municipal authorities of the district. It is ordered that the application be refused, and that the company, not later than Feb. 15, 1911, file for the Board's approval a standard passenger tariff specifying a maximum toll of 2½c. per mile, to be charged on the company's existing lines of railway.

Montreal Terminal Ry. Passenger Fares.

12853. Jan. 25.—Re application of Montreal Terminal Ry. under sec. 331 of the Railway Act, for approval of a standard passenger tariff applying on its lines a rate of 3c. per mile, with a minimum fare of 5c., subject to such special fares, if any, as may be in force in any district traversed by the company with the municipal authorities of the district. It is ordered that the application be, and it is hereby refused. And that the company, not later than Feb. 15, 1911, file for the Board's approval a standard passenger tariff specifying a maximum toll of 2½c. per mile, to be charged on the company's existing lines of railway.

Compliance with General Interswitching Orders.

12901. Feb. 6.—Re order 4988, July 8, 1908, known as the General Interswitching Order, and circular letter 58, Dec. 23, 1910, calling the attention of railway companies to the fact that many of their tariffs are not in accordance with the general interswitching order, and requiring that such variation from the order be removed and new tariffs published and filed without delay. Upon its appearing that the requirements of the circular letter have not been complied with, it is ordered that the railway companies whose tariffs of interswitching tolls have not been prepared in accordance with the said order, as amplified in the Assistant Chief Commissioner's judgment of Nov. 26, 1910, file new tariffs of interswitching tolls, in accordance with the provisions of the order, not later than March 1, 1911.

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Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers to distinctly understand that we are not paid for the publication of any of this matter and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

A. O. Norton, Coaticook, Que., has brought out an entirely new jack which is of interest to railway mechanical men, it being stated that it is four times as fast as other ball-bearing jacks, and absolutely safe and reliable.

The Safety Car Heating and Lighting Co., in its monthly pamphlet, in addition to a number of interesting items, gives detailed descriptions of its remodelled carburetor lamps, old and new hot water heaters and electric deck lamps.

Burton W. Mudge & Co., railway supplies, Chicago, have elected T. H. Garland, a Vice President. His attention will be directed to the development of car ventilating and refrigerating devices, patented by him while Superintendent of Refrigerator Service of the Burlington System.

The Duquesne Steel Foundry at Kendal station has been using oil fuel in two of its open hearth furnaces with Tate, Jones & Co.'s equipment for several years. It is now abandoning the use of natural gas and using oil exclusively, and has let the contract to Tate, Jones & Co., Pittsburgh, Pa., for the equipment of its last and third furnace with the Kirkwood system.

The Northern Engineering Works, Detroit, Mich., has issued its crane catalogue 30, fully describing and illustrating the various classes of cranes made. The illustrations include among other cranes in operation in railway car shops, and car shop yards, foundry service, electric power plant, power stations, for lifting car bodies, locomotive cranes, coal storage electric transfer cranes, etc.

The Pay As You Enter Car Corporation issue of $250,000 7% cumulative preferred stock at par, with a bonus of 30% of common stock, is reported to have been fully subscribed. The authorized capital is $5,000,000, of which is issued, $1,500,000 cumulative preferred stock at 7% and $2,500,000 common stock. There is also $1,000,000 of common treasury stock. The earnings for 1910 were $365,000, from which $105,000 preferred interest was paid. It is announced that the Pay Within Car Co., which owns certain patents considered to be advantageous, has been absorbed. Duncan McDonald, General Manager Montreal St. Ry., is President, and W. G. Ross, ex-Managing Director Montreal St. Ry., is a director.

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During Dec. 1910, letters patent were issued in respect of Dominion railway lands, to the Grand Trunk Pacific Ry., for 102.01 acres.

The Intercolonial Ry. management, though not under the Board of Railway Commissioners' jurisdiction, has decided to adopt the new sleeping and parlor car tariff as approved for lines under the Board's jurisdiction.

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Report on Ties by Canadian Society of Civil Engineers Committee.

At the annual meeting of the Society in Winnipeg recently, a report was presented by the committee on ties, signed by the Chairman, D. MacPherson, Assistant Chief Engineer National Transcontinental Ry., the names of the following members of the committee being appended: H. D. Lumsden, F. P. Gutelius, M. J. Haney, W. McNab, J. G. Sullivan, H. A. Woods, M. H. McLeod, A. F. Stewart, W. A. Bowden and H. G. Kelley. The chairman, in transmitting the report stated that W. B. MacKenzie and T. C. Burpee, of the Intercolonial Ry., dissented from the part of the report about the use of 10½ ft. ties. The chairman added:—"H. Holgate disapproves of the form, the subject matter and the conclusions, but gives no reasons for doing so; presumably, he will give these reasons when the report is under discussion. Under these circumstances, I have not attached the names of these three members of the committee to the report."

Following is the report:—

At the last annual meeting it was resolved—"That the committee on ties be continued, and that it confine its attention more particularly to the artificial preservation of ties, their size, and the timber best suited to the purpose."

Your committee beg leave to report as follows:—In their report, presented to the Society in Jan., 1909, it was pointed out that some 12,000,000 ties were being used annually in Canada, which number was being continuously and largely increased, so that probably within the next 40 years, the consumption will be about 120,000,000, or equal to the present annual consumption in the United States.

Assuming the following data—average cost of untreated ties at point of shipment at 50c.; freight and putting in track, 15c.; total, 65c.; average life, 8 years. Initial cost of treated tie the same as above; cost of treatment, including extra handling, 25c.; total, 90c..; average life, 16 years. Then, if 12,000,000 untreated ties are being used annually, and their average life is 8 years, there must be about 96,000,000 in use, and the capital necessary to place these ties in the track and provide for their renewal every 8 years, on a 4% basis, would be $2.41 per tie. The capital necessary to place treated ties in the track and provide for renewal every 16 years would be $1.93 per tie. The total capital necessary:

= 96,000,000 × $2.41 = $231,360,000 for untreated ties.

96,000,000 × $1.93 = $185,280,000 for treated ties.

Total difference in capital ..$46,080,000

$46,000,000 at 4% = $1,843,200 = eventual annual saving.

As the cost of untreated ties and the numbers used are increasing very rapidly and the cost of treatment is likely to be reduced, surely no more need be said to prove the urgent necessity of at once beginning the introduction of treated ties at all points where their capitalized values will show a fair saving on the investment, even if the question is only viewed from the standpoint of economy for the railways. When the broader view of conserving our supplies, for fear of depletion, is considered, it assumes enormously greater importance.

Tie preservation by creosoting or otherwise has not hitherto received the attention it deserves in Canada, but it doubtless soon will, as the railway companies are becoming alive to this really vital subject. The American Railway Engineering and Maintenance of Way Association have, however, taken the matter up vigorously, and valuable information can be found in their proceedings, vol. x, part 1, for 1909, and subsequent volumes. In co-operation with this Association, Purdue University made a series of tests to determine whether or not treatment of tie timber had any injurious effect on the strength of the material. The conclusions arrived at, from these tests, are briefly summarized as follows:—

No weakness was shown by treated ties, as compared with natural ties, either in rail-bearing or spike-holding strength, except in the case of ties treated with crude oil, and, even with that treatment, the weakening in rail-bearing was of a temporary character.

The average stress under the rail at the elastic limit on the various woods was as follows: red oak, 1,131 lbs. per sq. in.; short leaf pine, 642 lbs.; long leaf pine, 690 lbs.; red gum, 830 lbs.

The extremes of atmospheric temperature have an appreciable effect on the strength of wood, especially when green. The warm timber was from 9% to 17% weaker than the very cold timber.

The direct pulling resistance of common spikes in the various woods was as follows, in their natural state: red oak, 7,639 lbs.; short leaf pine, 4,359; long leaf pine, 3,955; red gum, 3,883.

The lateral resistance of common spikes in the various woods was as follows, loads at elastic limit, in lbs.; red oak, 2,026; red gum, 1,704; long leaf pine, 1,650; short leaf pine, 1,619. The lateral resistance of screw spikes depends on the diameter and length of shank under the head, elastic limit of the metal, and character of the wood.

The screw spike had from 1.7 to 3.8 times the strength of the common spike against direct pull, and from 1.2 to 2.4 times the strength of the common spike against lateral resistance. The smaller screw spikes gave greater lateral and direct resistance per lb. of weight than the larger spike. The strength of the common spike against withdrawal is increased when driven to follow a bored hole. The shape of the point of a common spike, however, leads it to drive out of a bored hole, and the resistance to withdrawal is thereby lowered.

A very interesting paper on the economic comparison of railway ties of different materials, written by N. M. Campbell, was published in Sept., 1910. The results are summed up in a table giving the order of merit of different kinds of wood treated by the three processes, zinc chloride, creosote, and Rueping, as compared with untreated ties, taking into consideration the first cost in the track and the average life. Strange to say, the first in order is untreated catalpa wood, but, as the writer does not give the value of treated ties of the same wood, this does not prove that it might not be still more valuable if treated. The second in order of merit is cypress, also untreated, for which a life of 10 years is claimed, and initial cost in track 54c. The same wood, when treated with creosote, comes 19th in order of merit, having a life of 17.5 years and first cost of 95c. When treated by the Rueping process, the order of merit is 6, life 15 years, and cost in track 81c. Oaks, untreated, come 30th in order of merit, 23rd when treated with zinc chloride, 15th when creosote is used. Pine, when treated with creosote, comes 3rd in merit, 28th when zinc chloride is used, and 29th when untreated. Tamarac, treated by the Rueping process, comes 10th in order of merit, but no mention is made of untreated tamarac or cedar. The table below will illustrate more clearly the comparative values of the woods above mentioned:

Material.	Treatment.	Average life, years.	Cost in track.	Capitalization 4%.	Annual cost.	Order of Merit
Catalpa..	None	20	0.60	1 104	0.044	1
Cypress..	None	10	0.54	1.664	0.066	2
Cypress..	Rueping ...	15	0.81	1.822	0.073	6
Cypress..	Creosote ...	17.5	0.95	1.952	0.078	19
Pine....	Creosote ...	15	0.75	1.687	0.067	3
Pine....	Zinc chloride	8	0.710	2.636	0.106	28
Pine....	None	6	0.615	2.933	0.117	29
Tamarac.	Rueping ...	15	0.81	1.822	0.073	10

From the foregoing it appears that, for the best results, different woods require different treatments. The Rueping process is a creosote treatment. It differs from ordinary creosoting in that the timber is first put under air pressure sufficient to fill all the wood cells with air. The creosote fluid is then forced in at higher pressure, and the theory is that, after the greater pressure is released, the expansive force of the air throughout the interior of the timber will expel part of the fluid from the cells, leaving the walls of the cells painted with creosote instead of having the cells filled with it.

The cost of treating ties, of course, will vary largely, and will depend, to a great extent, on the numbers treated, the efficiency of the plant, and the nature of the treatment, but the Atchison, Topeka and Santa Fe Ry, which has used the Rueping creosote treatment pretty extensively, reports that the cost of treating inferior pine ties is 20c.

H. G. Kelley, a member of your committee, reports satisfactory personal experience with the Burnettizing process at a cost of from 15 to 20c.

With regard to size of ties, the 8 ft. length, 6 ins. to 7 ins. thick, with face from 6 to 10 ins., is in most general use, but it is somewhat difficult to find any logical reason, other than initial cheapness, for adopting an 8 ft. tie for standard gauge track. As this length was adopted, and has been in use for such a long period, it is very easy to understand why the railway companies should hesitate to change, for the transition period would be both troublesome and costly. However, as the weights of rolling stock have more than doubled in the past 20 years, and steel rails have been increased in, roughly, the same proportion, it seems about time to make some correspondingly adequate change in tie dimensions. It is true that the spacing of ties has been, of late years, made slightly closer, but, while the loads have been increased from 200 to 300%, the base of the superstructures to carry these loads, or the base area of the ties under a rail length, has been increased less than 50%. As there is a practical limit to close spacing of ties, on account of the difficulty of properly tamping them when spaced closer than 20 in. centres, the only resource left is to lengthen them, if more supporting area is required. The 8 ft. tie, not only does not give sufficient support, but it is impossible to utilize its whole length for fear of breaking it, owing to the distribution of the loads on track of standard gauge.

The distance from the end of an 8 ft. tie to the outer edge of a 5 ft. rail base is about 16 ins., and the best practice is to firmly tamp such ties only 16 ins. from the rails each way. The reason for this is that, if fully tamped to the centre of the track, they would give a firmer support, in proportion to the load, at centre than at both ends, and the ties would break. In other words, you cannot utilize much more than 75% of the bearing capacity of such a length of tie under a standard gauge track, without destroying the tie itself. In order to utilize the full uniform supporting capacity of the tie for its whole length, it should have the same length from the centre of rail

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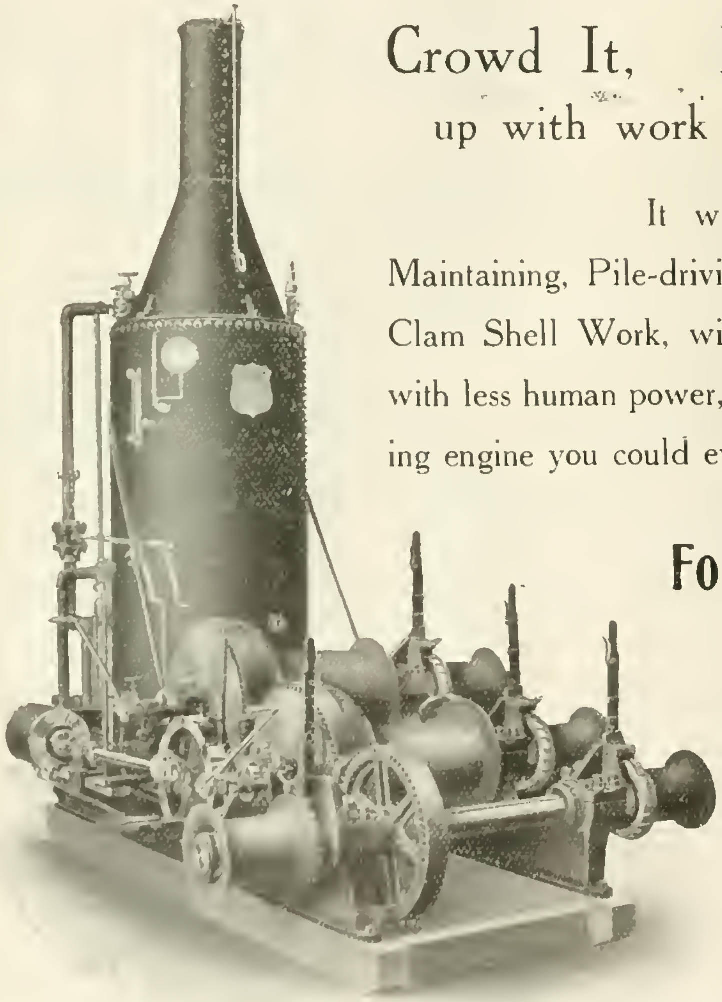

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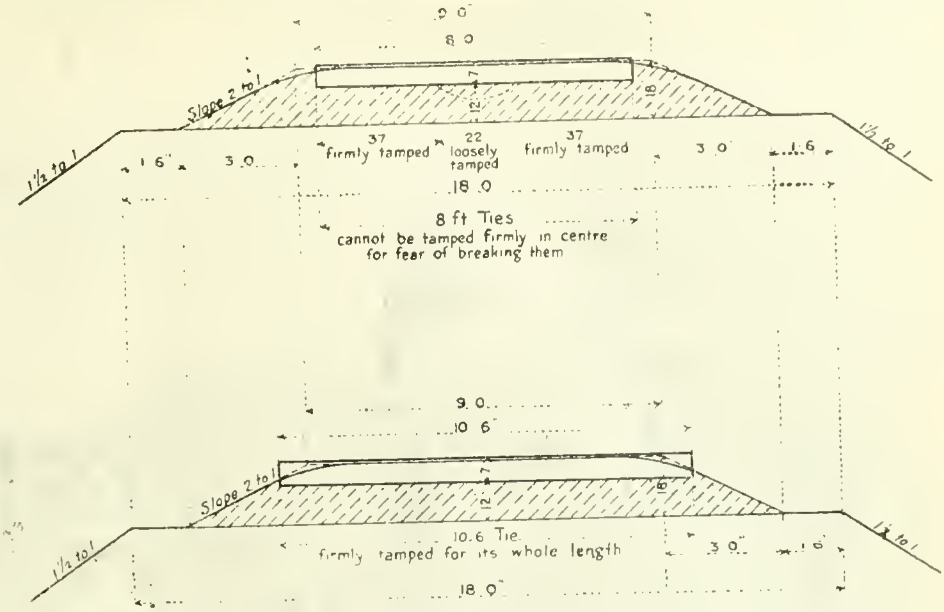
to end of tie, as from former point to centre of track, which would make it 10 ft. 8 ins.—say 10½ ft. long.

It is certain that even the best roads would hesitate to make such a radical change, and, of course, your committee would not presume to say that they should make such a departure from long-established practice, but the fact remains that strong logical reasons can be given for the use of ties 10½ ft. long, and such reasons canot be given for the use of 8 ft. ties. Ties 7 ins. thick, 10½ ft. long, with 9 in. face, would give about 70% increased support at an increased cost of only 31%. No increased width of ballast section would be necessary for the longer ties, because no shoulder of ballast would be required at the ends of such ties, so that the actual yardage of ballast required would be slightly decreased by the increased space occupied by the ties. This is fully shown on the accompanying diagram, drawn to scale, illustrating how ties 10½ ft. long may be used in an ordinary ballast section for 8 ft. ties, without requiring any extra ballast.



Note.—8 ft. ties tamped firmly for 16 ins. each way from rails only utilize the supporting area of 77% of tie, equal to 74 ins. in length, or 740 sq. ins. for a tie of 10 in. face. 10½ ft. ties could be used in the same ballast section, firmly tamped for the whole length, giving the maximum supporting area of 1,260 square inches, or equal to 170% the efficiency of 8 ft. ties.

At the present average price of 50c. for 8 ft. ties, they cost about 36% of cost of 80 lb. rails and fastenings, which would only be increased to 42% by using the longer ties. The improved condition of track and saving in maintenance of rails and rolling stock would probably soon more than offset the difference in cost of ties.

It has been suggested that longer ties would make drainage more difficult, but, if good ballast is used, there would seem to be no difficulty in that regard, and if the ballast is inferior, the loose tamping under the centre of 8 ft. ties and the shoulder required at the ends of them would form pockets to retard drainage that would be obviated by the use of long ties. Your committee would suggest experimental tests with ties 10½ ft. long.

The best kinds of wood to use for ties depends upon so many conditions of climate, availability, and cost of timber treated and untreated, that it is very difficult to make definite recommendations. For general use in our Canadian climate, however, the following woods, if untreated and used with tie-plates, might be recommended, and they are given approximately in their order of merit, having regard to life and initial cost: Cedar, tamarac, oak, yellow pine, hemlock. For treated ties, used also with tie-plates, the order of merit would be about as follows: Yellow pine, tamarac, hemlock, oak.

T. C. Burpee, Engineer of Maintenance of Way and Works, Intercolonial Ry., who was a member of the committee, dissented from the report in a letter to the chairman, of which he has furnished us a copy as follows:—"I cannot subscribe to a report calling for ties 10½ ft. long. Breakages in ties might be avoided if in a country without frost; but in this country I believe that 75% of 10½ ft. ties would be broken each year. My experience is that our 8 ft. ties, which are being used at the present time, break very much less than the 9 ft. ties which we used on the I.C.R. some years ago, and if 9 ft. ties would break more than 8 ft. ones, of course breakages of 10½ ft. ties would be proportionately greater. I do not think that our track, when we were using 9 ft. ties, was any better than it is at the present time with 8 ft. ties. I am inclined to think it was not as good, and yet our rolling stock is very much heavier than it was at that time. However, I presume a practical test is the best way to demonstrate which would be preferable."

W. B. Mackenzie, Chief Engineer, I.C.R., also dissented as follows:—"I agree to the report as modified, except the matter of the long ties, and my reasons are as follows:—Very considerably more timber and larger timber would have to be used, thereby increasing the destruction of standing timber. They would cost more. The freight would be increased. The cost of labor for handling, putting in and taking out would be doubled, and the maintenance would be increased. One man can handle an 8 ft. tie, but two men would be required to handle a 10½ ft. tie. It would require much more digging to get them in or take them out, and in cuttings this would be a very serious matter. In yards where there are many leads, retaining walls, etc., the 10½ ft. tie could not be used at all. A short tie comes down to surface in the spring much quicker and more evenly than a longer tie. This is because there is more chance for gravel to work under a long tie than a short one, while the frost is coming out. Some time ago a writer in one of the scientific papers proved by figures that 8½ ft. was the best length for ties; as this length was all that was practically useful in keeping up the track; but I cannot at present give the paper or the date. No doubt heavy long ties are all right over bogs. What I think is that while you might be able to prove your 10½ ft. scientifically correct, the change would be so radical that no notice would be taken of that part of the report by practical men. It would be no harm to say that trials of longer ties should be made."

In the discussion on the report G. A. Mountain asked who recommended the use of long ties and from what experience the information had been derived.

D. MacPherson said the committee had not recommended the immediate adoption of 10½ ft. ties, but rather experimenting with or testing them, with a view to improving the present practice, which has not kept pace with improvements in other parts of the permanent way. It seemed to him that good reasons for this suggestion were given in the report, but the committee invited the fullest discussion, and would be glad to hear all the good reasons that could be urged against the use of such long ties or in favor of the present practice. He had had personal and favorable experience with the use of long ties over bogs and places where the track crept badly, and had recently been advised by an engineer, who worked on the London & North Western Ry. in nngland, that 10½ ft. ties were used as standard on the main lines of that road. As this was one of the best lines in England, and ties were much more expensive there than here, it would appear to be a strong point in favor of 10½ ft. ties. At all events it was not logical that railways should continue using the same dimensions for ties that were used 50 years ago, when the weights of rolling stock had been increased several hundred per cent. He accepted the responsibility of suggesting these long ties to the committee, and some members thereof evinced considerable interest in the matter. It could not be expected that the railways would immediately begin the general use of 10½ ft. ties, but it might be to their interest to try them on new lines, where heavy traffic was expected, and the chances were they would prove eminently satisfactory. The committee suggest the testing of 10½ ft. ties, that is all.

The report was adopted, the President, Col. Ruttan, having stated that the Society should be very careful not to adopt anything definitely that had not been fully tried, but he saw no harm in adopting the report suggesting that tests be made.

In reply to the President's remarks D. MacPherson said the committee merely suggested the testing of 10½ ft. ties.

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The Quebec Branch of the Canadian Society of Civil Engineers has elected the following officers for the current year:—Chairman, P. E. Parent; Secretary Treasurer, S. S. Oliver; Executive Committee, A. R. Decary, W. R. Russell, R. O. Sweesey, E. A. Hoare, L. A. Vallee, A. E. Doucet.

The British Columbia Legislature has under consideration some amendments to the Health Act, by which the Provincial Board of Health may make regulations applicable to railway construction camps, for the purpose of preventing nuisances and the outbreak or spread of disease; for the provision of duly qualified medical practitioners by employers of labor, for the erection of permanent or temporary hospitals for such construction camps, and for providing for the construction arrangements and inspection of houses for the accommodation of men employed on such railway construction.

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ESPLANADE STREET EAST, TORONTO

The Quebec Bridge.

Replying to questions in the House of Commons Jan. 30, the Minister of Railways said the firms tendering for the building of the superstructure of the Quebec Bridge, gave dates for the completion of the work varying from June, 1914, as the earliest, to Dec., 1916, as the latest, all dates being contingent upon the substructure being completed by Nov. next. The cost of clearing away the debris of the collapsed bridge has been, to date, $31,995 for removal of the old steel, and $13,644 for the removal of the false work, the contract price being $45,000 for the first work and $22,750 in the second. The total cost of the bridge to the country to date has been $7,154,987.49. The steel remaining the property of the Government is calculated to be 22,640,594 lbs. "It is very difficult," he added, "to determine the value of this material, taking into consideration the expense of handling, loading, transporting and having no knowledge of the use to which it will be put. For the present all that can be figured on is what it would be worth as scrap, which has a value of about $10 a ton. This would make this material worth about $113,000. It is difficult to estimate the value of the material in the present piers, in regard to the new structure, but a safe estimate would be $300,000."

In replying to a request in the House of Commons, Feb. 6, for copy of advertisement for tenders, and the specification and contract or proposed contract for the erection of the Quebec Bridge, the Minister of Railways said:—The situation is this. When the Government took over the work of reconstructing the bridge, we appointed a board composed of three eminent bridge engineers who were to prepare the plans, and be responsible for the construction on those plans. Three eminent engineers were named by order in council: Mr. Vautelet, Montreal; Mr. Fitzmaurice, London, Eng., and Mr. Modjeska, Chicago. In the order in council there was a provision that if these engineers did not agree on any point, two other eminent engineers should be called in to advise with them, and the board, composed of the three original members and the two additional ones, should decide the points of difference. On several occasions differences arose, and two other eminent engineers were appointed to the board for the time being, and the points of difference settled. But when it came to the time for advertising for tenders, two members of the board were not in perfect unison with the chief engineer and chairman as to the design. It might be said that there had been a difference of opinion as between the principle of doubling the intersections, and singling the intersections. The two members of the board who did not agree entirely with the Chairman and Chief Engineer as to the design which had been prepared, agreed that tenders should be called on this condition, and a resolution was passed by the board. The resolution provided that tenders should be called on the official design prepared by the chairman and chief engineer, and that each tenderer would be asked to submit a plan of his own for the erection of a bridge, and if that plan was better than the official design, it should be adopted. On that condition tenders were called for.

Some 35 different propositions were submitted—not 35 plans. These were all submitted by four different tenderers—and by the board. The board's design, called the official design, contained a design with several modifications—nos. 1, 2, 3, 4 and 5, I think, with little variations. From the St. Lawrence Bridge Co. there were five or six modifications of the one design. A German company submitted a design of its own, as well as a tender on the official design. The Pennsylvania Steel Co. submitted a design for a suspension bridge in addition to tendering on the board's design. Previous to this, during the summer Mr. Fitzmaurice, who had been ill some time, resigned. And his resignation was accepted. C. E. Macdonald, once president of the Engineers' Association of New York, a native of Leeds county, now living in Gananoque again, was appointed in Mr. Fitzmaurice's place. These three met and looked over the tenders and the various propositions. They reduced the number which ought to be considered to the tenders on number 5 of the official design and propositions (a) (b) and (c), if I remember correctly, of the St. Lawrence Bridge Co. That company is composed of two companies, the Canadian Bridge Co. at Walkerville, Ont., and the Dominion Bridge Co., Montreal, and these two formed a third company for the purposes of this work. There then remained tenders to be considered from the British Empire Co. of England, from the German company, from the Pennsylvania Steel Co. and the St. Lawrence Bridge Co. on the official design, and the other propositions, (a), (b) and (c), on their own designs from the St. Lawrence Bridge Co. They tendered on both. No company sent in a tender on its own design without tendering also on the official design. The question to be decided was as between the tenders on the official design, the lowest of which I have no hesitation in saying, was the British Empire Co., and the counter propositions of the St. Lawrence Bridge Co. on its own designs. The board recommended to me that a substantial bridge could be erected on either of these propositions. I replied, asking them to perform their whole duty, and tell me which one was the better, if there were a better. Mr. Macdonald and Mr. Modjeska favored one of the designs of the St. Lawrence Bridge Co., while the chief engineer and chairman, Mr. Vautelet, could not coincide with this, as he thought the official design was fully as good, or better, and was considerably cheaper. After waiting for some time and consulting with the board as then constituted, to see if they would not make me an unanimous recommendation, I came to the conclusion that they would not, and so proceeded to act under the order in council, adding two other eminent engineers to the board for the purpose named in the order in council. The chief engineer and chairman was ill at his home in Montreal, and at his suggestion I sent for Mr. Macdonald and Mr. Modjeska, and they came to Ottawa. H. W. Hodge, of Boller and Hodge, Consulting Engineers, New York, a prominent engineer, and M. J. Butler, my former deputy, were elected as the two additional members. They are now sitting in Montreal, working at the question, and I hope shortly to have a decision on which the Government can act one way or the other in reference to awarding the contract.

Replying to questions on his statement, the Minister of Railways said the bridge was to be 88 ft. wide, and he understood both designs under consideration conformed to that measurement. The question of a tunnel had not been seriously considered, although he had discussed it with some interested persons. The conclusion he had personally formed was that the river banks, being very high, a tunnel would have to be started a very long way back from the river on either side, and that a tunnel was not as practicable as a bridge. The bridge floor was to be 150 ft. above highwater, a height which had been decided upon after very careful consideration.

It was reported Feb. 9 that the engineers had reached a decision, and that it had been communicated to the Government, but no official announcement had been made when this was written. The report states that the design and tender of the St. Lawrence Bridge Co. is favored, the estimated cost of the structure being $13,500,000. The tender of the British Empire Bridge Co. is stated to be about $400,000 less than that of the St. Lawrence Bridge Co.

Replying to questions in the House of Commons Feb. 9, the Minister of Railways said the Department did not consider the construction of the tunnel at the site of the Quebec Bridge practicable. He had not employed any engineer to report upon the feasibility and cost of such a tunnel.

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British Columbia's Aid to Railways.

In the balance sheet of the province of British Columbia recently presented to the Legislature for the year ended Mar. 31, 1910, among the assets are included: Victoria and Sidney Ry., paid for interest on company's bonds, $106,215; Nakusp and Slocan Ry., mortgage account, $647,072, and paid for interest on bonds, etc., in excess of Dominion subsidy and net earnings, $160,643.59; Shuswap and Okanagan Ry., paid for interest on bonds, etc., in excess of the Dominion subsidy and net earnings, $391,938.38, making a total of $1,305,868.97. The liabilities include $647,072 of railway guarantee bonds under the Nakusp and Slocan Ry. Aid Act, of 1894.

A return appended shows the sums guaranteed by the province under the various railway acts:—Shuswap Ry. guarantee act of 1890, guarantee of interest of the Shuswap and Okanagan Ry. bonds, 4% on $1,249,760, amounting to $49,980.40 a year, the bonds being terminable in 25 years from July 1, 1890. Nakusp and Slocan Ry. Aid Act, 1894, guarantee of principal and interest of $647,072 of the N. and S. Ry. bonds, principal payable in 1918, interest at 4% equals $25,882.88. Against the guarantee to these two railways the province receives 40% of the gross earnings under agreement with the C.P.R., which is operating both lines. Victoria and Sidney subsidy act, 1892, guarantee of interest of the V. and S. Ry. bonds at the rate of 2% per annum on $300,000 for 25 years from Sept. 1, 1892, equal to $6,000 a year. The total annual liability is therefore $81,863.28, less the 40% receivable from the C.P.R., which for the year ended Mar. 31, 1910, was $44,308.48 for the Shuswap and Okanagan Ry., and $5,191.92 for the Nakusp and Slocan Ry.

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T. Howell, General Immigration Agent C.N.R., Toronto, left Canada for England recently to complete the organization of an immigration campaign for the approaching season.

Sir Wm. Mackenzie is at the head of a Canadian syndicate which has obtained a concession for a large dam across the Balsas River, and the installation of a large hydro-electric plant in the State of Guerrero. It is said the dam will be 150 ft. high, will cost about $2,000,000, and will be located in the river canyon near the end of the Cuernavaca, Mexico and Pacific division of the Mexican National Railway. The power is to be distributed to the capital of the state and to several mining districts. It is said the syndicate is negotiating for railway concessions in the State, and that one of the lines to be built will run from Balsas, where connection will be made with the Mexican National Railways, to the port of Acapulco, on the Pacific coast.

The Longest Continuous Double Track Railway in the World under One Management and the only Double Track Line Between Montreal, Toronto, Niagara Falls, Detroit and Chicago.

GRAND TRUNK RAILWAY SYSTEM

Finest Roadbed in Canada. Modern and Luxurious Trains. Courteous Employees. Beautiful Scenery. The Best of Everything on this Popular Route.

4 FAST TRAINS, TWO EXPRESS AND TWO LIMITED

BETWEEN MONTREAL AND TORONTO, EACH WAY, DAILY.

THROUGH TRAINS between BOSTON (via Boston & Maine R.R. and Cent. Vermont Ry.) MONTREAL, TORONTO and CHICAGO.

THROUGH TRAINS between NEW YORK, TORONTO and CHICAGO via Lehigh Valley R. R. and Niagara Falls.

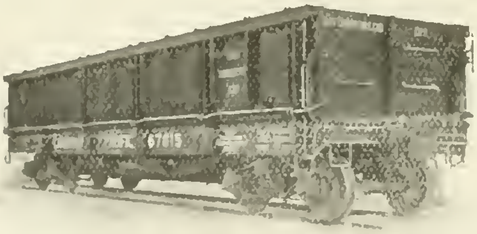
Dining and Parlor-Library-Cafe Cars on Day Trains. Pullman Sleeping Cars on Night Trains.

THE "INTERNATIONAL LIMITED" The "Railway Greyhound of Canada," the finest and fastest train in the Dominion, runs every day in the year between Montreal and Chicago.

The Lines of this Great System reach all the Principal Cities and Towns in Quebec and Ontario

W. E. DAVIS, Passenger Traffic Manager, Montreal. G. T. BELL, Asst. Pass. Traffic Manager, MONTREAL.
G. W. VAUX, Gen. Passenger Agent, MONTREAL

The Cars which are building the new Railroads of Canada

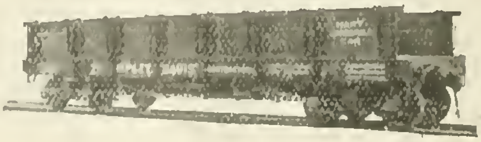


The Cars which are maintaining the old Railroads of Canada

HART CONVERTIBLE CARS

are being used extensively by

Railroads and Contractors



THE HART-OTIS CAR CO., LIMITED
MONTREAL

G.T.R. Betterments, Construction, Etc.

Central Vermont Ry.—During 1910 the company reballasted 15.9 miles of its lines in Canada, and laid new 80-lb. steel on 12.4 miles in Vermont.

The application of the New York, New Haven and Connecticut Rd. to the Vermont State Legislature for certain powers at Brattleboro, has been modified considerably, and the C.V.R. will continue to have possession of the terminal facilities there. The Legislature has passed the bill granting incorporation to the Southern Vermont Ry., authorizing the building of a line from Brattleboro to Windsor, and to arrange for the use of the Rutland Rd. terminals at Bellows Falls. The Southern Vermont Ry. will nect with the lines proposed to be built in Massachusetts and Rhode Island by the Southern New England Ry.

Press reports state that the G.T.R., which controls the C.V.R., has given instructions to proceed with the building of the lines above mentioned.

The line to be built in connection with the Southern New England Ry. part of the project will start at Palmer, Mass., and extend to Providence, R.I. The final location on the water front at Providence has not, press reports state, been finally decided on. The reports state that all surveys have been completed, that construction will be started at once, and the line be completed in two years.

Lachine, Jacques Cartier and Maisonneuve Ry.—The House of Commons has authorized the company to connect its projected lines with the C.P.R., the Canadian Northern Ry., or either of them. The Board of Railway Commissioners has refused the company's application for permission to cross the C.P.R. at Jacques Cartier Jct., Que.

Ship Fever Cemetery, Montreal.—The matter of expropriation of the land adjoining the G.T.R. at Point St. Charles, Que., which was set apart or used as a cemetery for victims of the ship fever in 1847, has been before the Board of Railway Commissioners recently, with the result that a 30 ft. strip is to be reserved, east of the monument lot, to commemorate the burial place of the ship fever victims. The company is to be allowed to acquire the rest of the land for yard extension purposes.

Ottawa Improvements.—A Gray, Resident Engineer, G.T.R., Ottawa, in an address to the Ottawa branch, Canadian Society Civil Engineers, Feb 8, referred to the work being done by the company at Ottawa. He stated that already over $2,000,000 had been expended on account of the erection of the hotel and station, and the expenses incurred in connection with the enlargement of the yards, etc. The accommodation for passenger trains had been increased 100% by the alterations, and the freight yard had its accommodation increased 50%. The tracks have been laid in the yards with 100 lbs. steel. The tracks are ballasted with broken stone instead of sand or gravel, in order to avoid dust. The changes in the freight yards alone cost $45,000. He went into the details about the retaining wall which was constructed along the canal, which cost much more than was first expected, because a boulder and gravel bottom was found for a distance where rock foundation was anticipated and piers had to be sunk. The cost of this retaining wall was $24,050. The wall is designed to carry 5,000 lbs. to the foot.

He also described the train-shed covering the eight tracks, which is to be 500 by 182 ft. The entire roof will be of glass, though the exact kind is not yet decided. It will be set in steel with steel supports for the roof. It will extend from the present baggage annex to the retaining wall along the canal. The train shed has an opening in the roof directly over the engine funnel in order to do away with the smoke in the shed as would be the case if the entire place were covered. The platforms will be, of course, of concrete. The work will be started next summer.

It is proposed to instal an interlocking switch system at the company's terminal yard and station, Ottawa, to build a new draw bridge across the Rideau canal at Elgin St., and to build a new roundhouse and repair shop at Ottawa East.

Ottawa to Toronto.—W. Wainwright, Second Vice President, is quoted as having stated that the company is planning to build a direct line from Ottawa to Toronto. Three routes are under consideration, that of the Kingston, Smiths Falls and Ottawa Ry., the Ottawa, Rideau Valley and Brockville Ry., and another interest which is advocating a route by way of Gananoque.

Sunnyside Bridge or Subway, Toronto.—The city council is figuring out the question whether a subway will be put in under the G.T.R. at Sunnyside, or the road carried over the tracks by a bridge. The board of control, Feb. 4, decided in favor of a subway 66 ft. wide at an estimated cost of $145,000, exclusive of land damages. Under the terms of the order the city will pay one-third of the cost. When the matter came before the council, Feb. 10, the city engineer and the assessment commissioner were directed to report as to the cost of both subway and bridge.

Humber Bridge, Toronto.—In connection with the new bridge which the G.T.R. is erecting over the Humber River, objection has been taken to the size of the pier which it is proposed to build in the middle of the river to carry the bridge. Replying to questions in the House of Commons, Feb. 2, the Minister of Public Works said the G.T.R. had applied for approval of plans for the bridge to his department, as well as to the Board of Railway Commissioners. The application was made to the Department under the Navigable Waters Protection Act. He purposed naming an early date to take up the matter, and due notice would be given to the city of Toronto and property owners along the river to attend.

The question asked the Minister of Public Works set out that the floor of the bridge was only "19 ft. above high-water," that "the abutments encroached upon the river banks," and that there was "at least one pier in the middle of the stream 15 ft. wide by 80 ft. long," which is said "to be more in the nature of a dam than a pier."

Wyevale to Tiffin, Ont.—There is under construction a cut-off from Wyevale, on the Penetanguishene branch, to Tiffin, Ont., on the Midland branch, 8.90 miles. The Midland Railway Construction Co., Midland, has the contract.

Galt and Elmira Branches.—A deputation is being organized at the instance of the Berlin, Ont., board of trade, to ask the G.T.R. to operate the Galt and Elmira branches by electricity.

Erie, London and Tillsonburg Ry.—An Aylmer, Ont., press report states that the G.T.R. has acquired a block of land along the creek north of the bridge at Port Burwell, for yard purposes, and that negotiations are in progress for the taking over of the charter of the E.L. and T. Ry. This company has power to build a line from Port Burwell to London, Ont. The G.T.R. already has a line from Brantford to Port Burwell. (Feb., pg. 117.)

Highways Crossing Bell Signals.

The Board of Railway Commissioners passed order 12915 Feb. 7, providing the following specifications for electric bell signals at highway crossings:—

POST.—The bell must be placed upon a post of some suitable structural material. If the post is made of wood, it must be of sound timber not less than 8 by 8 ins. and 18 ft. long, and shall be firmly set in the ground to a depth of 4 ft. If it is made of iron or steel, it shall be not less than 4 ins. in diameter, shall extend 14 ft. above the ground, and shall be firmly bolted to a concrete or other foundation constructed below the frost line. If other suitable structural material is used it must be of the length mentioned above, and of sufficient strength to carry the weight placed upon it.

BELL.—The bell shall be either of the locomotive type, the gong type, or the twin-gong type, and it must in each case emit a clear, loud volume of sound under all weather conditions. If the locomotive type is used the bell shall be of standard size (about 18 ins. in diameter); if the gong type is used, the gong shall be at least 12 ins. in diameter; and, if the twin-gong type is used, the gongs shall be at least 10 ins. in diameter.

SIGN.—A sign shall be placed upon the same post as the bell, with the word "danger" upon it in letters of not less than 6 ins. in length, to be illuminated either by direct or reflected light so as to be plainly visible after sunset. There may be added to the post, if so desired, the railway crossing sign provided for by sec. 243 of the Railway Act.

OPERATION.—The bell and the illumination of the sign shall be controlled and operated electrically and automatically by the approach of trains, in such manner that only approaching trains shall operate the signal, and the signal must remain in operation until the rear end of each approaching train has passed the crossing. The bell and lamps used for illumination may be operated from any suitable source of electric current that is continually available, or from batteries. If batteries are used they must be either chemical batteries of the caustic potash type, having a capacity of not less than 300 to 400 ampere hours, or storage batteries of the same capacity.

Telephone Dispatching on the C. P. R.

In addition to the mileage at present being operated by telephone details of which we have given from time in previous issues, it has been decided 1,528 miles will be equipped for similar operation during the current year, thus making a total of 3,782 miles of telephone train dispatching circuits on the system. These circuits cover the line as follows: From Kamloops to Calgary; Medicine Hat to Winnipeg; Fort William to Ottawa and Brockville; Saulte Ste. Marie, Mich., via Sudbury to Toronto; Windsor, Ont., to Smiths Falls; St. Thomas, Port Burwell and St. Marys branches; Quebec to Montreal; Montreal to Newport, Vt., and St. John, N.B., and the Temiskaming branch. There will also be a new copper wire strung from Toronto to Winnipeg and Toronto to Detroit, and various other wires, making a total of 4,000 miles of wire, in addition to the re-stringing of all lines now showing any evidences of decay.

Jas. Playfair, of Midland, Ont., President of the Inland Lines, Ltd., is one of the directors of the Isle of Pines Plantation Co., which is offering for sale orange and grape fruit land in the Isle of Pines.

THE STEEL COMPANY OF CANADA, LIMITED

HEAD OFFICE

HAMILTON - - - CANADA

R.R. Axles Angle Bars Tie Plate

Track Spikes Bolts and Nuts

Copper Wire and Cable

FOR

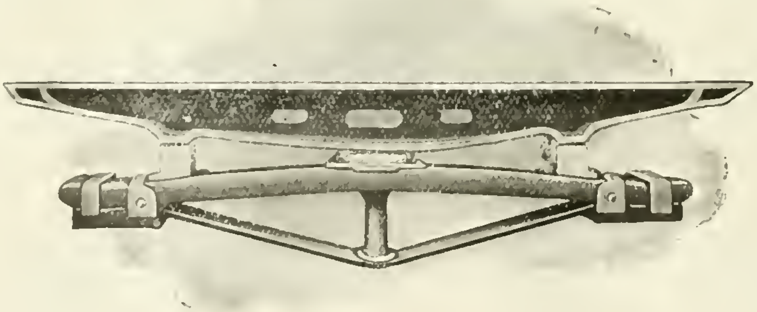
Electrical Purposes

Pig Iron Bar Iron Bar Steel

Marine and Railroad Forgings

Cast Steel Side Frames

Cast Steel Truck and Body Bolsters



Cast Steel Double Body Bolsters for Passenger Cars

Cre Cast Steel Body Bolsters

in combination with

Cre Truck Bolsters

CANADIAN RAILWAY EQUIPMENT COMPANY

TAYLOR & ARNOLD, Limited

Selling Agents——MONTREAL

Supplying Cars for Routing Over Other Lines.

In the case of the Imperial Steel and Wire Co. vs. the G.T.R. Co., Chief Railway Commissioner Mabee gave the following decision Jan. 10, which was concurred in by Assistant Chief Commissioner Scott and Commissioner McLean:

On March 12, 1910, the applicants complained to the Board that they had been receiving, during the previous two weeks, almost daily, telegraph orders from their Winnipeg agent, for carload lots of wire nails for all-rail shipment to Winnipeg via G.T.R. to North Bay and C.P.R., and via G.T.R. to North Bay, C.P.R. to Port Arthur, and C.N.R. to Winnipeg. It was also alleged that the G.T.R. was the only line in Collingwood, and that, upon application to the agent of the company there, he informed the applicants that he had orders not to place G.T.R. cars for that routing, but that he could place cars immediately if the applicants would route via Chicago; and that, if the routing asked for was insisted upon, the agent would have to order in C.P.R. or C.N.R. cars, as the case might be, notwithstanding the G.T.R. had empty cars standing in their yards. The applicants further alleged that this should not be permitted, as it was discrimination against the manufacturer located on one line of railway.

The G.T.R. on April 14 filed its answer to this complaint, among other things alleging that, at the time of the occurrence in question they were short of cars throughout Ontario, due to the outbound loaded car movement from Ontario being greater than the inbound loaded car movement, and that 60% of G.T.R. box cars were on foreign lines; that in order to protect their Canadian local business and preserve sufficient equipment for that purpose, they were compelled to place orders with the connecting lines for the foreign empties that might be required for loading their lines. It is admitted that the applicants were refused the use of G.T.R. cars for loading to Winnipeg, via the route above mentioned, namely C.P.R. and C.N.R.

It was thought that possibly the car shortage at the particular time in question might be relieved, but the applicants desire a ruling upon the facts, and we presume they are entitled to it.

Under date of April 27, the applicants allege that they are compelled to secure their business in competition with other manufacturers who have G.T.R. C.P.R. and C.N.R. facilities, and seem to be under the impression that they are in some way entitled to have the Board furnish them with just as good transportation facilities as if they were located at points where they had two or three connecting lines of railway. The applicants were advised in April last, that the Board did not regard it as reasonable that a railway company should be required to supply its cars for a short haul upon its own line and a long haul on the line of another company.

Let it be assumed that, in April last, the G.T.R. was having a shortage of cars by reason of its own equipment having gone to foreign lines. Now it seems to us that its first duty was to protect the traffic upon its own road. If the applicants were entitled to require the G.T.R. to send its cars off its own lines, every other shipper situated upon the line of the G.T.R. would have the like right, and if the railway company was in no way allowed to control the movement of its own equipment, in a very short time this equipment might practically be entirely beyond its control. This question came up for consideration as early as 1888, in a case of Riddle vs. The Pittsburgh & Lake Erie Rd., reported in 1 Interstate Commerce Reports, pg. 374, from which the following excerpt is taken:—"If complainants had a right to insist that this company should send its cars at such a time with coal to Buffalo, then every other coal mine on its line had the same right, and this would have stripped this railroad of its equipment, leaving the other business along its line to go to ruin, but none of them had any such right. The company had its legal duty to perform. Its first and most paramount legal duty to the shipping public was to make its entire freight equipment do its utmost in serving the shippers along its own line." Further, "Under such circumstances the legal duty of this railway company was, as the evidence shows it did, to operate its cars so as to keep them as much as possible on its line and confined to the business of its line."

We are not suggesting that the Board has not power to require a railway company to transfer its cars to other lines, but rather simply affirming the principle that, in times of car shortage, it is not only the privilege but the duty of a railway company to retain its equipment so that traffic upon its own lines may be properly taken care of.

In the case of the C.P.R. and the Nelson & Fort Sheppard Ry., as far back as Oct. 13, 1906, the late Chief Commissioner ruled that the N. & F.S.R. need not permit its equipment to leave its own lines, and required suitable accommodation and facilities to be furnished by the N. & F.S.R. for receiving, carrying, and delivering traffic from Salmo and Ymir to the nearest junction point with the C.P.R., and further requiring the latter company to furnish adequate and suitable accommodation and facilities for receiving, carrying and delivering such traffic brought to that point for furtherance to points on the C.P.R., from time to time, as might be required

We do not think, assuming that the G.T.R. was honestly endeavoring to take care of the traffic upon its own lines, that, at the time in question, the applicants were entitled to have them compelled to furnish their own cars for the movement of this traffic to Winnipeg, along the route they desired.

With reference to the point taken by the railway company that it would furnish cars for this traffic routed via Chicago, the railway company answers that they had foreign cars upon their lines that they could have utilized, instead of of moving westward empty. In any event, it is well settled that the initial or originating railway company is entitled to as long a haul upon its own lines as may be reasonable. This is laid down in the English case of the Plymouth, Devonport and South-Western Jct. Ry. vs. Great Western Ry., 10 Railway and Canal Traffic Cases, pg. 68. The following is an extract from the judgment in this case:—"For instance, on the one hand, we have to take into consideration that the G.W.R. ought not, without some due cause in the public interest, to be deprived of the advantage of its long run in respect of traffic which has originated on its own system."

It is not necessary to say anything further upon this point, as the foregoing covers the applicant's complaint.

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The Canadian Transfer Co.'s board for the current year is as follows President, C. Cassils; directors, Hugh Paton, G. R. Starke, Sir H. Montagu Allan, H. M. Molson. The General Manager and Secretary is F. M. McRobie.

When the proposed regulations for inspecting, setting and washing locomotive boilers came before the Board of Railway Commissioners Feb.. 7, it was ordered that all railway companies file with the Board within 60 days, copies of their regulations for the work referred to.

Great Northern Ry. Lines in Canada.

In connection with the G.N.R. plans for building lines in Canada, a St. Paul, Minn., press dispatch says it has been decided that a number of the branch lines now running towards Canadian territory, will be extended so as to connect with Canadian lines, and that other branch lines will be built to the International boundary line in Manitoba, Saskatchewan and Alberta.

Manitoba Great Northern Ry.—A press report states that it has been decided at G.N.R. headquarters that construction is to be gone on with early in the spring with a line from Winnipeg south to the International boundary and to a connection with one of the company's lines in Northern Dakota; a line from Winnipeg westerly via Brandon and Elkhorn, Man.; a branch from Morden northwest to Rothwell, and on to a junction with the line westerly from Winnipeg. The Winnipeg city council has not been satisfied with the position of affairs regarding the laying out of terminals there, and the board of control directed its secretary, Feb. 3, to write the company's representative in Winnipeg, stating that unless a definite reply was given by a certain date as to when the company would begin work, the petition for approval of the layout would be returned. Early in Feb. it was stated that the G.N.R. had entered into an agreement with the Canadian Northern Ry. for joint use of its Fort Garry station in Winnipeg, but later a press dispatch credited J. J Hill with stating that he had withdrawn from the agreement, and that the G.N.R. would build a station itself.

Kaslo and Slocan Ry.—The British Columbia Government, on being asked to take such steps as were possible in order to secure the reopening of this line for traffic, discussed the matter in connection with some questions relating to the G.N.R.'s Vancouver plans, with the result that the K. and S. Ry. is to be rebuilt and operated between Kaslo and Sandon.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—The Attorney General for British Columbia stated, Feb. 5, that an arrangement had been entered into with representatives of the G.N.R., by which the questions arising out of the agreement of the city of Vancouver re False Creek, had been settled. The immediate result of the agreement, the Attorney General said, would be the starting of work by the G.N.R. on the construction of the projected terminals at False Creek. A bill confirming the agreement will be introduced in the Legislature as soon as the agreement is signed. In addition to settling the questions as to False Creek, the agreement deals with the reconstruction of the Kaslo and Slocan Ry. from Kaslo to Sandon, and the adjustment of differences as to the liability of the Government and the city of Victoria with respect to the old Victoria and Sidney Ry., now owned by the C.N.R.

Vancouver press reports Feb. 11 state that two additional tracks are to be laid from False Creek to Burrard Inlet, Vancouver, at once, and that large oil tanks are to be built on the south shore of False Creek, next the coal bunkers. These oil tanks are said to be for the supply of oil as fuel to the locomotives in use at the Vancouver terminals. The locomotives are to be sent in turn to Seattle, Wash., to be equipped for oil fuel.

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C. C. Chipman, who has been Commissioner of the Hudson's Bay Co., with office at Winnipeg for some 20 years, will retire from the position during the current year and will, it is said, live in England, the company granting him a retiring pension.

NOVA SCOTIA STEEL AND COAL CO.
LIMITED

MANUFACTURERS OF

Railway and Electric Car Axles, Angle Bar, and Tie Plates, Railway Spikes

Tee Rails 12, 18, and 28 lb. per yard

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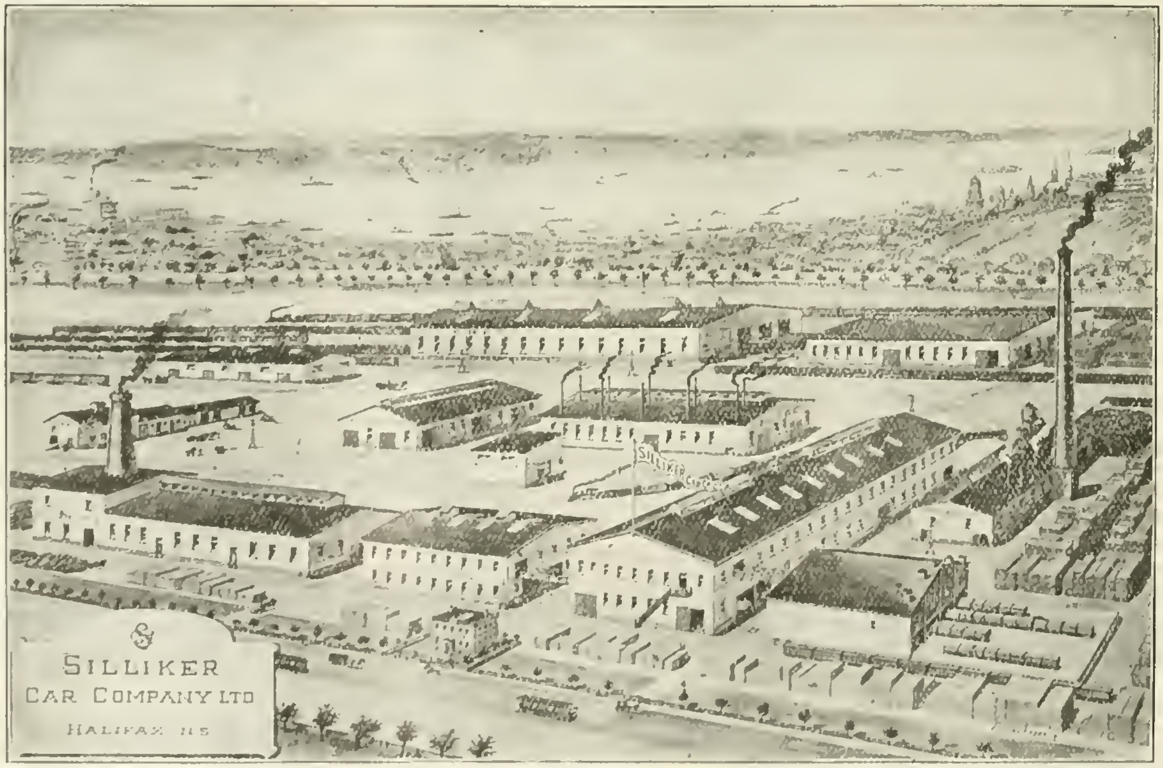


RAILWAY, FREIGHT AND PASSENGER CARS OF ALL KINDS

Should a Railway Have a Trouble Department.

By R. G. Pratt, General Maintenance Foreman and Supervisor of Apprentices C. P. R. Shops, Winnipeg.

This paper is written and based upon the fact that more can be learned from mistakes than by any other means. Theories are not facts, nor should they be taken as facts until they have been proved by experience. By putting a theory to test, it either proves a mistake or else a fact. Civilization, or the practical results of civilization, has advanced to its present state, principally, to start with, upon theories. Without an actual test, something, or some process, may look good and absolutely practical; it may be put to the test, several tests; it may be tested to the extent of our practical knowledge, and pass every one; it is then accepted as something practicable, and is everywhere adopted as a standard, the best of its kind. At some later date a test, we will say accidental, is put to this article or process, and it fails to stand this test sufficiently to warrant the party interested to discard it, or to put it to one side until he has further investigated. Over the failure of this he may have been put to a great amount of expense, or a number of lives may have been lost, or, by good luck, he may have lost nothing. There may be users of this article or process at some other points outside his province, unknown to him, or not get-at-able, who, if they had had the experience that he has had, or knew of his experience, would instantly make the necessary changes before they were put to any loss.

To get down to the railways with the above in mind, to my way of thinking it would be profitable and very beneficial for a railway to have what we will call an accident department. All accidents, or mistakes, we might call them, to be handled by this department, to have a good head, who would hold a position similar to a magistrate in our civil courts; he would investigate thoroughly and impartially, have sufficient staff to get the necessary details, or power to get any details from any employe in any department direct, without going to the heads of the departments. To have power to call on any official of the company for an opinion, or in consultation, or assist in any investigation. After the investigation is concluded put all facts before the management, together with all evidence collected. Also draw up in pamphlet form all facts relating to the accident, the cause, and what could have been done to have prevented it. Then send a copy to all parties having jurisdiction over any such class of work, materials or operation, taking particular care to see that the parties holding the lowest official position have a copy. By doing this you will get direct to the parties that can prevent a recurrence of the accident either through ignorance or neglect of duty. This will save half the troubles and will tend to bring about better feeling between the different departments. It will possibly save a recurrence of the accident, which accident might have occurred for the following reasons:—

The man doing the work, or responsible for the work may not have had sufficient technical knowledge to see the fault.

He may know of the faults, but not having had the experience of the party that had the failure, in his opinion it may not be serious, or he may classify it with one of those things which his superior officer has at some time or another said, "That's good enough, let it go at that."

He may know of the fault, but be too negligent to put it right, saying to himself, "that will go another day or so; if anything happens no one will say anything to me."

From the experience of you all, I think you will agree with me that a man will bluff himself out of a corner verbally easier than he will by writing. If he knows that in the event of a certain thing happening he has got to put in a written report, he will go to more trouble to prevent it happening.

Under the existing rules, if a man does anything he should not do, or if an accident happens which someone could have prevented by a little more care, this party expects possibly a blowing up or a few words from his superior the next time he sees him; he more often gets it, but sometimes does not. It may be some days before an opportunity occurs and his boss may think that it is not worth mentioning now. The boss himself may get a kick about it later on, but the newness has worn off, and the possibilities are that he files it, saying to himself that Bill, or whoever he is, is not so bad after all, and he will let it go this time. Bill may do the same thing again with more serious results, but he knows his boss, and possibly takes as much notice of a ragging as he would of shaking hands with him. But if this were changed so that Bill was taken on the carpet, independent of his boss, by an impartial official, he would think more of it, and it would have more terrors for him.

By sending copies of investigation direct to the subforemen you get direct to the men doing the work, as, usually they are more or less intimate with the men working under them, and nine men out of ten would talk the matter over, and hand round the report to the men.

At present any accident or trouble is usually settled entirely by the head officials in the department responsible; if there is any investigation, unless it is of a very serious nature, it usually results in its being filed in his office, being seen only by him and the local official. It may possibly be seen by the party directly concerned when he has to take his medicine. To give a few practical examples:—

A wheel may become loose on an axle and cause an accident, we will say that it was not bored out correctly. You have a record of the date when the wheel was put in, and where, and it is easy to have a system of marks for each man's work. You can get direct to the man; he may be able to put it to machine out of order, or bad tools, but whatever the reason, if he had been expecting that he would be called down in case it was found out, he would have gone to more trouble to turn the work out good.

Again, at some portion of the line there is a derailment on account of expansion of track, or joint being slack, or not properly suspended, or track requires shimming, or it may be through some defect that the average trackwalker would pass over saying, "We will do this next time we are out this way." We will say that a certain section foreman had received a report of an accident at some other place, from what, up to that time, he had thought as something not worth noticing. He would at once begin to think of the similar defects upon his own portion of track, and remedy them.

Labor troubles should be handled by this department, both parties submitting evidence.

However, it is a subject that would require a great amount of consideration from all points. The cost of the investigation might prove more than the amount saved, or, again, it might appear to be so, as the amount saved could never be shown in black and white; it would be almost entirely guess work.

The man or men doing the work might spend a lot of time upon details that are not necessary. Their superiors might get lax, thinking that they would not require so much direct supervision.

It might do away with the usual method of railroading "Putting it up to the next man," or it might act just the other way by putting all the responsibility on to the new department.

The foregoing was read before the Western Canada Railway Club recently.

◆

Atlantic Quebec & Western Ry. Finances

A return presented to the House of Commons from the Railway Department shows that the Dominion Government has paid $396,902 in subsidies to the Atlantic, Quebec & Western Ry., the enterprise in which so much money of the Charing Cross Bank of London, Eng., was sunk. There have been completed 53.75 miles, and there remain to be constructed 48.65 miles. The return states that the total cost of the part constructed has been $2,451,550, but in his examination in bankruptcy in London on Jan. 26, A. W. Carpenter said that he had expended £800,000 (nearly $4,000,000). The department estimates the cost of completion at $769,568, but Carpenter said it could be completed for £30,000 or £40,000. All the subsidies were paid over to the Bank of Montreal, which held a power of attorney for the company. The company has been asked to furnish a list of its shareholders, directors and officers, as well as a statement of the amounts paid out for directors' fees and for promotion expenses, together with a statement as to whom the amounts were paid.

◆

Railway Rates for Naval Forces.

An order in council has been passed under clause 289 of the Railway Act, prescribing the following fixed scale of rates for the conveyance of officers and men belonging to the Naval Forces of Canada and all naval stores by rail:

For conveyance of officers and men: East of Port Arthur, 2c. a mile for 1st class accommodation, and when 2nd class accommodation is requisitioned, whether the railway provides second class accommodation or not, 1½c. a mile. From Port Arthur westward 3c. a mile for 1st class accommodation and 2c. a mile for 2nd class accommodation.

When special return or cheap rate tickets are in force at less than the above, they shall always be taken.

For the carriage of stores, special rates shall be agreed upon, with the special proviso that the charge in no case shall exceed what would be paid by the public.

◆

Contracts have been let by the C.P.R. for the building of a dam on the Bow River at Bassano, Alto., to be used in connection with the irrigation of an additional 540,000 acres in the eastern section of the company's irrigation block. The contractors are Janse, McDonnell and Co., Vancouver, B.C., for the earth work, and the Walter-Fyshe Co., for the concrete work. The work is to be started at once, and 2,500 men with 800 mules will be employed.

During Dec. 1910, 17 employes were killed, and 29 were injured in the course of their work in connection with Canadian railways. Of the fatalities, five were due to being run over, four to collisions, three to falls, two to being caught between cars, and one each to a derailment, to exposure and to asphyxiation, while of the other accidents, seven were due to being caught between cars, six to being run over, five to collisions, four to derailments, three to falls, and one each to exposure, to falling material and to being struck by an object in passing.

Electric Headlight Saves Train

(From Daily Papers)

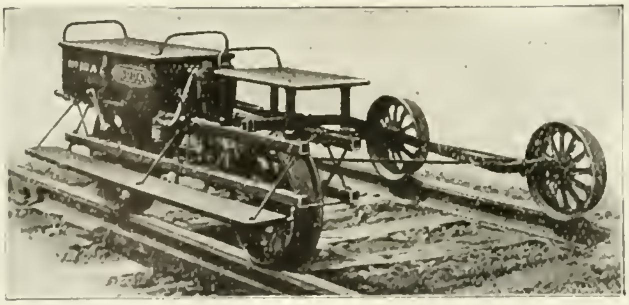
"Wednesday night B——— forgot to deliver an order to hold Eastbound Passenger Train No. 6, and only the fact that the Electric Headlight of the oncoming Passenger train was seen at a great distance by the Engineer of the Westbound Freight prevented a head end collision in the ——— Canyon near ———. The warning light was seen in time to enable the freight to get back on to the siding at ———."

PYLE-NATIONAL ELECTRIC HEADLIGHT CO.

CHICAGO

BUDA MOTOR CARS

BUY THE BEST



SALES AGENTS:

DOMINION EQUIPMENT & SUPPLY CO.

354 Main St., WINNIPEG, MAN.

Orders by the Railway Commissioners.

Beginning with June, 1904, we have published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the hearing took place and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the date assigned to them

12746. Jan. 12.—Ordering G.T.R. to protect crossing at Cannon St., Hamilton, Ont., with two watchmen.

12747. Jan. 12.—Ordering Hamilton St. Ry. and G.T.R. to provide half interlocking plant at crossing of King St., Hamilton, Ont.

12748. Jan. 12.—Ordering that complaint of city of Hamilton, Ont., re engines and trains being allowed to stand across King St., stand for further consideration if arrangement undertaken by G.T.R. be not satisfactory.

12749. Jan. 12.—Authorizing city of Winnipeg to lay sewer under C.P.R. at Nairn Ave.

12750. Jan. 12.—Authorizing G.T.R. and C.P.R. to operate interlocking plant at lot 7, con. 1, Etobicoke tp., Ont., without bringing trains to a full stop.

12751. Dec. 6.—Authorizing C.N.O.R. to connect with Ottawa & New York Ry. in Nepean tp.

12752. Jan. 13. Approving G.T.R. plans for the construction of swing bridge 42 over Rideau canal, Ottawa, Ont.

12753. Jan. 13.—Authorizing C.P.R. to open for traffic its second track from Islington to Islington Jct., Ont.

12754. Jan. 12.—Authorizing C.N.O.R. to cross with its telegraph wires Lachute Electric Co.'s wires in Chatham tp., Argenteuil county, Que.

12755. Jan. 13.—Amending order 11762 re opening of Sumas St. across C.P.R., Sumas tp., B.C.

12756. Jan. 12.—Extending to June 30 time for completion of C.P.R. spur to Saskatoon Brick & Supply Co., authorized by order 11935.

12757. Jan. 12.—Authorizing Consumers Gas Co. to lay pipe under C.P.R. at St. Clair Ave., Toronto.

12758. Jan. 16.—Authorizing Alberta Government to maintain highway across C.P.R. Calgary and Edmonton branch, in sec. 12, tp. 27, r. 1, w. 5 m., at Airdrie.

12759. Jan. 14.—Ordering C.P.R. and G.T.R. to build a transfer track before May 15 at St. Marys, Ont.

12760. Mar. 22.—Ordering that Eramosa, Esquesing, Erin and Nassagameya tps. be made parties with G.T.R. to application re protection of highway crossing 2½ miles west of Acton West station, Ont.

12761, 12762. Jan. 16.—Authorizing Ontario Hydro-Electric Commission to erect wires across Bell Telephone Co.'s wires at lot 4, con. 3, London tp., and at Stone road, Woodstock.

12763. Jan. 16.—Approving revised location of portion of C.P.R. Regina, Saskatoon and North Saskatchewan branch, authorized by order 3428, Aug.. 13, 1907, in sec. 23, tp. 20, r. 21, w. 2 m., at mileage 21.9 to sec. 7, tp. 22, r. 23, w. 2 m., at mileage 43.2, from Regina, Sask.

12764. Jan. 16.—Authorizing C.P.R. to build additional main line track (second track) across road allowances from mileage 29.05 to 35.5 on its Brandon subdivision, Man.

12765. Jan. 16.—Authorizing J. Marshall, Barton tp., Ont., to lay pipe under G.T.R. at second road south of the Indian line, between lots 7 and 8, con. 2, range east, Seneca tp.

12766. Jan. 16.—Authorizing Consumers Gas Co. to lay pipe under C.P.R. at Bathurst St., Toronto.

12767 to 12769. Jan. 1, 16.—Authorizing J. Marshall to lay pipes under G.T.R. between Glanford and Seneca tps., and at two points in Seneca tp., Ont.

12770. Jan. 16.—Authorizing C.P.R. to build spur to Massey-Harris Co.'s premises, Moose Jaw, Sask.

12771 to 12776. Jan. 16.—Temporarily approving Bell Telephone Co.'s contracts with La Compagnie de Telephone St. Laurent, Brougham and Grattan, Wright and Pontiac, and Ahmic Telephone Cos., North Easthope tp., and Schomberg Telephone Co., Ont.

12777. Jan. 17.—Extending to July 1 time for installation of interlocking plant by C.N.O.R. at Cobourg.

12778. Jan. 17.—Approving coldproof fire extinguisher for use on steam railway cars.

12779. Jan. 17.—Approving change in G.T.R. location, grade and alignment on part 1, Toronto grade separation.

12780. Jan. 18.—Approving location of Kettle River Valley Ry. from mileage 9.79 to 29.0, Merritt to Coldwater summit location.

12781. Jan. 18.—Authorizing Ontario Hydro-Electric Commission to erect wires across C.P.R. wires at Mutual and Carnagie Sts., Ingersoll.

12782. Jan. 18.—Authorizing town of Galt, Ont., to maintain sewer under G.T.R. on George St.

12783. Jan. 18.—Re White Pass and Yukon Ry rates. This order was given in full in our Feb. issue, pg. 147.

12784. Jan. 19.—Approving location of Calgary and Edmonton Ry. (C.P.R.) from eastern boundary of sec. 26, tp. 36, r. 12, w. 4 m., at mileage 100, Alta., to the C.P.R. Moose Jaw Northwesterly branch, in sec. 23, tp. 34, r. 23, w. 3 m., at mileage 221.9, Sask.

12785. Jan. 18.—Authorizing G.T.P. Branch Lines Co. to cross C.P.R. Arcola branch at Griffin, Sask., interlocking plant to be installed before Aug. 15.

12786. Jan. 18.—Dismissing application for interswitching at Ingersoll, Ont., which was reserved in order 10805, June 6, 1910.

12787 to 12789. Jan. 19. — Authorizing Farmers Telephone Co. to install telephones in C.P.R. stations at Hartland, East Florenceville and Woodstock, N.B.

12790. Jan. 20.—Approving C.P.R. revised location from sec. 12, tp. 32, r. 27, w. 2 m., at mileage 89.8, from Regina, to sec. 29, tp. 33, r. 27, w. 2 m., at mileage 100.1, Sask.

12791. Jan. 20.—Authorizing C.P.R. to build its Regina, Saskatoon and North Saskatchewan branch across G.T.P.R. at mileage 118 from Regina, interlocking plant to be installed by July 31.

12792. Jan. 20.—Approving C.N.O.R. revised location on n.e. ¼ lot 11, con. 3, Hope tp., mileage 62.67 to 62.82.

12793. Jan. 21.—Authorizing C.P.R. to build spur to Toronto Carpet Co.'s premises, across Liberty St., Toronto.

12794. Jan. 20.—Approving agreement between Bell Telephone Co. and South Bruce Rural Telephone Co. for interchange, tolls, etc.

12795 to 12798. Jan. 20.—Authorizing Ontario Hydro-Electric Commission to maintain wires across Bell Telephone Co.'s wires at Avery Lane, Norwich, lot 15, con. 4, South Norwich tp., and at two points on Edinborough Rd., Guelph tp.

12799. Jan. 20.—Authorizing South River Electric Co. to erect wires across G.T.R. at Main St., South River, Ont.

12800. Jan. 20.—Authorizing C.P.R. to build spur to Doan and Charles' premises, and siding for Toronto Laundry Machine Co., Dundas St. and Sorauren Ave., Toronto.

12801. Jan. 20.—Authorizing city of Regina, Sask., to build subway at Broad St. under C.P.R., the city to close Hamilton St.; $5,000 to be paid to city from Railway Grade Crossing Fund. (See order 12708, Jan. 9.)

12802. Jan. 23.—Authorizing Ontario Hydro-Electric Commission to erect wires across G.N.W. Telegraph Co.'s wires at lot 6, con. A, London tp.

12803. Jan. 23. — Authorizing Seymour Power and Electric Co. to erect wires across Bell Telephone Co.'s wires at lot 22, con. 2, Rawdon tp., Ont.

12804, 12805. Jan. 23.—Authorizing C.N.O.R. to build bridges over Cravens Creek, and over creek at station 2176-29, Thurlow tp., mileage 131.36, from Ottawa.

12806. Jan. 23.—Authorizing C.P.R. to build siding across Jeffreys St., Chatham, Ont., to American Pad and Textile Co.'s premises.

12807. Jan. 24.—Authorizing G.T.P. Branch Lines Co. to divert road on its Calgary branch in south ½ sec. 27, tp. 29, r. 24, w. 4 m., South Alberta District.

12808. Jan. 24.—Authorizing G.T.P. Branch Lines Co. to build across highway on its Yorkton extension, in n.w. ¼ sec. 13, tp. 26, r. 4, w. 2 m., Yorkton District, Sask.

12809. Jan. 24.—Authorizing G.T.P.R. to divert road in east half sec. 16, tp. 53, r. 17, w. 5 m., North Alberta District.

12810. Jan. 24.—Authorizing Dominion Atlantic Ry. to rebuild bridge across Gaspereaux River at Horton Landing, Kings county, N.S.

12811, 12812. Jan. 23.—Relieving T.H. & B. Ry. from further protection of crossings at Ancaster stone road, between lots 54 and 55, con. 1, mileage 41, and at third highway crossing west of Chippewa Bridge between Thorold and Pelham tps., at milepost 2, from Welland, Ont.

12813. Jan. 28.—Approving plans of C.P.R. station at Dorion, Ont.

12814. Nov. 14.—Approving plans of G.T.P. Branch Lines Co.'s station at Balcarres, Sask.

12815. Jan. 28.—Authorizing T.H. & B. Ry. to build spur in South Grimsby tp., Ont.

12816. Jan. 26.—Authorizing C.P.R. to build spur for Rat Portage Lumber Co., across First and Fir Sts., Vancouver, B.C.

12817. Jan. 24.—Reporting amalgamation agreement between C.N.R. and Edmonton and Slave Lake Ry. to Governor-in-Council for sanction.

12818. Jan. 26.—Authorizing C.N.O.R. to build across and divert public road in lot 3, con. 2, Gloucester tp.

12819. Jan. 23.—Approving agreement between Bell Telephone Co. and Central Ontario Ry. for interchange business.

12820, 12821. Jan. 27.—Authorizing Ontario Hydro-Electric Commission to erect wires across C.P.R. wires at Carnegie and Harris Sts., Ingersoll, and at lot 2, con. 2, Dereham tp.

12822. Jan. 24.—Authorizing C.P.R. to build its Moose Jaw Northwesterly branch across some 108 highways and divert same between mileage 9.59 and 119.6, Sask.

12823. Jan. 21.—Authorizing T.H. & B. Ry. to build spur in South Grimsby tp., Ont.

12824. Jan. 26.—Approving C.N.R. revised location through tp. 28 and ranges 4-6, w. 4 m., mileage 196.64 to 210.21 from junction with Qu'Appelle, Long Lake and Saskatchewan Ry., at Saskatoon, Sask.

12825. Jan. 30.—Authorizing C.N.O.R. to cross Dominion St., Trenton.

12826. Jan. 30.—Ordering C.N.R. before April 30, to rebuild and put in good order crossings between secs. 1 and 2, tp. 11, r. 3, and in centre of sec. 11, St. Francois Xavier municipality, Man., and build suitable culverts and clean out existing ditch, etc.

12827. Jan. 30.—Approving C.N.O.R. revised location in St. Andrews parish, Que.

12828. Jan. 30.—Approving revised location of G.T.P. Branch Lines Co.'s Regina-Boundary branch, mileage 88.32 to 100, and location, mileage 100 to 110.21 from sec. 21, tp. 7, r. 1, w. 2 m., to east line of sec. 28, tp. 5, r. 7, w. 2 m., Assiniboia District, Sask.

12829. Jan. 26.—Re transportation by C.P.R. of McGill University mining students from Montreal to British Columbia. This order is given in full on another page.

12830. Jan. 30.—Authorizing C.P.R. to operate under two structures, being corner of Salt block and overhead conveyer of Western Canada Flour Mills Co., Goderich, Ont.

12831. Jan. 20.—Approving location of G.T.P. Branch Lines Co.'s Young-Prince Albert branch from mileage 110.9 to east boundary of First Avenue East, Prince Albert, Sask. All questions of street protection and closing are reserved for further consideration.

12832. Jan. 30.—Extending to May 1, time for completion of spur to Ingersoll Packing Co., Ingersoll, Ont., by Tillsonburg, Lake Erie and Pacific Ry., as required by order 10805, June 6, 1910.

12833. Jan. 20.—Authorizing Ontario Hydro-Electric Commission to erect wires across Bell Telephone Co.'s wires at Queen St., St. Marys.

12834. Jan. 30.—Relieving Wabash Rd. from further protection of Diltz Road crossing, Halton tp., Ont.

12835. Jan. 30.—Relieving C.P.R. from further protection of highway crossing one mile west of Vankleek Hill, Ont.

12836. Jan. 25.—Dismissing C.N.Q.R. application to extend its yards in Hochelaga, Montreal, to cross Marlborough St., and to take extra lands on Stadacona and Marlborough Sts.

12837. Jan. 25.—Dismissing application of city of Montreal to compel C.N.Q.R. to remove shanty at intersection of Valois Ave. and Ontario St., and to remove fence, etc.

12838. Jan. 31.—Authorizing C.P.R. to build bridge in lieu of subway where it crosses road allowances between secs. 11 and 12, tp. 24, r. 1, w. 5 m., Calgary, Alta., and approving agreement between it and the city.

12839. Jan. 26.—Adding Delaware and Hudson Co. as party to application of W. A. Stewart, Napierville, Que., and village of St. Cyprien, re alleged inadequate train service by Napierville Jct. Ry.

12840. Jan. 25.—Approving C.N.Q.R. extension of yards between Moreau and Marlborough Sts. Montreal, and dismissing application for closing of Robillard St.

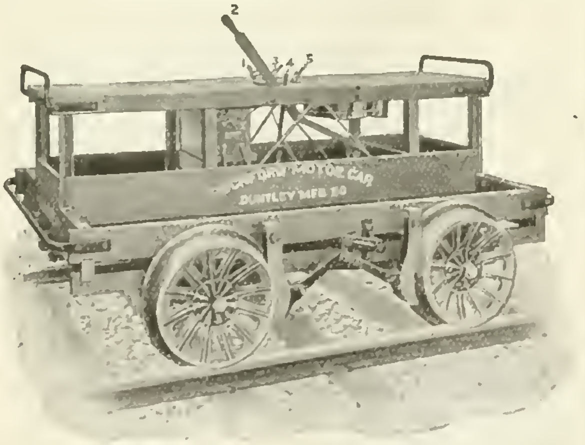
12841. Jan. 31.—Ordering C.N.O.R. to carry out provisions of order 12553, Dec. 19, 1910, re farm crossing at Banning, Ont., within 10 days from date, under penalty of $25 a day.

12842. Jan. 24.—Dismissing C.N.Q.R. application for order fixing terms, conditions and method in which the dam and headrace or other portions of water power of

CROSSEN CAR MFG. COMPANY
OF COBOURG, LIMITED

MODERN HIGH=CLASS
ROLLING STOCK
Passenger, Freight and Electric Railway
Ruggles' Rotary Snow Plows

CAR CASTINGS, FORGINGS AND REPAIR PARTS



SAVE MONEY
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ROCKFORD
MOTOR CARS
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All of their energy is saved for track work.

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Simplicity Perfect Speed Control Accessibility of Working Parts Lightness of Weight Durability

Canadian Representative—
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MONTREAL TORONTO WINNIPEG VANCOUVER

DUNTLEY MANUFACTURING COMPANY
CHICAGO, ILL., U.S.A.

A. Naud, Deschambault parish, Que., may be maintained, repaired and rebuilt.

12843. Jan. 24.—Authorizing C.N.Q.R. to use tracks on bridge over St. Charles River, near Quebec, including property owned in common by Quebec Ry., Light and Power Co. and Quebec and Lake St. John Ry. for entering city of Quebec, C.N.Q.R. to pay $1,500 a year rental to Q. Ry., L. and P. Co., and to also pay arrears for use of bridge, and be responsible for its share of maintenance and operation.

12844. Jan. 25. — Refusing application, without prejudice, of Mousseau and Gagne, Montreal, to compel G.T.R. to build highway crossing on proposed road between St. Polycarpe and St. Clet, Que.

12845. Jan. 25.—Dismissing application of town of Notre Dame de Grace, Que., for order to amend order 8208, Sept. 14, 1909, re Montreal Park and Island Ry. location.

12846. Jan. 31.—Authorizing C.P.R.. to build spur to Burridge-Cooper Co.'s premises, Regina, Sask.

12847. Jan. 31.—Extending to June 1, time in which G.T.P.R. may erect shelters, as ordered by order 12132, Oct. 27, 1910, at Reford, Sask., under penalty of $25 a day after that date.

12848. Jan. 31.—Authorizing Vancouver, Victoria and Eastern Ry. to build spur to Vancouver-Prince Rupert Meat Co.'s premises.

12849. Jan. 30.—Authorizing C.P.R. to operate three sidings upon and across Pardee Ave. and Liberty St., Toronto, to connect with G.T.R. siding.

12850. Jan. 31.—Authorizing Ontario Hydro-Electric Commission to erect wires across G.T.R. at Main St., Norwich.

12851. Jan. 30.—Authorizing city of New Westminster, B.C., to lay water main under C.P.R. near Westminster Jct.

12852, 12853. Jan. 25.—Dismissing application of Montreal. Park and Island and Montreal Terminal Rys. for approval of standard passenger tariff of 3c. a mile, with a minimum fare of 5c., and specifying a maximum toll of 2½c. a mile on existing lines. This order is given in full on another page.

12854. Feb. 1.—Authorizing suspension of freight rates from Ontario shown in tariff of Joint and Proportional Rates, C.R.C. 188, issued by J. F. Tucker, Chicago, until Sept. 1, and for reinstatement until and including Aug. 31, of joint and proportional rates between same points shown in said Tariff C.R.C. 180, which was superseded by C.R.C. 188 on Nov. 1, 1910.

12855. Feb. 2.—Relieving G.T.R. from further protection of Market St. crossing, Paris Jct., Ont.

12856. Feb. 1.—Extending to March 1, time for crossing, by Essex Terminal Ry., of Windsor, Essex and Lake Shore Road Ry. at Howard Ave., Windsor, Ont., as required by order 12051, Oct. 13, 1910.

12857. Feb. 1.—Extending to April 15, time for connection between C.P.R. and G.T.P.R. at St. Boniface, Man., as required by order 12292, Sept. 22, 1910.

12858. Feb. 1.—Authorizing C.P.R. to build spur to Ogilvie Flour Mills Co.'s premises, and to cross Duncan St., Fort William, Ont.

12859. Feb. 1.—Authorizing G.T.R. to rebuild bridge 70, south of Madoc, Ont.

12860. Feb. 2.—Authorizing C.N.O.R. to build across Ontario St., between lots 18 and 19, con. A, Cobourg, Ont.

12861. Authorizing T.H. & B. Ry. to build spur in Pelham tp., Ont.

12862. Feb. 2.—Authorizing C.N.O.R. to cross Darcy St., between lots 14 and 15, Cobourg.

12863. Feb. 2.—Approving location of Alberta Central Ry., mileage 63 to 75, from Red Deer.

12864. Feb. 1.—Authorizing city of Medicine Hat, Alta., to erect wires across C.P.R. wires at Esplanade St.

12865 to 12881. Feb. 1.—Authorizing Hamilton Cataract Power, Light and Traction Co. to erect wires at 17 points in Ontario.

12882. Jan. 25, 26.—Dismissing application of Halifax, N.S., Board of Trade, re complaint that G.T.R. discriminates against Halifax in favor of other Atlantic ports in its differential rate of 1c. per 100 lbs. on traffic between Halifax and Montreal, and points east of Montreal.

12883. Feb. 2.—Dismissing application of Paipoonge tp, that C.N.O.R. maintain suitable highway crossing between lots 3 and 4, con. "B".

12884. Feb. 2.—Approving location G T.P. Branch Lines Co.'s Regina-Boundary branch from east line of sec. 28, tp. 5, r. 7, w. 2 m., to east line of sec. 32, tp. 3, r. 4, w. 2 m., Sask., mileage 110.21 to 130.92.

12885. Feb. 3.—Authorizing C.N.O.R. to cross Sinclair ave. in lot 20, con. A, Cobourg.

12886. Dec. 1.—Rescinding order 12443 and providing that plans be filed by Mar. 15 by town of Lachine, Lachine parish, and Montreal West with suggestions as to elimination of crossings, etc, or protective appliances to be installed.

12887. Feb. 3.—Authorizing C.P.R. to build spur to Superior Fuel and Coal Co.'s premises, Winnipeg.

12888. Feb. 3.—Authorizing C.P.R. to build spur to A. Eby's premises, Elmira, Ont.

12889. Feb. 3.—Authorizing Hamilton Cataract Power, Light and Traction Co. to erect wires across Bell Telephone Co.'s wires at G.T.R. crossing, 1 mile west of Jordan, Ont.

12890. Feb. 6.—Amending order 12225, Nov. 9, 1910, re protection of railway employes, see Dec. 1910 issue, pg. 1045). This order is given in full on another page.

12891, 12892. Feb. 6.—Authorizing Canadian Light and Power Co. to maintain wires across G.T.R. at Lachine canal, north bank, 2,000 ft. west of Cote St. Paul bridge.

12893. Jan. 3.—Dismissing application of Lachine, Jacques Cartier and Maisonneuve Ry. to cross C.P.R. to Jacques Cartier Jct., Que

12894 to 12896. Feb. 6.—Authorizing G.T.P. Branch Lines Co. to build its Prince Albert branch across three highways in the East Saskatchewan district.

12897. Feb. 6.—Authorizing G.T.P. Branch Lines Co. to cross highway in Saskatoon District, Sask., in n.w. ¼ sec. 5, tp. 34, r. 27, w. 2 m.

12898. Feb. 6.—Authorizing C.P.R. to build extension of its Langdon branch to Langdon station and across road allowance at s.w. ¼ sec. 24, tp. 23, r. 27, w. 4 m., Alta.

12899. Feb. 6.—Authorizing city of St. Boniface, Man., to build Marion St. across C.N.R.

12900. Jan. 3.—Authorizing C.N.O.R. to cross overhead, C.P.R. near Jacques Cartier Jct., mileage 49.3 south from Hawkesbury.

12901. Feb. 6.—Ordering railway companies subject to the Board's jurisdiction to file tariffs of interswitching tolls, by Mar. 1, in accordance with order 4988, July 8, 1908.

12902. Feb. 6.—Authorizing Niagara, St. Catharines and Toronto Ry. to open for traffic its line from Welland to Port Colborne, Ont.

12903. Feb. 7.—Approving revised location of C.P.R. Weyburn to Lethbridge branch from sec. 17, tp. 8, r. 18, at mileage 26.2 to sec. 22, tp. 7, r. 22, w. 2 m., at mileage 52.2 Sask.

12904. Feb. 7.—Approving location of Kootenay and Alberta Ry. from Pincher to Beaver Creek, Alta., mileage 0.0 to 13.09.

12905. Feb. 6.—Authorizing G.T.R. to operate over Niagara, St. Catharines and Toronto Ry.'s crossing near Welland, Ont., as authorized by order 9552, Feb. 3, 1910.

12906. Feb. 7.—Ordering that Bell Telephone Co. file tariffs of tolls under penalty of $100 a day, not later than Feb. 20, in accordance with order 12625, Dec. 14 1910.

12907. Feb. 6.—Authorizing G.T.R. to cross Niagara, St. Catharines and Toronto Ry. crossing, near Welland, Ont., authorized by order 9552, Feb. 3, 1910, wihout being brought to a stop. Speed limited to 15 miles an hour.

12908. Feb. 6.—Authorizing Seymour Power and Electric Co. to erect wires across G.N.W. Telegraph Co.'s wires in lot 3, con. 2, Murray tp., Ont.

12909. Feb. 7.—Authorizing Berlin, Ont., Water Commissioners to lay pipe under G.T.R. at Strange St.

12910. Feb. 7.—Relieving C.P.R from further protection at crossing at mileage 22.92, lot 4, St. Jerome parish, Que.

12911 to 12913. Feb. 7.—Authorizing C.P.R. to build spurs to Canadian Western Lumber Co.'s premises near New Westminster, B.C.; an extension to spur for James Smart Mfg. Co., Brockville, Ont.; and a spur for city of Winnipeg, in Block B, St. John.

12914. Feb. 7.—Ordering C.N.R. to maintain an agent and place an outside closet at Devlin, Ont., not later than Mar. 7, under penalty of $25 a day.

12915. Feb. 7.—General order in matter of specifications for installation of electric bell signals at highway crossings. This order is given in full on another page.

12916. Jan. 25.—Ordering that G.T.R. and Boston and Maine Rd. provide connection between their trains 2 and 70 at Sherbrooke, Que., not later toan May 15.

12917. Jan. 25.—Ordering that G.T.R. provide watchman at east end of Windsor Mills station, Que., from 7 a.m. to 7 p.m., wages to be borne half by G.T.R., ⅛ by town of Windsor Mills, and ⅛ each by Canada Paper Co. and Brompton Bridge Co.

12918. Jan. 2[illegible].—Ordering that C.N.Q.R. open and maintain a water course across right of way for drainage scheme to drain Lac a l'Ours, in discharge of Lac aux Sables, put in head gates, etc., by June 1, on application of mayor of Lac aux Sables.

12919. Feb. 8.—Extending to May 15, time within which C.N.R. may fence its right of way between Maidstone and Paynton, Sask., and install cattle guards as provided by order 12072, Oct. 22, 1910.

12920. Feb. 8.—Approving location of G.T.P. Branch Lines Co.'s new station on its Calgary branch at Camrose, Alta.

12921 to 12931. Jan. 23, 24.—Approving Standard Tariff of Maximum Sleeping and Parlor Car Tolls, to apply on and after Feb. 15, 1911, on C.N.O.R., C.P.R., G.T.R., T.H. & B. R., Rutland Rd. Wabash Rd., Boston and Maine Rd., Michigan Central Rd., G.T.P.R., C.N.R., and N.Y.C. & H.R.R. In case of C.P.R. and G.T.P.R., approval shall not in any way prejudice the right of parties interested in the Vancouver Board of Trade application charging that railway rates generally in the West are discriminatory against Vancouver, said parties to be at liberty to present any evidence they may desire against the charges hereby approved for sleepers and parlor cars west of Calgary and Macleod.

12932. Feb. 7.—Ordering all railways to file within 60 days, copies of regulations in force for inspecting, testing, and washing of locomotive boilers.

12933. Feb. 8.—Extending to June 1 time within which C.P.R. may complete spur for Standard Lumber Co., near Cranbrook, B.C., as provided by order 11875, Oct. 5, 1910.

12934. Feb. 9.—Authorizing C.P.R. to build bridge over Talbot River, Ont., for Georgian Bay and Seaboard Ry.

12935. Feb. 9.—Authorizing C.P.R. to cross highway with double track at mileage 45.9, Brandon subdivision, Man.

12936. Feb. 7.—Authorizing C.N.O.R. to cross public road between lots 16 and 17, Junction Gore.

12937. Feb. 7.—Recommending to the Governor in Council for sanction agreement between Quebec Ry. Light & Power Co. and Quebec County Ry.

12938. Feb. 7.—Refusing C.N.R. application to cross C.P.R. Didsbury-Kininvie branch with its Vegreville-Calgary branch in n.w. ¼ sec. 21, tp. 25, r. 24, w. 4 m.

12939. Feb. 8.—Authorizing Vancouver, Victoria and Eastern Ry. to build branch from its main line near McLean Drive to Park Lane, Vancouver, B.C.

12940, 12941. Feb. 10.—Authorizing Niagara, St. Catharines and Toronto Ry. to operate over crossings of G.T.R. air line near Welland, and at G.T.R. crossing in Port Colborne, Ont.

12942 to 12948. Feb. 10.—Authorizing C.P.R. to build second track across highways at mileages 43.1, 46.5, 59.95, 48.8, 48.0, 47.7, 8.05, Brandon subdivision, Man.

12949. Feb. 10.—Authorizing N., St. C. & T. Ry., M.C.Rd. and T.H. & B. Ry., pending completion of interlocker ordered by 9552, to operate trains over crossing of Canada Southern Ry., T.H. & B. Ry., authorized by order 10639, March 22, 1910, trains to come to full stop and be flagged by watchman employed by M.C.R. and paid for by N., St. C. & T. Ry.

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Quebec Public Utilities Commission.

The parish of Infant Jesus, Que., complained recently to the Commission against the reconstruction of the Quebec Central Ry.'s locomotive house, which was burned last summer, alleging that it caused permanent danger of fire to part of the village, and also asked for the establishment of a public crossing where "Jacob's Route" crosses the tracks, and complained of the location of a water tank at the King's crossing, contending that it rendered the crossing dangerous. The Commission decided:—

That there is no reason to prevent the Q.C.R. from reconstructing its engine house on the same site as it was formerly located, but the walls and roof must be covered in undulated sheet iron or other incombustible material to the Commission's satisfaction. The company is permitted to pave the engine house with earth mixed with ashes or cinders, which must be replaced by a cement or concrete pavement as soon as the ground is sufficiently solid.

There is no reason at present for the company to be directed to open and maintain a public crossing on the "Jacob's Route."

That the Q.C.R. install at its own expense an automatic alarm bell or other means of protection approved by the Commission, to protect the level crossing situated at the side of the reservoir, from the approaching trains from the west or the side from which the bridge is situated over the Chaudiere River, at a distance of 1.000 ft., counting from the said level crossing.

Why the C. P. R. North Toronto Route to Ottawa and Montreal is the Logical One

The train leaves as follows:

Leave North Parkdale - - -	9.15 p.m.	Arrive Ottawa, 6.50 a.m.
Leave West Toronto - - -	9.30 p.m.	Arrive Montreal 7.00 a.m.
Arrive North Toronto - . - -	9.40 p.m.	Daily except Sunday.
Leave North Toronto - - -	10.00 p.m.	Will Stop at Westmount.

¶ The residents of Toronto are adjacent to either North Parkdale, West Toronto or North Toronto stations, same being easily accessible and closer to residential districts.

¶ The North Toronto route is over an hour faster and overcomes a long hill climb for the train out of Toronto, obviating any inconvenience and ensuring early arrival at Montreal and Ottawa.

¶ The roadbed has been improved till it is unexcelled in Canada.

¶ The equipment is "Canadian Pacific Standard," a synonym for the "best" and attentive porters, non-obsequious, ensure efficient service. .

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Combination Hand Power and Gasoline Power Section Car

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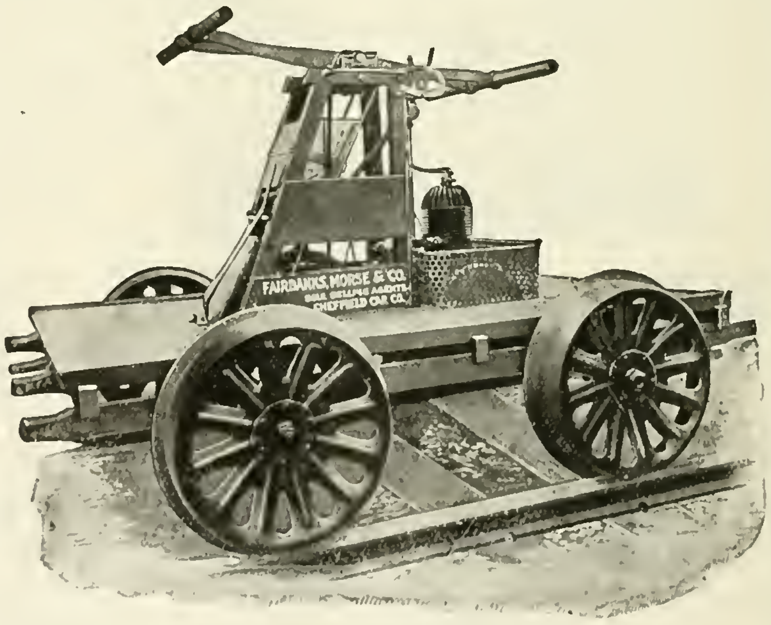

No. 13 Fairbanks-Morse Air Cooled Motor Car

The car rides easily with scarcely any side motion. The parts are all protected, and rain or moisture will not affect the running. Ten minutes daily will keep it in first-class running order. Speed, 18 miles per hour.

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MONTREAL ST. JOHN, N.B. TORONTO WINNIPEG SASKATOON CALGARY VANCOUVER

C.P.R. Betterments, Construction, Etc.

Nova Scotia.—A press report states that among the projects under consideration by the C.P.R. in connection with the development of the Dominion Atlantic Ry., when it is taken over, is the building of a line of about 30 miles to Chester.

St. John, N.B.—Local reports state that it is proposed to expend $1,000,000 on terminals on the property recently acquired at the head of the harbor.

Windsor St. Improvements, Montreal.—The company has acquired the property of the Calvary congregational church, near its Windsor St. terminals, for $28,000, and will be given possession June, 1912.

Place Viger Improvements, Montreal.—In connection with the plans for the station building, it is said that for the present the building will be two stories high, with a flat roof. The idea to make it a four story building with gabled and turreted roof, like the hotel, with the two top stories as an annex to the hotel, will probably be carried out later.

A permit was issued at the city hall Feb. 8, for the new freight sheds, which are to extend from Lacroix St. to Montcalm St., and are to cost about $100,000.

Campbellford, Lake Ontario and Western Ry.—The application of the company for the repeal of sec. 8, chap. 54, of the statutes of 1904, and the substitution of a new subsection, locating the line to be built as from between Smiths Falls and Sharbot Lake southwesterly to Cobourg, and thence westerly to the C.P.R. between Locust Hill and Leaside Jct., met with considerable opposition in the House of Commons. The opposition was settled by the withdrawal of the portion of the bill repealing sec. 8. The effect of this is that the company has power to build from the C.P.R. between Blairton and Ivanhoe, as well as from between Smiths Falls and Sharbot Lake, to between Locust Hill and Leaside Jct.

Press reports, Feb. 16, state that the new line will leave the C.P.R. Toronto-Montreal line at Bathurst, about 10 miles west of Smiths Falls, and proceed southwesterly to Belleville, and thence along the lake to Leaside Jct., paralleling the G.T.R. for the greater part of the way.

Georgian Bay and Seaboard Ry.—The Board of Railway Commissioners has authorized the building of a bridge over the Talbot River.

The contract let to the Toronto Construction Co. for the section of the line from Coldwater easterly, has been extended so as to cover the last 38 miles, ending with a junction with the C.P.R. Toronto-Montreal line at Bethany siding, Ont.

Toronto to Windsor Bridges.—It is reported that all wooden bridges on the line between Toronto and Windsor, Ont., are to be replaced by steel spans on concrete piers and abutments. For the past two or three years the company has been putting in concrete culverts, as well as abutments for bridges along the line, and this report suggests that the work is to be gone on with until all the bridges have been removed, so as to make them in a better condition to carry the heavier traffic.

London, Ont., Improvements.—A London, Ont., press report, Feb. 14, states that work in connection with the building of a new station and roundhouse, and the enlargement of the yards there, at a cost of about $250,000, is to be started at an early date.

Port Arthur-Fort William second track—We are advised that it is proposed to start building the second track between Port Arthur and Fort William, Ont., about April 1, and that the work will be done by the company's own staff.

Brandon to Kemnay.—The Board of Railway Commissioners has authorized the opening for traffic of a short diversion of the line between Brandon and Kemnay, Man.

Brandon to Birtle, Man.—A resolution has been passed by residents of the district between Brandon and Birtle, Man., asking the Dominion Government to grant such an increased subsidy as will ensure the building of a direct line between these two points. The route surveyed shows a very difficult country for construction for seven miles southerly from Birtle, and an extra subsidy of $12,000 is asked. The total subsidy usually given is estimated at $106,000, and the amount asked for is $118,000.

Weyburn-Lethbridge Branch. — The Board of Railway Commissioners has approved the revised location of this branch from sec. 17, tp. 8, range 18, at mileage 26.2 to sec. 22, tp. 7, range 22, at mileage 52.2.

Lethbridge, Alta., people are anxious that work be started from there easterly, and have been in communication with the management on the matter. A telegram has been received by W. A. Buchanan, M.L.A., from W. Whyte, Vice President, to the effect that additional mileage was being built at once westerly, and that later some building would be done from the west end easterly.

Subway at Regina, Sask.—The Board of Railway Commissioners has authorized the city of Regina to build a subway under the C.P.R. tracks at Broad St., and to close Hamilton St. Five thousand dollars will be paid out of the railway grade crossing fund towards the cost.

Relocation West of Regina.—The Board of Railway Commissioners has approved of revised location of locations previously approved, from mileage 89.8 from Regina, Sask., to mileage 100.1.

Moose Jaw Northwesterly. — Castor Southeasterly.—The Board of Railway Commissioners has authorized the company to carry its tracks across some 108 highways, and to divert such highways where necessary, between mileage 9.59 and 119.6 on the line from Moose Jaw northwesterly. It has also approved location plans for the extension of the Calgary and Edmonton Ry. branch now terminating at Castor, Alta., at mileage 100, to the located line of the Moose Jaw northwesterly branch in sec. 23, tp. 34, range 23, west 3rd meridian, at mileage 221.9 in Saskatchewan.

Moose Jaw Second Track.—We are officially advised that the second track work to be done this year easterly from Moose Jaw to Pasqua, Sask., seven miles, will be a diversion in order to reduce the gradient to 0.4%. It is also intended to build a second track westerly from Moose Jaw to Caron, 16 miles.

North Portal Water Supply.—A press report states that a pumping station is to be built on the banks of the Souris River, about eight miles from North Portal, Sask. The work is estimated to cost $50,000.

Langdon Branch.—The Board of Railway Commissioners has authorized the company to build an extension of the branch to Langdon station, and across certain road allowances.

Wilkie-Tramping Lake Line.—In connection with the building of this line, W. Whyte, Vice President, is quoted as having stated at Winnipeg, that this branch which will be run down both sides of Tramping Lake, and will connect at two points with the Moose Jaw-Castor line. This line is one of those which the Dominion Parliament is being asked for authority to build. The junction of one of the lines will be in tp. 30, r. 16 or 17, west 3rd meridian, and the other is described in the bill as running from near Kerr Robert, northeasterly and easterly to a junction with the line from Wilkie, in tp. 38 or 39, r. 19 or 20, west 3rd meridian.

Strathcona-Edmonton Line.—Work is being resumed on the substructure for the high level bridge across the Saskatchewan River between Strathcona and Edmonton, Alta. The piers have been completed to about water level, and it is expected that those on the Strathcona side will be ready for the steel workers early in the summer. It is expected that the bridge will be completed this year.

In connection with this work press reports state that Edmonton will be reached from Winnipeg, by way of a line to be built from Sedgewick, mileage 580, on the Kirkella-Wetaskiwin line, running direct to Strathcona, about 90 miles, and that when completed this line will be extended to the Peace River Valley, and if a favorable pass can be secured, on to the Pacific coast.

Hotel in Calgary.—An arrangement has been completed between the company as represented by F. W. Peters, Assistant to the Vice President, and the Calgary city council, by which the hotel to be built in that city will be freed from all taxation, providing the company pays $4,000 a year and undertakes one-half of the cost of paving Ninth Ave. from First St. west to First St. East, and a quarter of the cost from First St. East to Fifth St. East.

Calgary, Alta.—The Board of Railway Commissioners has authorized the company to build an overhead bridge in lieu of a subway between secs. 11 and 12, tp. 24, r. 1, Calgary, Alta., and has approved an agreement therefor between the company and the city.

Westminster Jct.—Coquitlam. — F. W. Peters, Assistant to Vice President, met the municipal council of Coquitlam B.C., Feb. 7, and discussed plans for the erection of a roundhouse, car shops and freight sheds in the vicinity of Westminster Jct. It is reported that about 1,100 acres have been acquired at a cost of $750,000, through the Royal Trust Co., the land purchased extending from Westminster Jct. on the west to Pitt River on the east, and along the west bank of the Pitt River to the confluence of the Pitt and Fraser rivers, giving a water frontage of 1½ miles. As a result of the conference a delegation from the municipal council went to Victoria, Feb. 8, for the purpose of obtaining the necessary authority from the Legislature to enter into an agreement with the company.

Vancouver, B.C.—In a recent interview, W. Whyte, Vice President, said the company's plans for Vancouver were not yet completed, but extensive improvements were under consideration. There would be large extensions of the yards; a jetty wall would be built in order to extend the wharf accommodation, and it was possible that Granville St. would be extended through the station and a bridge built over the tracks to the wharf.

A local report states that among the works contemplated is the erection of a new station, with a headquarter office building at the foot of Seymour St.

Esquimalt and Nanaimo Ry.—The engineers running preliminary lines for a proposed extension of the line from French Creek, north to Campbell River, have returned to Vancouver, and will go out again in the spring.

The grading on the Alberni line is expected to be completed Apr. 1, and the bridge work is well forward. Track laying from Cameron Lake towards Alberni will be started at once, and it is expected to have the extension ready for operation before the fall.

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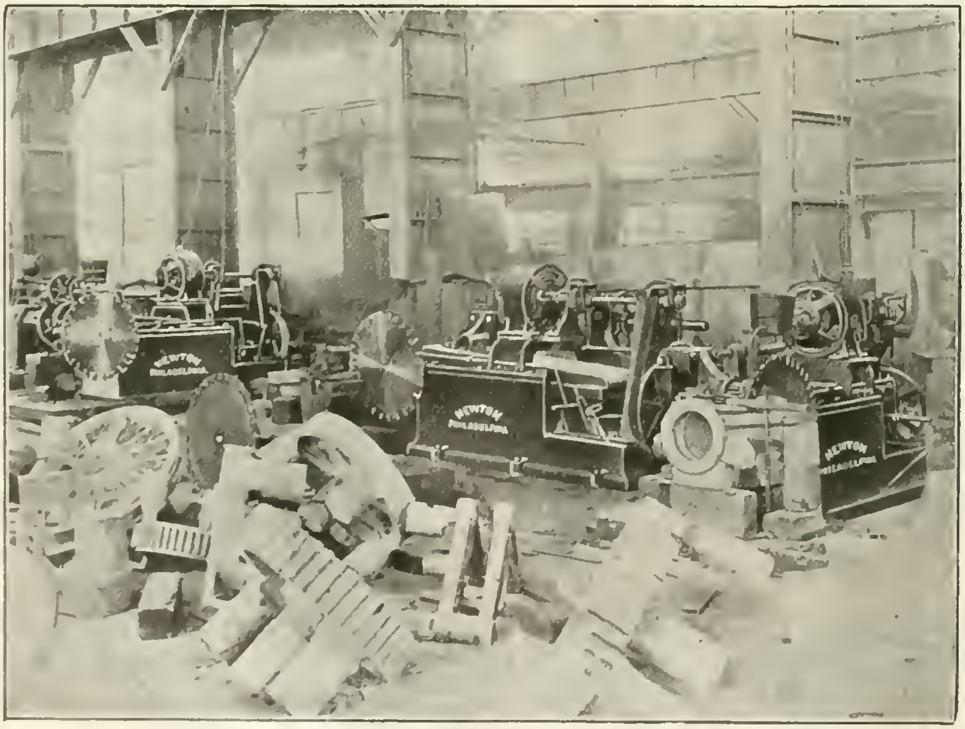

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Minneapolis, St. Paul and Sault Ste. Marie Ry.—Press reports state that the extension proposed from Ambrose, N.D., to Plentywood, Minn., will not be built at present.

Duluth, South Shore and Atlantic Ry.—Second track was laid during 1910 on 3.75 miles of line. 2.48 miles of new sidings were laid. and 2.5 miles of main line easterly from Negaunce, Minn., were reconstructed.

Mineral Range Rd.—During 1910 the company relaid 24 miles of its tracks with new 80 lb. steel rails. (Feb., pg. 137.)

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Railway Finance, Meetings, Etc.

Alberta Ry. and Irrigation Co.—At a special general meeting of shareholders an agreement was authorized Feb. 22, in London, Eng., with the C.P.R. for the sale and conveyance, or lease of all the corporate powers. and all, or any portion of the railways, lands, works and undertakings, and all other powers, rights, privileges, franchises and assets, and to approve the conveyance or lease, in return for a guaranteed annuity of 6% on its capital stock.

Approximate net profits from all sources, exclusive of land sales for Dec., 1910, $40,583, against $43,820 for Dec., 1909. Cumulative net profits for six months ended Dec. 31, 1910, $189,270. Railway traffic receipts for Jan., $15,723, against $21,442 for Jan., 1910. Cumulative traffic receipts for seven months ended Jan. 31, $201,887. .

Dominion Atlantic Ry.—Gross earnings for Dec. 1910, $85,700, against $97,451 for Dec. 1909; aggregate gross earnings for six months ended Dec 31, 1910, $773,506, against $821,295 for same period 1909.

Grand Trunk Ry.—An issue of £750,000 of perpetual consolidated debenture stock was placed on the market recently by Glyn, Mills, Currie and Co., London, Eng. Of the issue price, 5% is due on application, 15% on allotment, and 40% each time on Mar. 1 and Apr. 1. Interest is payable quarterly on Jan., Apr., July and Oct. 14 in each year, a coupon of 5s. per £100 stock being payable on Apr. 1. The stock, proceeds of which will be applied to general purposes, will rank parri passu with the existing 4% perpetual consolidated debenture stock.

Lake Superior Corporation.—A special general meeting of shareholders was called for Mar. 1, at Camden, N.J., to approve a plan for financing the completion of the Sudbury-Little Current section of the Manitoulin and North Shore Ry., and to confirm a resolution of the directors guaranteeing the principal and interest of a proposed issue of first mortgage 5% fifty year gold bonds of the M. & N.S.R. to $30,000 a mile of the railway, limited in the aggregate to $3,000,000 par value; to approve the sale of the stocks and bonds of the Sault Ste. Marie Pulp and Paper Co., owned by the Lake Superior Corporation, and for other purposes.

Manitoulin and North Shore Ry.—A special general meeting of shareholders was called Feb. 22, to authorize the issue of 1st mortgage 5% fifty year gold bonds for $30,000 a mile for the full mileage of the lines authorized under the act of incorporation and amendments thereto. between Sudbury and Little Current, to be secured by a mortgage and deed of trust on and of all the property now owned or hereafter to be acquired: to authorize the increase of the capital stock from $1,000,000 to $3,000,000, and to authorize the issue of $1,000,000 of the $3,000,000 capital stock of 5% non-cumulative preferred stock, and for other purposes

New Brunswick and Prince Edward Island Ry.—Press reports state that G. M. Siddall, of Port Elgin, N.B., has secured options on the majority of the stock of this company. The line extends from Sackville, on the Intercolonial Ry., to Cape Tourmentine, N.B., 36 miles.

Quebec and Lake St. John Ry.—Total earnings for Jan., $40,773.40 against $37,654.84 for Jan. 1910. Mileage operated, 285.4; earnings per mile. $142.85, against 280 miles operated and $134.48 earnings per mile in Jan. 1910

Quebec Central Ry.—A London, Eng., paper, in referring to the reports as to the probable sale of this line, says considerable caution should be observed in regard to them, as "while the line is not up for sale, the directors would not turn away from a promising deal," and that "it appears possible that the assets may change hands before long, and on terms which should prove satisfactory to the existing proprietors."

Quebec Central Ry.—Gross earnings for Dec., 1910, $74,955.17; expenses, $60,708.11; net earnings, $14,247.06, against $82,589.52 gross earnings; $62,852.998 expenses; $19,736.54 net earnings for Dec., 1909. Aggregate gross earnings for six months ended Dec. 31, 1910, $620,836.66; expenses, $412,760.80; net earnings, $208,075.86, against $580,626.45 aggregate gross earnings; $388,361.76 expenses; $192,264.69 net earnings for same period 1909.

Temiskaming and Northern Ontario Ry.—Gross earnings for Jan., $124,484, against $131,254 for Jan., 1910.

The Vancouver, Westminster and Yukon Ry. Co. has given notice of a call of 10% on the subscribed stock, other than the shares held under certificate 16, in respect of shares numbered 10221 to Mar. 15, to the Secretary at Vancouver B.C., in accordance with a bylaw passed 35220 inclusive, payable on or before Jan. 3.

Western Coal and Coke Co.—Following are the directors for the current year, elected at the annual meeting Feb. 14:—E. B. Greenshields, Hon. R. Mackay, J. W. McConnell, H. A. Lovett, K.C.; C. Fergie, M. Curry.

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Canadian Northern Ry. Earnings, Etc.

Gross earnings, working expenses and net profits from July 1,, 1910, with increases over, or decreases from, those of 1909-10 :

	Earnings.	Expenses.	Net. Earnings	Net Increase.
July	$1,225,100	$876,900	$348,200	118,600
Aug.	1,093,000	830,000	263,000	58,600
Sept.	1,279,900	898,700	381,200	69,700
Oct.	1,627,800	1,047,300	580,500	99,800
Nov.	1,565,400	1,006,500	558,900	11,500
Dec.	1,255,400	896,200	359,200	24,800
	$8,046,600	$5,555,600	$2,491,000	$383,000
Inc.	$1,257,200	$874,200	$383,000	....

Approximate gross earnings for Jan., $822,600, and for two weeks ended Feb. 14, $363,000, against $791,600, and $358,000, for same periods 1910.

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C.P.R. Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases over 1909-10, from July 1, 1910 :

	Earnings.	Expenses.	Net Profits.	Net Increase or Decrease.
July	$8,869,214.32	5,384,594.73	3,484,619.50.	1,004,748.86+
Aug.	9,255,331.67	5,563,659.34	3,691,672.33	727,614.46+
Sept.	9,315,213.67	5,403,614.03	3,911,599.64	479,710.47+
Oct.	10,229,370.77	5,724,210.25	4,505,160 52	118,863.33+
Nov.	9,413,238.22	5,676,115.96	3,737,122.26	44,784.31+
Dec.	8,705,283.99	5,418,750.10	3,286,533.87	171,110.79−
	$55,787,652.64	$33,170,944.41	$22,616,708.23	$2,546,832.22+
Inc.	$5,862,141.22	$3,315,309.00	$2,546,852.22	....

Approximate gross earnings for Jan., $5,650,000, and for two weeks ended Feb. 14, $2,749,000 against $6,007,000 and $2,888,000,for same period 1910.

DULUTH, SOUTH SHORE AND ATLANTIC RY.—Operating revenue for Dec., 1910, $249,758; operating expenses, $174,114.75; net revenue, $75,638.29, against $236,364 operating revenue; $164,201.12 operating expenses; $72,163.83 net revenue for Dec., 1909. Aggregate operating revenue for six months ended Dec. 31, 1910, $1,734,947.72; operating expenses, $1,133,196.40; net revenue, $601,751.32, against $1,719,742.71 aggregate operating revenue; $1,149,182.67 operating expenses; $570,560.04 net revenue for same period 1909. Approximate gross earnings for Jan., $235,120. and for two weeks ended Feb. 14, $96,317, against $219,885, and $101,464 for same period 1910.

MINERAL RANGE RD.—Operating revenue for Dec., 1910, $64,934.37; operating expenses, $58,617.53; net revenue, $6,316.84, against $69,790.85 operating revenue; $58,463.88 operating expenses; $11,326.97 net revenue for Dec., 1909. Aggregate operating revenue for six months ended Dec. 31, 1910, $379,875.52; operating expenses, $376,665.20: net revenue, $3,210.82, against $439,286.02 aggregate operating revenue; $366,652.25 operating expenses; $72,633.77 net revenue for same period 1909. Approximate gross earnings for Jan., $65,404, and for two weeks ended Feb. 14, $29,444, against $65,600 and $30,258 for same periods 1910.

MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE Ry.—Total operating revenue for December, 1910, $997,712.28; expenses and taxes, $755,310.48; operating income, $242,401.80, against $1,044,495.93 total operating revenue; $671,407.59 expenses and taxes; $373,088.34 operating income for Dec., 1909. Aggregate total operating revenue for six months ended Dec. 31, 1910, $7,159,472.02; expenses and taxes, $4,566,236.37; operating income, $2,593,235.65, against $8,592,203.64 aggregate total operating revenue; $4,560,913.21 expenses and taxes; $4,031,290.43 operating income for same period, 1909. Aggregate gross earnings for January, $1,517,271, and for two weeks ended Feb. 14, $697,464, against $1,568,719 and $748,521 for same periods 1910.

CHICAGO DIVISION.—Total operating revenue for Dec., 1910, $695,348.69; expenses and taxes, $607,158.67: operating income, $88,190.02, against $573,855.43 total operating revenue; $503,741.62 expenses and taxes; $70,113.81 operating income for Dec., 1909. Aggregate total operating revenue for six months ended Dec. 31, 1910, $4,692,038.38; expenses and taxes, $3,533,107.44: operating income, $1 158,930.94, against $4,277,460.14 aggregate total operating revenue; $2,994,044 43 expenses and taxes; $1,283,415.71 operating income for same period 1909.

◆

Grand Trunk Ry. Earnings, Expenses, Etc.

Subject to audit, the accounts for the half year to Dec. 31, 1910, show the following results:—

Gross receipts		£3,699,900
Working expenses		2,790,700
Net receipts		£ 909,200
Income from rentals; outside operations, and car mileage balances		38,400
Total net revenue		£ 947,600
Net revenue charges for the half-year, less credits		525,400
Balance		£ 422,200
Deduct, Canada Atlantic Ry. deficiency for the half-year	£40,100	
Less D., G.H. & M. Ry. surplus for the half-year	3,900	
		36,200
Surplus		£ 386,000

This surplus of £386,000 added to the balance of £12.500 from June 1910 makes a total of £398,500 available for dividend, which will admit of the payment of dividend for the half-year on the 4% guaranteed stock, and first and second preference stocks, and a dividend of one-half of 1% for the year on the third preference stock, leaving a balance of about £9,000 to be carried forward

The accounts of the G.T. Western Ry. for the half-year including the balance brought forward, show a surplus of £1,700 which amount is carried forward to the current half-year.

Approximate gross earnings for Jan., $3,381 239, and for two weeks ended Feb. 14 $1,489,366, against $3,152,992 and $1,449,558 for same periods 1910.

TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate from Jan. 1 to Jan. 31:—

	1911.	1910.	Inc.
Grand Trunk Ry. ..	£514,227	£490,217	£24,010
Canada Atlantic Ry. .	32,599	29 373	3 226
G.T. Western Ry. ..	113,188	95,664	17 524
D.G.H. & M. Ry. ...	34,761	32,621	2 140
Totals	£694,775	£647,875	£46,900

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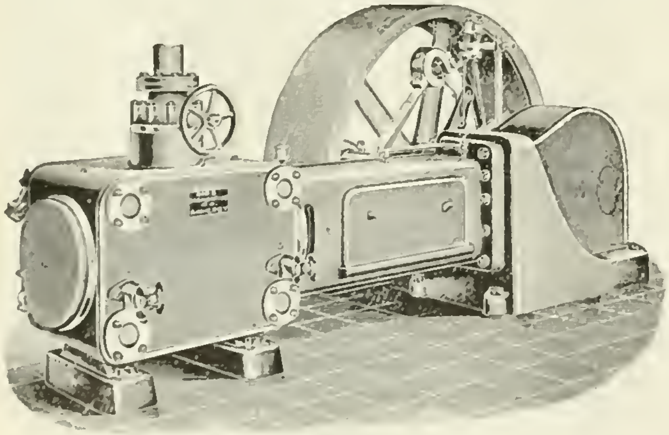

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Union Bank Building, Winnipeg - W. F. Porter, "
Grain Exchange Bldg. Calgary - J. F. Porter "

Canadian Northern Ry. Construction, Etc.

Canadian Northern Quebec Ry.—The Board of Railway Commissioners has authorized the company to use tracks on the bridge over the St. Charles river, near Quebec, including property used in common by the Quebec Ry., Light and Power Co., and the Quebec and Lake St. John Ry., for entering Quebec, $1,500 a year rental to be paid to the former company, and also to pay all arrears for the use of the bridge, and be responsible for its share of its maintenance and operation. The Board has also approved the extension of the yards between Moreau and Marlborough streets, and dismissed the applications for closing Robillard St., the extension of yards in Hochelaga, to cross Marlborough St., and to take certain lands on Stadacona and Marlborough streets.

Canadian Northern Ontario Ry.—The Board of Railway Commissioners has approved a revised location for a section of the line under construction in St. Andrews parish, Que., authorized the company to build an overhead bridge across the C.P.R. near Jacques Cartier Jct., mileage 49.3, south from Hawkesbury, Ont.; to lay tracks across various highways and streets, and to build bridges over creeks, on the line under construction between Toronto and Ottawa.

Plans have been filed showing the route of the proposed entrance into North Toronto for the line to Buffalo. The new line is a prolongation of the Electric Development Co.'s right of way from where it ceases at Davenport Road, north of the C.P.R., to McLennan Ave. Several streets will be closed, and the tracks will be elevated between Avenue Road and Yonge St., at both of which points subways will be built. The route from Toronto will follow the Electric Development Co.'s right of way as far as possible. The entrance into Hamilton is at present undecided, but it is said that a route paralleling the G.T.R. from Burlington to the Valley Inn has been laid out. No plans have been filed with the city authorities, although the mayor was advised Feb. 4 that they were ready, neither has any report been received from the Board of Railway Commissioners' Chief Engineer, to whom the matter was referred some time ago. Various properties have been purchased near the old N. and N.W. Ry. at Ferrie St., Queen and Greig streets, by persons said to represent the company.

The Electric Development Co. has a right of way from Hamilton to Cainsville, and the C.N.O.R. has filed plans for an entrance into Brantford over this route. (See Toronto, Niagara and Western Ry., Jan., pg. 61.)

Surveys are reported completed for a line from Rideau Jct., on the Toronto-Ottawa line, about six miles southwest from Ottawa, to Port Arthur, effecting a junction on the way with the line from Toronto, via Sudbury, now terminating at Gowganda Jct. The route laid out is said to cross the Ottawa River at Fitzroy Harbor, and to return to the Ontario side of the river at Portage du Port, entering Pembroke from the rear, and on to Petawawa, skirting the south end of the military reserve, and following the valley of the Petawawa River through a section of Algonquin Forest reserve to Cedar Lake, then crossing a low divide to the collecting basin of the Amable du Fond. The route is right across country to Wistiwasing, where a settled country is again reached. Near here a branch line will diverge to Key Inlet, while the main line will pass Callender and Nipissing Jct., to North Bay. On leaving North Bay the line surveyed ascends the Sturgeon and Kapikotiwia rivers, crosses the Wahnapitei river, and on to a junction with the line now in operation to Toronto, near Capreol. From this point the line proceeds westward, getting on the Hudson Bay slope, and crossing various rivers, passing within 30 miles of the great fall of the Pic River, and rounding the head of Long Lake, it heads southwest for Lake Nipigon, and then to Port Arthur.

Replying to questions in the Ontario Legislature, Feb. 8, the Premier said the company had not made application for an extension of time for the building of the line from Sellwood Jct. to Port Arthur, for which the Legislature had voted 4,000 acres of land a mile, the line to be completed in 1913. There had been completed 30.65 miles of the line; an additional 15 miles had been graded, and some 300 miles of location surveys had been approved by the Board of Railway Commissioners. These replies apply to the second portion of the route described above.

A deputation from Parry Sound waited on the Ontario Government Feb. 3 and requested that the Legislature be asked to guarantee the C.N.O.R. bonds for a line from Parry Sound to North Bay, about 75 miles. The Premier promised consideration.

The city solicitor of Port Arthur states that he was advised by Sir Donald D. Mann that construction would be started at that city easterly in the spring, and that the line would be completed as far as Nipigon by the end of the year.

Canadian Northern Ry.—A Winnipeg press dispatch, Feb. 11, states that an agreement has been arrived at by which the Great Northern Ry. and the Northern Pacific Ry. will use the Fort Parry station being built in Winnipeg by the C.N.R. for the joint use of the C.N.R. and the G.T. Pacific Ry. A later dispatch says the G.N.R. has withdrawn from the agreement, and that it will build its own terminus in Winnipeg.

The Oak Point branch, heretofore terminating at Oak Point, on Lake Manitoba, was extended during 1910 to Gypsumville, Man., 96.84 miles. A further extension will probably be undertaken during this year.

The Greenway branch, heretofore terminating at Adelpha, Man., was extended during 1910 for 12.90 miles westerly, and it is expected that some additional mileage will be built this year.

The Maryfield branch, which had its terminus at Lampman, Sask., was extended westerly for 88.81 miles during 1910. This line is under construction to Lethbridge, Alta. A branch from this line extends to Bienfait, and it was stated in the Saskatchewan Legislature recently that the fact that the C.N.R. had practically ceased to operate its line from Maryfield to Bienfait, Sask., since Jan. 1, had been brought to the attention of the Government, and that steps had been taken to induce the company to resume operations.

The Rossburn section branches off the main line at Neepawa Jct., and was in operation to Stornoway, Sask., 199 miles, early in 1910. During 1910 track was laid for 16.46 miles westerly. It is intended to extend the line westerly to a junction with the main line to Edmonton near Tiny or Buchanan.

The Hallboro branch starts at Hallboro, on the Rossburn Section, and has been completed to Beulah, Man., 6.15 miles.

The Oakland branch has its present terminus at Totogan, 27 miles from Arizona Jct., Man., where it leaves the main line. It is proposed to extend this line along the western shores of Lake Manitoba, for some miles, and then to swing westerly, effecting a junction with the main line near Makinate.

The Thunder Hill branch starts from near Swan River, and is in operation to Pelly, Sask. The line is projected westerly to a junction with a proposed line east of the Saskatchewan River, from Humboldt on the Edmonton line, to Melfort, on the Prince Albert line. It is expected that some construction will be done on this line this year.

A line is under construction from Prince Albert to Battleford, Sask., and track was laid during 1910 on it for 16.13 miles, from Prince Albert to Shellbrook. It is expected that this line will be completed during the current year. Starting at Shellbrook, a branch is under construction to the Crooked Lake district, on which track was laid during 1910, to Big River, 56.95 miles. A further extension will probably be put in hand this year.

A branch line is under construction from North Battleford to Jackfish Lake, Sask., and on this line track was laid during 1910, between North Battleford and Meots, 22.59 miles.

A branch line is projected from Regina westerly to Moose Jaw, and it is expected that progress will be made with construction on it this year.

The Goose Lake branch was in operation during 1910 from Saskatoon to Kindersley, Sask., 126 miles. Track was laid during 1910 for 49.90 miles westerly. This line, it is proposed, shall be extended into Calgary. The Board of Railway Commissioners has approved of revised location through tp. 28, ranges 4, 5 and 6, west 4th meridian, mileage 196.64 to 210.21, from a junction with the Qu'Appelle, Long Lake and Saskatchewan Ry. A line to be known as the Delisle branch is under construction from Delisle, on the Goose Lake line, southerly, and it is expected that an additional mileage will be graded this year.

The Vegreville-Calgary branch line, on which track was laid in 1909 to Ryley, Alta., was extended during 1910 to Red Deer River, 155.23 miles. This line is to be extended this year into Calgary. A branch line is being built from Stettler westerly into the Brazeau River coalfields, and further construction will be gone on with during this year.

It is also proposed to continue the grading for the main line west of St. Albert, Alta.

The contractors engaged on these different lines are: Cowan Construction Co., McMillan Bros. and Kenny, Ltd., Northern Construction Co., Janse and Macdonald, and M. McCrimmon.

Press reports state that it is expected that all the line from Pembina River to the Yellowhead Pass will be placed under contract in the spring. A survey party left Edmonton, Jan. 29, to revise the location west of the Pembina River ready for the contractors. It is expected that this contract will go to the Union Construction Co., which is the new name of the Cowan Construction Co., the Manitoba Legislature having been asked to give the necessary authority. A Winnipeg dispatch states that C. J. Merry, President of the construction company, and F. Owens, the Superintendent, left Winnipeg Feb. 9 to open up work on the section of the line to the Rocky Mountains, a contract for a 200 mile stretch having been arranged. The contractors for the line to Pembina River, McMillan Bros., are reported to be making satisfactory progress. Preparations are being made for the letting of contracts for the substructure and steel work of the bridge across the Pembina River.

Canadian Northern Branch Lines Co.—The Dominion Parliament is being asked to incorporate a company with this title with power to build branch lines from 18 different points in Manitoba, Saskatchewan and Alberta, the starting and terminal points of which were given in our Dec., 1910, issue, page 1031. The provisional directors are: F.

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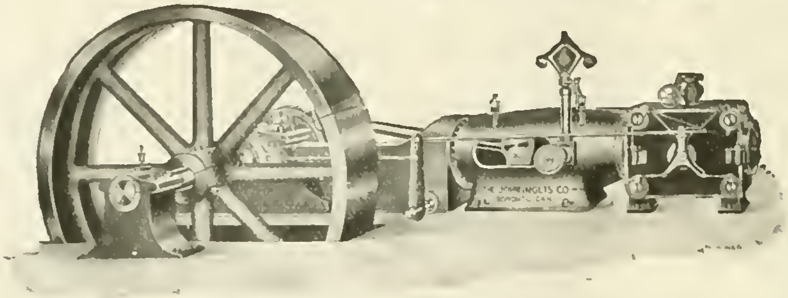

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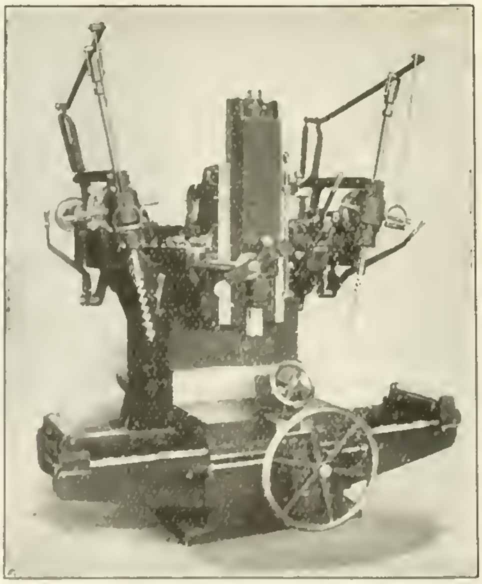

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Edmonton and Slave Lake Ry.—The Board of Railway Commissioners has recommended the sanctioning by the Governor-in-Council of the amalgamation of the E. and S.L.R. with the C.N.R.

Canadian Northern Pacific Ry.—In connection with the route of the line from Chilliwack to Hope, B.C., we understand that there are some matters about which negotiations are being carried on with the Vancouver, Victoria and Eastern Ry., and that an early adjustment is expected. Good progress is being made with the grading between Port Kells and Popkum, and it is expected that tracklaying will be started at Port Kells by April 1. Press reports state that preparations are being made for letting another contract at an early date for the section extending from Hope to Boston Bar, 42 miles.

The surveys for the terminal site at Port Mann were reported completed Jan. 28, the site covering 4,000 acres, with a waterfront of 2½ miles. There is said to be a depth of 40 ft. of water along the front. There has been deposited with the Minister of Public Works at Ottawa. copies of the plan and description of the site and elevation of the railway wharf proposed to be built. The contractors for clearing the site are reported to have over 500 men at work. It is expected that work will be started at an early date on the area selected for terminal purposes, and that the lots will be put on the market June 1.

Vancouver Island Ry.—We are advised that the contract for the first 40 miles of the section of the C.N. Pacific Ry., which is being built on Vancouver Island, has been let to Grant, Smith and Co. Press reports state that the firm consists of M. Carlin and Grant Smith, and that the contract was signed by them and by T. G. Holt, attorney at Vancouver for Mackenzie, Mann & Co., Jan. 21. The contract covers the building of about 40 miles of line, from 4.7 miles from Victoria to the vicinity of Shawinigan Lake, the work to be finished within a year. Work was started at Peddar Bay, Feb. 6, by a gang of 60 men, under sub-contractor Macdonald. Other subcontracts are being let.

The route surveyed swings slightly east from Sooke Lake, to which point location has been completed, reaching Shawingan Lake at its extreme southeast corner. skirting its western shore, and then following the northwest arm, crossing the Koksilah river about a mile from the lake, then swinging to the northwest to the Cowichan River, about nine miles west of Duncan, and follows that river to the lake near the mouth of Mud Creek. Cowichan Lake is followed for its entire length on the north side, and at the western end the route swings abruptly northerly to the Nitinat River, which is followed to within five miles of Nitinat Lake. then curves northerly to the head of Coleman Creek, and along the valley of that creek to its outlet in Barkley Sound, whence it follows the deviations of the Alberni canal to Alberni.

Duluth, Winnipeg and Pacific Ry.—Tracklaying is expected to be started on this line May 1, by which time the grading and bridge work is expected to be completed. The approaches to the tunnel at Shoreline Park, Duluth, Minn., have been cut, and preparations are being made for driving the tunnel through the 500 ft. of granite which lies between the two approaches. (Feb., pg. 141.)

◆

The Dominion Wire Rope Co., Ltd. Montreal, has increased its capital stock from $200,000 to $500,000.

National Transcontinental Railway.

Replying to a question in the House of Commons Feb. 6, the Minister of Railways said the cost of the N.T.R. from Moncton to Winnipeg, to the end of 1910, was 89,553,740, and on the following day stated that while that was the actual amount paid out to Dec. 31, the work done to that date which was being paid for brought up the total cost to $93,920,956.16. On another occasion he stated that the section of the line between Moncton and the St Lawrence, was expected to be opened by Sept. 1912. The state of completion on the several contracts on the section at Dec. 31, 1910, was as follows:

Contract	Contractors.	Percentage of work done	Percentage of work remaining to be done.
1	Grand Trunk Pacific Ry. Co........	99.5	0·5
2	Jno. W McManus & Co.	98·09	1·91
3	Grand Trunk Pacific Ry. Co........	98·64	1·36
4	Grand Trunk Pacific Ry. Co........	99.22	0·78
5	Willard Kitchen Co.......	89.48	10·52
6	Lyons & White..................	88.70	11·30
7	M. P. & J. T. Davis	62.80	37·20
8	M. P. & J. T. Davis....	75.70	24.30

There were then 1,450 men employed on the several contracts.

A contract has been let to J. A. Latouche, for the clearing away of the old buildings on the Champlain Market site, Quebec, in preparation for the erection of a terminal station thereon

Replying to questions in the House of Commons, Jan. 26, the Minister of Railways said neither the Government nor the National Transcontinental Railway Commission had entered into any agreement or working arrangement of any kind with the Province of Ontario or the Commission operating the Temiskaming and Northern Ontario Ry. regarding the securing of running powers over that line from Cochrane to North Bay, Ont., or to any other point; nor was it intended to discontinue the construction of the N.T.R., in whole or in part, permanently or temporarily. east of Cochrane.

The report of the arbitrators on the over-break, etc.. on certain contracts has been handed to the Government and will be laid before Parliament. Press reports state that the finding of the arbitrators does not say in so many dollars how much is to be deducted. but it takes each particular part of the work complained of and lays down a ruling as to what the measurements and allowances should have been. This will be compared with what was allowed and if the latter is in excess of the arbitrators' findings. deductions will have to be made accordingly. About $500,000 will, it is estimated, be taken off contractors and sub-contractors. It will come out of the drawbacks held by the Government. If dissatisfied with the award those who are affected will have the right to appeal to the Exchequer Court.

Grand Trunk Pacific Railway.

There have been persistent rumors in Brandon. Man.. to the effect that the G.T.P.R. was negotiating for the purchase or lease. or for running powers over the Brandon, Saskatchewan and Hudson Bay Ry.. a line owned by the Great Northern Ry., U.S., and that the line would be at once extended to the G.T. Pacific Ry. Several conferences have taken place between G.T. Pacific Ry. officers and the city council. at which the mayor asked the company to give Brandon a branch line.

Press reports state that a G.T.P.R. engineering party is at work in the vicinity of Frobisher. Sask., making a survey for a line towards the International boundary.

The Board of Railway Commissioners has approved plans for the station at Balcarres, Sask.. on the line from Melville to Regina: of the revised location plans for the branch from Regina to the International boundary from mileage 88.32 to 100, and location surveys from mileage 100 to 130.92.

A deputation representing the Saskatoon, Sask., city council, waited on Vice President Chamberlain, at Winnipeg, recently, with a view of discussing the entrance of one of the company's projected branch lines into the city. Four propositions have been submitted to the city council.

The Board of Railway Commissioners has authorized the company to lay tracks for its Young-Prince Albert branch across certain highways in East Saskatchewan district. and has approved of location plans for the same line from mileage 110.9 to the east boundary of First Ave,, east. Prince Albert, Sask.

Calgary press reports state that that city is to be made an important centre by the G.T.P Ry. It will be the meeting point for the line from Tofield, now under construction; another from Moose Jaw, Sask.; and other lines preceding to Lethbridge, and other southerly and westerly points, while other lines will connect up with these branches from different points. The line from Tofield is expected to be completed by Sept. A conference between officers of the company and the city council representatives was held Feb. 4, with a view of completing arrangements for the entrance into Calgary.

Press reports state that the main line to Tete Jaune Cache. 47 miles west of the Rocky Mountains, will be completed by the end of the season. The contractors have been doing a good deal of rock work west of the Athabasca River during the winter, and preparations are being made for starting up other work.

Surveys for the proposed branch line from Fort George to Vancouver are being gone on with, and two lines are being run by way of the Pemberton Valley.

At Prince Rupert, B.C., a great deal of work has been done in the way of laying track in the yards, laying tracks on the wharves. and providing additional wharf accommodation. (Feb., pg. 117.)

Protection of Railway Employes.

Upon the recommendation of the Chief Operating Officer and the Board of Railway Commissioners order 12890 was passed. Feb. 6, amending order 12225. Nov. 9, 1910, respecting the protection of railway employes. which was given in full in our Dec. 1910 issue. making subclause c, of clause 8, read as follows:

(c) No structure except mail cranes, which shall be erected and maintained as directed in order 5647, Nov 20, 1908, over 4 ft. high shall hereafter be placed within 6 ft. from the gauge side of the nearest rail without first obtaining the approval of the Board.

◆

The city of St. Thomas is asking power from the Ontario Legislature to fix the amount to be paid yearly by the Canada Southern Ry. or Michigan Central Rd., in payment or commutation of its taxes, rates and assessment on right-of-way, yards, buildings and structures, lying north of Wellington St., St. Thomas, notwithstanding any provision in any act to the contrary.

The Saskatchewan Legislature has passed a resolution expressing the opinion that "action should be taken to compel the railway companies to pay compensation for right of way for new lines, within reasonable time after taking possession of farmers' land for this purpose, and that if for any cause railway companies are unable by reason of any provision of law to promptly pay such compensation, such law should be amended so as to enable them to do so."

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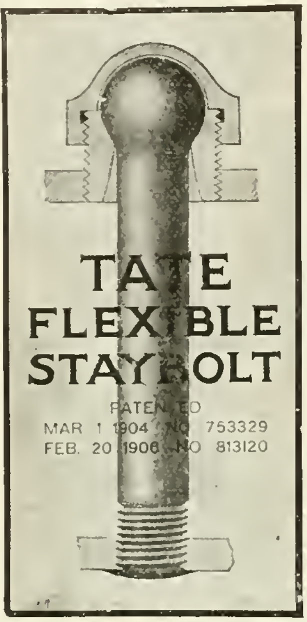

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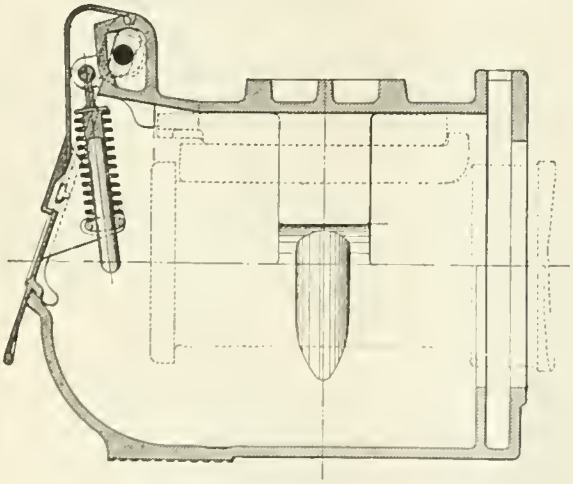

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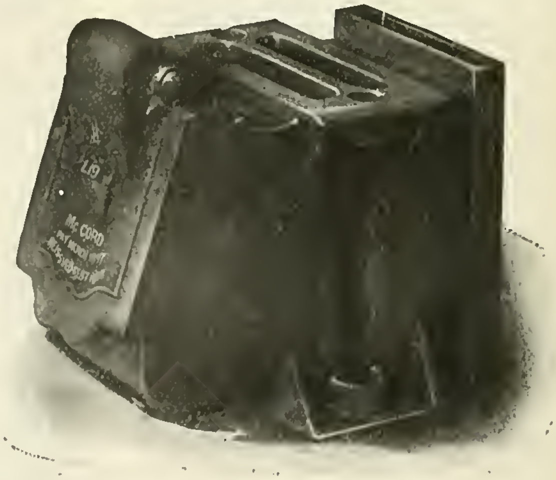

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354 St. James Street, Montreal

Coal Rates Duluth to Winnipeg.

Chief Railway Commissioner Mabee gave the following judgment Feb. 6 in the case of the Great Northern Ry. Co. (U.S.A.) vs. the Canadian Northern Ry. Co., the same being concurred in by Assistant Chief Commissioner Scott and Commissioner McLean:—

In Sept., 1907. the Great Northern Ry. filed with the Board an application asking for an order that the Canadian Northern Ry. should "agree and concur in a joint tariff of $2.50 a ton on coal from Duluth to Winnipeg," alleging, among other things, that the rate on coal from Port Arthur and Fort William to Winnipeg, over the Canadian Northern lines, was $2.50 a ton; that the joint tariff between the applicant and respondent from Duluth to Winnipeg was $3 a ton, of which the respondent received 75c. a ton, that the applicant desired to reduce its rate to $2.50 a ton, and was willing to allow the respondent 75c. a ton out of this reduced rate; that the Great Northern mileage was 365 from Duluth to Emerson, and the Canadian Northern 66 miles from that point to Winnipeg; that the people of the latter city had called upon the applicant for assistance in their coal supply, and that this could only be done by putting the Duluth-Winnipeg rate upon the same basis as the Fort William and Port Arthur-Winnipeg rate.

To this application the Canadian Northern made lengthy answer. and took objection to the Board's jurisdiction, which question was argued and determined adversely to the respondent's contention. Later on. evidence was given at Fort William and Winnipeg at length, and the case was again argued in all its phases in the last week of Jan., 1908. and judgment was reserved. The death of the late Chief Commissioner took place within six weeks of the close of the case, and the matter has never since been finally disposed of.

Sec. 336 provides that as respects all traffic carried from any point in the U.S. into Canada by any continuous route operated by more than one company, a joint tariff for such route shall be filed with the Board. This section applied to the movement of coal from Duluth to Winnipeg by the applicant and respondent, and in compliance therewith the applicant duly filed C.R.C. 142, effective Dec. 31, 1902, superseded by C.R.C. 612. effective Aug. 6, 1909, superseded by C.R.C. 631, effective Sept. 30, 1909, all naming the Canadian Northern Ry. as a participating carrier, and the rate from Duluth to Winnipeg as $3. C.R.C. 631 has since remained and is still in effect.

Sec. 338 provides that where these joint tariffs are filed, the company or companies shall "until such tariff is superseded, or disallowed by the Board, charge the toll or tolls specified therein."

In the case of the Grand Trunk Ry. vs. the British American Oil Company 43 S.C.R. 311, the Supreme Court held, affirming this Board, that under sec. 336 tariffs filed by foreign railway companies for rates on through traffic originating in foreign territory. to be carried by continuous routes owned or operated by two or more companies from foreign points to destinations in Canada, are effective and binding upon all Canadian companies participating in the transportation, although not expressly assented to by the latter, and may be enforced by the Board against such Canadian companies.

Under this decision there is and has been nothing to prevent the Great Northern Ry., if it so desired. from filing a tariff giving a rate of $2.50 upon coal from Duluth to Winnipeg. naming the Canadian Northern Ry. as the participating carrier. and this tariff would "supersede" the old $3 one, and the Canadian Northern would be bound to accept and carry traffic under it, unless it was "disallowed by the Board." No order granting leave to file any such tariff or requiring the Canadian Northern Ry. to agree to or concur therein, was or is necessary. and this application was entirely unnecessary.

The Canadian Northern has had on file, during all this time, a general concurrence with all tariffs that might be filed by the Great Northern. and in that respect its position would have been much weaker than that of the Grand Trunk in the oil case, as there it has endeavored to protect itself by filing an exception to the oil rate of the Indianapolis Southern.

In view, however, of the amount of evidence given. and the time and labor spent upon argument, to say nothing of the importance with which the respondent, as well as the Canadian Pacific Ry., regarded the application, it does not seem proper to leave the case in the above position, as, doubtless. if the applicants filed such a tariff, the respondents would at once move for its disallowance, and as all the possible material is now before the Board, it would seem reasonable to now determine whether, if a $2.50 rate were put in by the applicants between Duluth and Winnipeg, over the route of the applicant and respondents lines. it would be disallowed by the Board.

The Canadian Northern Ry has a line from Port Arthur to Winnipeg, the C.P.R. has a double track road between Fort William and Winnipeg. and the evidence showed that large sums had been expended at Port Arthur by the respondents for the establishment of a plant for handling coal. Large sums in wages are paid at both these points to workmen engaged in this work, and it was clearly demonstrated that if this trade was taken away from these cities it would seriously injure them. The facts, so far as they affected these two cities, were presented by counsel for the cities, they being allowed to intervene, and may or may not have any bearing upon the case.

Let us deal for a moment with the case as it affects the Canadian Northern only. Now it enjoys the revenue derived from this coal traffic at the rate of $2.50 a ton. hauling it from Port Arthur to Winnipeg, about the same distance as from Duluth to Winnipeg, and the Great Northern desires to get this traffic away from it, putting seven-tenths of the revenue earned from it into its own treasury, cutting down the earnings of the Canadian Northern from $2.50 to 75c. a ton, and compelling it to return its empty grain cars to Winnipeg minus this coal traffic. In whose interests would all this be? What reason exists for the transfer of this traffic and the revenue derived therefrom from one company to another? How would the Winnipeg coal consumer be benefited? Would he be getting coal by a shorter route or at a lower freight rate? This case is not to be considered as if the application came from the people of Winnipeg. supported by satisfactory evidence that the railways were defaulting in furnishing a sufficient coal supply via Fort William and Port Arthur. There was something said about a shortage at some time. but it was not suggested at the hearing that the Fort William and Port Arthur route was not a satisfactory and reasonable one. nor was it suggested that the railways operating from those points could not supply Winnipeg and adjacent points with all the coal necessary. and at the minimum of cost for its transportation.

The application then is a plain and selfish attempt by the applicants to use the Board to divert traffic from the respondent lines to its own lines, not to furnish any better or cheaper route for the carrying of coal to Winnipeg, nor to furnish any more prompt or steady service, but solely that the applicants might obtain the revenues earned by the respondent from this coal traffic. This Board has steadily refused to permit the Railway Act to be put to any such abuse.

An attempt of a somewhat similar nature was made in the Muskoka rates case, Canadian Northern Ry. vs. the Grand Trunk Ry. and Canadian Pacific Ry., 7 Canadian Railway Cases, 289. There the Board said: "Is it fair that the applicant should be permitted to make use of the Act to divert from the G.T.R. and C.P.R. lines at Toronto the tourist traffic that the last mentioned railways have spent years in developing? That this would be to the advantage of the applicant is clear, but it has not been shown that the public is to any appreciable extent interested?"

The same principle was involved in the case of the Elder Dempster S.S. Co. vs. the G.T.R. and C.P.R., 10 Canadian Railway Cases, 334. There the Board refused the application, and the following extract from the judgment is sufficient to show why it failed: "Upon the fact of the matter then, it is a struggle to obtain from the railways part of their westbound traffic, and it is by no means clear that the shippers would obtain any material benefit if the application succeeded."

In England, in the case of the Didcot, Newbury, and the Southampton Ry. vs. the London and South-Western Ry., 10 Railway & Canal Traffic Cases, 9, Sir Frederick Peel said:—"It seems to me, upon the evidence, that the means provided for that purpose by the Southwestern Co., by their route, leave no cause of complaint, and that no real advantage would accrue to the public through having the different route proposed by the applicants." These words are particularly applicable to the case in hand, as there was no evidence, nor did counsel argue, that the route proposed by the Great Northern would produce any advantage to the public.

In the U.S. the administration of the Act Respecting Commerce has been entirely upon the lines above indicated. In re Through Passenger Routes, 16 Interstate Commerce Reports, pg. 310, the then Chairman said:—"The statute provided that before the Commission may establish through routes and joint rates, but does not require it to do so. It follows then, that the Commission can lawfully exercise its discretion in this respect, it must find that no reasonable or satisfactory through route exists, and when its jurisdiction is thus established, its discretion must be exercised upon sound consideration of justice to the public and to the carriers."

In Baer Brothers vs. the Missouri Pacific. 17 I.C.R., at pg. 225, the present Chairman said:—"As we understand the law, it does not require us in all cases where no through route and joint rate exists to establish a route and fix a rate applicable thereto, but only empowers, for the purpose of giving effect to the Act."

In Spring Hill Coal Co. vs. Erie Rd., 18 I.C.R., 508, it was held that the Interstate Commerce Commission had no jurisdiction to establish a through route and joint rate where a reasonable through route already existed.

Now, applying these cases to the one under consideration, the Board finds as a fact that there is already a reasonable route and rate—not a joint rate with the water carriers of this coal, because the Board has no control over them—but a reasonable route to destination; so if this case were before the Interstate Commerce Commission, the applicants upon that state of facts, would be told that there was no jurisdiction to establish another route. It may be that the

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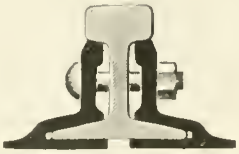

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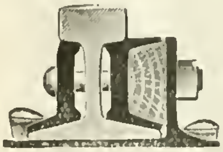

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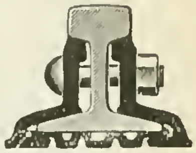

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Railway Act gives wider authority to this Board, and that we have jurisdiction to establish more than one route and joint rate between any two given points; but any such action could only be justified by it being clearly established that the interests of the public plainly called for such intervention.

The law requires the carriers to establish reasonable through routes aud rates applicable thereto, and when this has been done they have discharged their duty in that regard. The Canadian Northern says it has established a reasonable route for coal to Winnipeg; it has established that fact by evidence, and it is not bound to submit to another route established by the Great Northern Ry., this latter proposition being made solely for the pecuniary benefit of the Great Northern to the loss of revenue of the Canadian Northern, and no apparent corresponding benefit to the public.

If such a tariff were filed by the applicants, it would, upon the existing state of facts, be disallowed by the Board.

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Steam Railway Track Laid in 1910.

In our last issue we gave a preliminary statement of steam railway track laid in Canada in 1910. Since then some belated returns have been received, including a more detailed statement from the Grand Trunk Pacific Ry., and the table is repeated below revised up to date. The returns show that 1870.44 miles of track were laid against 1588.47 in 1909 and 1505.95 in 1908. The figures as finally corrected do not differ materially from the figures given in our last issue, although some of the figures given were estimates. others which were totalled are now given in more detail, and the Detroit River tunnel, the length of which in Canada is estimated at 1,20 miles, is added.

	Miles.	Miles.
ALGOMA CENTRAL AND HUDSON BAY RY.		
Main line, mileage 69 to 81.6	12.6	
Main line, mileage 170. to 151.5	19.0	
Magpie Branch, Michipicoten Division	5.4	
		37.00
ATLANTIC, QUEBEC AND WESTERN RY.		
Grand River to Ainse a Beaufils	14.5	
Near Ainse a Beaufils to Barachoils	8.5	
		23.00
CANADA AND GULF TERMINAL RY.		
St. Flavie to Matane, Que.		36.00
CANADIAN PACIFIC RY.		
Mansonville, Que., to International boundary	3.60	
Shawinigan Falls, Que., to Grand Mere	5.20	
Islington, Ont., to Micico	2.64	
Code Jct., Ont., to Ingersoll	4.68	
Victoria Harbor, Ont., terminal tracks	1.46	
Teulon, Man., extension	25.60	
Regina, Sask., northerly	20.60	
Bulyea, Sask., south	12.40	
Forward, Sask., westerly	21.80	
Colonsay, Sask., south	50.00	
Macklin, Sask., southeast	86.20	
Langdon, Alta., northerly	34.10	
Irricana, Alta., easterly	18.30	
		286.58
CANADIAN NORTHERN ONTARIO RY.		
Toronto-Ottawa Line—		
Mileage 0 to 44.6	44.60	
Mileage 69.4 to 71.7	2.30	
Mileage 71.8 to 96.6	24.80	
		71.70
CANADIAN NORTHERN RY.		
Oakpoint branch, Man.	96.84	
Greenway branch, Man.	12.90	
Hallboro branch, Man.	6.15	
Rossburn branch, Sask.	16.46	
Maryfield branch, Sask.	88.81	
Gooselake branch, Sask.	49.90	
Prince Albert-Battleford line, Sask.	16.13	
Jackfish Lake branch, Sask.	22.59	
Crooked Lake branch, Sask.	56.95	
Vegreville-Calgary branch, Alta.	155.23	
		521.96
CENTRAL ONTARIO RY.		
Station 1355 to 1620		5.00
DETROIT RIVER TUNNEL.		
Total length in Canada and U.S., 2.42 miles, of which there is in Canada (estimated)		1.20
ESQUIMALT AND NANAIMO RY.		
Parksville to Cameron Lake, B.C.		12.00
ESSEX TERMINAL RY.		
Walkerville to Windsor, Ont.		1.00
GRAND TRUNK PACIFIC RY.		
SASKATCHEWAN—		
Mileage 17 to Canora	36.00	
Young to mileage 25	25.00	
Balcarres to mileage 48	14.00	
ALBERTA—		
Camrose to Red Deer River	123.00	
Mileage 879 to Prairie Creek	35.00	
BRITISH COLUMBIA—		
Prince Rupert to Copper River	100.00	
		335.00
HA HA BAY RY.		
Chicoutimi to Bagotsville, Que.	20.00	
Chicoutimi Jct. to Mathias, Que.	5.00	
		25.00
HALIFAX AND SOUTH WESTERN RY.		
Middleton Jct. to Nictaux, N.S.		4.00
INTERNATIONAL RY. OF N.B.		
Mileage 80 to St. Leonards, N.B.		33.50
IRONDALE, BANCROFT AND OTTAWA RY.		
Mud Creek to York River Jct., Ont.		3.00
MANITOULIN AND NORTH SHORE RY.		
Gertrude to Crean Hill, Ont.		10.00
NATIONAL TRANSCONTINENTAL RY.		
Between Moncton, N.B., and N.B. boundary	130.00	
Between Quebec boundary and five miles west of Weymontachene, Que.	135.00	
East and west of Cochrane, Ont., and east of Graham, Ont.	172.00	
		437.00
NORTHERN NEW BRUNSWICK AND SEABOARD RY.		
Nepisquit Jct. to Bathurst Iron Mines		16.90
PACIFIC COAST COAL MINES.		
Fiddicks, B.C., to Coal mines		1.80
PORTLAND CANAL SHORT LINE.		
Stewart to Bear River		4.00
QUEBEC CENTRAL RY.		
St. Justine to St. Sabine, Que.		4.30
TEMISKAMING AND NORTHERN ONTARIO RY.		
Mileage post 60 to 60.5		0.50

Of this mileage, 1,651.34 miles were laid in connection with three systems, as follows, the second column showing the mileage laid by the same lines in 1909:—

	1910.	1909.
National Transcontinental Ry.	437.00	312.00
G.T. Pacific Ry.	335.00	309.00
	772.00	621.00
Canadian Northern Ontario Ry.	71.70	90.49
Canadian Northern Quebec Ry.	.....	28.10
Canadian Northern Ry.	521.96	303.05
	593.66	421.64
Canadian Pacific Ry.	286.58	323.84
Total of the three systems	1,651.24	1,376.48

Divided by provinces, the track laid during the year compares with that laid in 1909 as follows:—

	1910. Miles.	1909. Miles.
Saskatchewan	518.84	487.80
Alberta	365.63	373.17
Ontario	308.98	288.63
Quebec	232.10	171.24
New Brunswick	180.40	87.00
Manitoba	141.49	136.23
British Columbia	117.80	74.40
Nova Scotia	4.00	.....
	1,869.24	1,588.47

Particulars of revision of location and second track laid. were given in our last issue.

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International Traffic Regulations.

The Minister of Railways stated in the House of Commons Feb. 6 that the question of the control of rates on lines running from Canada into the United States, and from the United States into Canada, had been under consideration for more than a year. The settlement of the question by the appointment of an international tribunal was first brought to his attention by the Chief Railway Commissioner. The difficulties experienced by shippers on traffic between the two countries were, at times, quite apparent. For instance, the rate from New York to Toronto was a point. He presumed it was possible to get a through rate by the boards acting independently, but what often results was this, the railway companies on each side charged a local tariff, particularly if there was no competition, and as a result the purchaser of the goods in Toronto was obliged to pay two local rates instead of one through freight. The object of the agreement, if one could be arrived at, was to form some tribunal that could quickly make a through rate from any point in Canada to any point in the United States, or vice versa, so that as far as the control of the rates was concerned there would be a tribunal that would as completely control the traffic originating in either country and going to the other, as if the traffic were all in one country. Chief Commissioner Mabee and Chairman Knapp, of the Interstate Commerce Commission, have had several conferences, and they arrived at a basis which to them seemed satisfactory for the solution of the difficulty, and in a manner to protect both shippers and producers on either side of the line having business on the other. The report of each of these gentlemen was in the hands of their respective governments. If approved, a treaty would be made on the lines suggested in the report. The details of the report had not been given to the public, but an article in a U.S. publication contained an approximately correct statement of the report.

This suggests the appointment of a body of four, the Chief Commissioner and a member of the Board of Railway Commissioners for Canada, and the Chairman and a member of the Interstate Commerce Commission for the U.S., with powers corresponding to those dealing with interstate traffic in the U.S.

The matter was still under the consideration of the Canadian Government. As it would be dealt with in the form of a treaty, the usual custom and practice as to treaties would be followed in both countries.

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Transportation Conventions, etc. in 1911.

Mar. 14-15.—International Association of Ticket Agents, Norfolk, Va. Side trip to Havana. Cuba.

Mar. 21, 22, 23.—American Railway Engineering and Maintenance of Way Association, Chicago, Ill.

Mar. 30.—Eastern Association of Car Service Officers, Washington. D.C.

April 26.—Association of American Railway Accounting Officers. New Orleans, La.

May 15-18.—International Railway Fuel Association. Chattanooga, Tenn.

May 19.—American Railway Association, at New York City.

June 14-16.—American Railway Master Mechanics Association, Atlantic City, N.J.

June 19.—Association of Railway Telegraph Superintendents, Boston. Mass.

June 19-21.—Master Car Builders Association, Atlantic City, N.J.

June 20.—American Association of Freight Agents. Kansas City. Mo.

June 20.—Train Dispatchers Association of America. Baltimore, Md.

June 20-21.—Association of Transportation and Car Accounting Officers. Cape May, N.J.

June 21.—Freight Claims Association, St. Paul, Minn.

June 22.—American Association of Demurrage Officers, Niagara Falls, N.Y.

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Dominion Railway Subsidy Agreements—An agreement, under the Dominion act relating to granting aid to certain railways, was entered into Jan. 27 with the Kettle Valley Ry., in respect of the building of a line from Midway to a junction near Merritt, B.C., with the Nicola, Kamloops and Similkameen Ry., a distance not exceeding 250 miles.

Major H. Swinford, General Agent Northern Pacific Ry., Vancouver, B.C., and formerly acting in a similar capacity at Winnipeg, has been elected a Fellow of the Royal Geographical Society.

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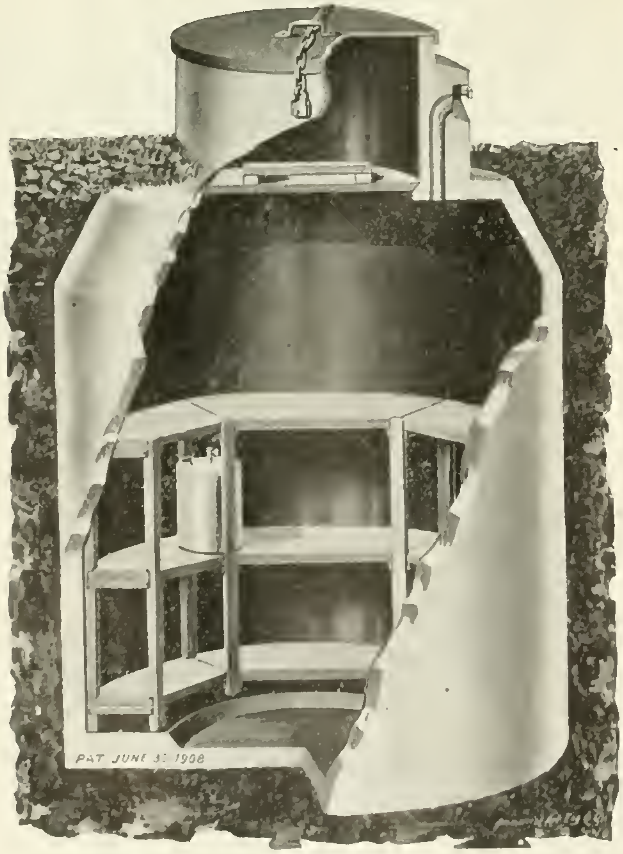

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Railway Rolling Stock Notes.

The Powell River Paper Co. has received one Columbia locomotive from the Montreal Locomotive Works.

McDonnell and O'Brien, railway contractors, Harvey Jct., Que,. have ordered two mogul locomotives, with cylinders 19 by 26 ins.; driving wheels 50 ins. diar. and with total weight of 130,000 lbs., from the Montreal Locomotive Works.

The Intercolonial Ry., has ordered nine vans to be built at its Moncton shops, and has received six vans and one Pintsch gas car from its shops, and four first class passenger cars from the Preston Car and Coach Co., Preston, Ont.

The Intercolonial Ry. rolling stock, according to a statement made by the Minister of Railways, in the House of Commons, Feb. 16, consists of 397 locomotives, 454 passenger cars, and 12,491 freight cars, the first cost of which was $19,049,837.93.

The C.P.R., from Jan. 1 to Feb. 13, received the following additions to rolling stock: four first class cars from its Angus shops, Montreal; one automobile car from the Canadian Car and Foundry Co., Montreal, and five G.2 and one G.1 locomotives from the Montreal Locomotive Works.

The Canadian Northern Ry., between Dec. 15 and Feb. 15, received the following additions to rolling stock: four snow plows, 125 box cars, from the Canadian Car and Foundry Co., Montreal; 150 box cars from the Crossen Car Manufacturing Co., Cobourg, Ont.; and three baggage and mail cars from the Preston Car and Coach Co., Preston, Ont.

The G.T.R., between Oct. 1 and Dec. 31, 1910, received the following additions to rolling stock: 398 steel underframe box cars from the Canadian Car and Foundry Co., Montreal; three parlor-buffet cars from its Montreal shops; one snow plow from its London, Ont., shops, and 1,000 box cars and 500 automobile cars, built in the U.S., for the G.T. Western Ry. and affiliated lines.

The C.P.R., from Jan. 1 to Feb. 13, ordered the following rolling stock: 170 box cars, 10 flat cars, 12 stock cars, four freight refrigerator cars, eight vans, three second class cars, three flangers, one fruit and express car, one baggage and smoking coach, one snow plow and 11 D.10 locomotives from its Angus shops, Montreal. and four Hart ballast cars and two coal cars from the Canadian Car and Foundry Co., Montreal.

The Canadian Northern Ry., between Dec. 15 and Feb. 15, ordered the following rolling stock: 10 switching locomotives from the Canadian Locomotive Co., Kingston, Ont.; 250 steel under-frame flat cars, from the Canadian Car and Foundry Co., Montreal; five second class and baggage cars from the Preston Car and Coach Co., Preston, Ont.; 200 Hart convertible cars from the Hart-Otis Car Co., Montreal; 100 refrigerator cars, 200 stock cars; 15 cabooses from the Crossen Car Manufacturing Co., Cobourg, Ont., and 15 cabooses in the U.S., for the Duluth, Rainy River and Winnipeg Ry.

Triple-expansion locomotives and condensing locomotives have been suggested at various times, and have obtained public notice recently. The condensing locomotive came to light in the daily press in a reporter's account of a train being stopped near Chicago by the engine drawing up fish from a track tank. It was stated that on removing "the piston of the condenser" the latter was found to be packed with fish. Of more serious interest is the triple-expansion locomotive, which has recently been patented by S. M. Vauclain, of the Baldwin Locomotive Works. His design provides for an elongated locomotive of the Mallet type, having three (instead of two) groups of drivers. These groups are driven by cylinders using high-pressure, intermediate and low-pressure steam, respectively.

Cavicchi and Pegano, railway contractors, have ordered one 10-wheeled locomotive from the Montreal Locomotive Works. Following are the chief details:

Weight in working order	109,000 lbs.
Weight on drivers	83,000 lbs.
Weight on engine truck	26,000 lbs.
Wheel base, driving	10 ft. 6 in.
Wheel base, engine	20 ft. 8 in.
Driving wheels, diar.	50 in.
Cylinders	18 in. by 24 in.
Boiler, type	Extended wagon top
Boiler pressure	160 lbs.
Tubes, no. and diar.	198 2 in.
Tubes, length	12 ft. 3 in.
Brake	Westinghouse American
Capacity, water	5,000 U.S. gals.

E. F. and G. Fauquier, railway contractors, Ottawa, have ordered two 10-wheeled locomotives from the Montreal Locomotive Works. Following are the chief details:—

Weight in working order	109,000 lbs.
Weight on drivers	83,000 lbs.
Weight on engine truck	26,000 lbs.
Wheel base, driving	10 ft. 6 in.
Wheel base, engine	20 ft. 8 in.
Driving wheels, diar.	50 in.
Cylinders	18 in. by 24 in.
Boiler, type	Extended wagon top
Boiler pressure	160 lbs.
Tubes, no. and diar.	198 2 in.
Tubes, length	12 ft. 3 in.
Brake	Westinghouse American
Capacity, water	5,000 U.S. gals.

O'Brien, Fowler and O'Gorman, railway contractors, Ottawa, have ordered two mogul locomotives from the Montreal Locomotive Works. Following are the chief details:—

Weight in working order	130,000 lbs.
Weight on drivers	113,000 lbs.
Weight on engine truck	17,000 lbs.
Wheel base, driving	12 ft. 6 in.
Wheel base, engine	20 ft. 6½ in.
Driving wheels, diar.	50 in.
Cylinders	19 in. by 26 in.
Boiler, type	Extended wagon top
Boiler pressure	180 lbs.
Tubes, no. and diar.	275 2 in.
Tubes, length	10 ft., 5¾ in.
Brake	Westinghouse American
Capacity, water	5,000 imp. gals.

O'Brien, Fowler and McDougall Bros., railway contractors, Ottawa, have ordered seven mogul locomotives from the Montreal Locomotive Works. Following are the chief details:—

Weight in working order	130,000 lbs.
Weight on drivers	113,000 lbs.
Weight on engine truck	17,000 lbs.
Wheel base, driving	12 ft. 6 in.
Wheel base, engine	20 ft. 6½ in.
Driving wheels, diar.	50 in.
Cylinders	19 by 26 in.
Boiler, type	Extended wagon top
Boiler pressure	180 lbs.
Tubes, no. and diar.	275 2 in.
Tubes, length	10 ft. 5¾ in.
Brake	Westinghouse American
Capacity, water	5,000 imp. gals.

The Brompton Paper and Pulp Co. has ordered one Columbia type locomotive (2-4-2), of which the following are the chief details. from the Montreal Locomotive Works:—

Weight in working order	79,000 lbs.
Weight on trailers	12,000 lbs.
Weight on drivers	59,000 lbs.
Weight on engine truck	8,000 lbs.
Weight of tender	79,000 lbs.
Wheel base, driving	7 ft. 0 in.
Wheel base, engine	22 ft. 6 in.
Driving wheels, diar.	44 in.
Cylinders	14 by 22 in.
Boiler, type	Straight top
Boiler pressure	165 lbs.
Tubes, no. and diar.	106 2 in.
Tubes, length	11 ft. 8 in.
Capacity, water	1,200 U.S. gals.

Following are the chief details of the 10 ten-wheeled locomotives which the Algoma Central and Hudson Bay Ry. recently ordered from the Montreal Locomotive Works, as mentioned in our last issue:—

Weight in working order	194,000 lbs.
Weight on drivers	168,000 lbs.
Weight on engine truck	26,000 lbs.
Weight of tender	130,000 lbs.
Wheel base, driving	15 ft. 10 in.
Wheel base, engine	24 ft. 4½ in.
Wheel base, engine and tender	56 ft. 6 in.
Driving wheels, diar.	56 in.
Valve gear	Walschaert
Superheater	Vaughan-Horsey
Cylinders	22½ by 28 in.
Boiler, type	Extended wagon top
Boiler pressure	180 lbs.
Tubes, no. and diar.	240 2 in., 24 5 in.
Tubes, length	14 ft. 2½ in.
Capacity, water	5,000 imp. gals.

Following are the chief details of the 12 compound consolidation locomotives which the G.T.R. is having built by the American Locomotive Co. at Dunkirk, N.Y., for use on its U.S. lines:—

Cylinders	22½ in. and 35 in. by 32 in.
Driving wheels	63 in.
Boiler pressure	210 lbs.
Tubes, no. and diar.	353 2 in.
Tubes, length	15 ft. 0 in.
Heating surface, tubes	2,757.1 sq. ft.
Heating surface, firebox	168.2 sq. ft.
Heating surface, total	2,925.3 sq. ft.
Grate area	50.62 sq. ft.
Boiler diar., front end	67 in.
Weight in working condition on truck	26,400 lbs.
Weight on first pair of drivers	48,350 lbs.
Weight on second pair of drivers	44,430 lbs.
Weight on third pair of drivers	48,720 lbs.
Weight on fourth pair of drivers	43,300 lbs.
Weight of engine total	211,200 lbs.
Weight on drivers, total	184,800 lbs.
Weight on front truck of tender	65,600 lba.
Weight on back truck of tender	77,700 lbs.
Total weight of tender loaded	143,300 lbs.
Total weight of locomotive	354,500 lbs.
Wheel base, driving	17 ft. 0 in.
Wheel base, engine, total	25 ft. 9 in.
Wheel base, engine and tender	57 ft. 3½ in.
Total length over all	67 ft. 6½ in.

Following are the chief details of the six Pacific type locomotives which the G.T.R. is building at its Montreal shops, an illustration of which, with description, was given in our Oct., 1910, issue:—

Weight on driving wheels	131,050 lbs.
Weight on truck, front	37,100 lbs.
Weight on truck, back	38,500 lbs.
Weight, total, engine	206,650 lbs.
Weight, total, engine and tender	345,000 lbs.
Wheel base, driving	13 ft. 4 in.
Wheel base, total, engine	33 ft. 2 in.
Wheel base, total, engine and tender	62 ft. 3½ in.
Boiler, type	Wagon top
Boiler, diar.	66 in.
Boiler pressure	200 lbs.
Boiler, staying	Radial
Cylinders, diar. and stroke	22 in. by 28 in.
Valve	Balanced slide
Firebox	96⅞ in. by 75¼ in.
Tubes, no. and diar.	305 2 in.
Tubes, length	20 ft. 7 in.
Heating surface, firebox	170 sq. ft.
Heating surface, tubes	3,274 sq. ft.
Heating surface, firebrick tubes	28 sq. ft.
Heating surface, total	3,472 sq. ft.
Grate area	50.6 sq. ft.
Driving wheels, diar.	73 in.
Journals	9½ in. by 12 in.
Truck wheels, diar., front	31 in.
Journals	6½ by 10½
Truck wheels, diar., back	49 in.
Journals	8 in. by 14 in.
Tender wheels, diar.	34 in.
Journals	5½ in.. by 10 in.
Capacity, water	7,000 gals.
Capacity, coal	10 tons

Following are chief dimensions, etc., of the rolling stock, which the Intercolonial Ry. is building at its Moncton, N.B., shops, as mentioned in our last issue:—

Steel Frame Box Cars (50).

Length over buffer blocks	38 ft. 1¼ in.
Width over sill	9 ft. 3½ in.
Length, inside	36 ft. 0 in.
Width inside	8 ft. 6½ in.
Steel under frame	Canadian Car & Foundry Co.
Capacity	60,000 lbs.

Wood Box Cars (50).

Length over end sills	36 ft. 9⅝ in.
Width over side sills	9 ft. 0⅝ in.
Length inside	36 ft. 0 in.
Width inside	8 ft. 6 in.
Height inside, floor to carline	8 ft. 0 in.
Door opening	6 ft. 0 in.
Truck centres	26 ft. 9⅝ in.
Springs	M.C.B. type G
Journal boxes	McCord
Bolsters and brake beams	Simplex
Air brakes	Westinghouse
Capacity	60,000 lbs.

Colonist Cars (3).

Seating capacity	72
Length over buffers	71 ft. 7¼ in.
Length over end sills	63 ft. 7 in.
Width over side sills	9 ft. 10 in.
Height top of sill to under side of plate	6 ft. 7¼ in.
Length inside sheathing at floor line	62 ft. 8½ in,

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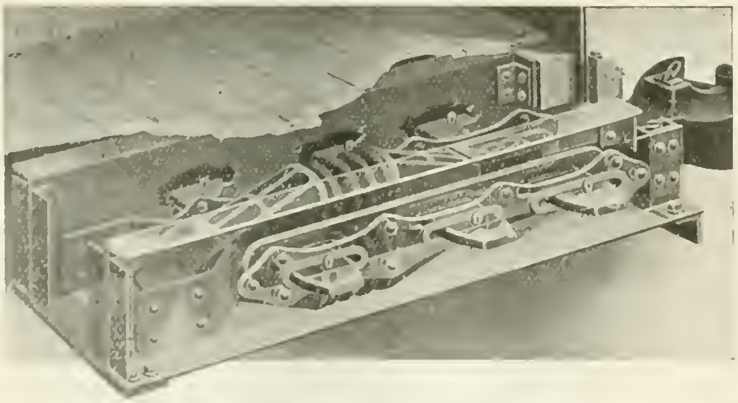

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Toronto, Canada, March, 1911.

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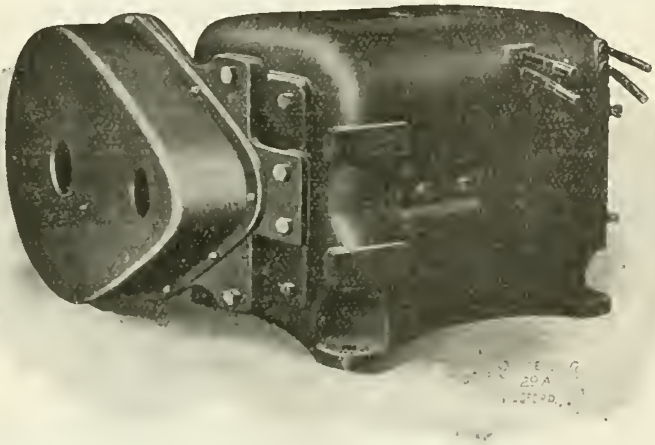

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The Canadian Steel Foundries, Ltd., which was recently incorporated under the Dominion Companies Act, has been formed to acquire the Montreal Steel Works, Ltd., at Montreal, and the Ontario Iron and Steel Co., Ltd., at Welland, Ont. It will have a capitalization of $10,000,000, as follows: Bonds authorized, $5,000,000. of which $3,650,000 will be issued at present; preferred stock, $2,000,000, of which $1,400,000 will be issued at present, and common stock $3,000,000, all of which will be issued. The Canadian Car and Foundry Co. will guarantee the Canadian Steel Foundries bonds. and will hold control of the latter's stock.

The Canadian Steel Foundries board has been elected as follows:—President, N. Curry; Vice President, W. W. Butler; Vice President and Managing Director, W. F. Angus; Vice President, K. W. Blackwell; Assistant Secretary-Treasurer, F. A. Skelton; other directors, A. H. Chave, W. W. Near and J. R. Wilson, Secretary and Treasurer, C H. Godfrey. Messrs. Curry, Butler, Skelton and Chave especially represent the Canadian Car and Foundry Co.'s interests on the board. Messrs. Blackwell. Angus and Godfrey were President, Vice President and Managing Director and Vice President and Treasurer respectively of the Montreal Steel Works, of which J. R. Wilson was also a director. W. W. Near was President and Managing Director of the Ontario Iron and Steel Co.

It is expected that the Montreal Steel Works and the Ontario Iron and Steel properties will be taken over before the end of March. The building of the large steel plant at Longue Point, near Montreal, at a cost of about $1,000,000 and with a capacity of 20,000 tons a year, for which a bond issue was made by the Montreal Steel Works in July, 1910, will be gone on with, and it is probable that some additions will be made to the Welland plant to improve it and increase its capacity. The changes and additions to the cast steel plants, when completed, will give an annual capacity of 42,000 tons steel castings, 35,000 tons rolling mill products, and 4,000 tons of railway springs and other specialties which the new company will manufacture.

The close alliance between the Canadian Car and Foundry Co. and the Canadian Steel Foundries will undoubtedly be of great advantage to both companies.

◆

The Dominion Government has paid in cash subsidies to railways since Confederation, $607,776,853.50.

The board of conciliation. consisting of Judge McGibbon, Brampton, Ont., chairman, F. H. McGuigan, Toronto, representing the company, and T J. W. Lee, Toronto, on behalf of the men, appointed to enquire into the differences between the C.P.R. and its employes in the west, has completed its investigation, and it is reported that decision, acceptable to both parties, has been reached.

C.P.R. Toronto Improvements.

The C.P.R. is engaged in working out an extensive plan of betterments and additions to its lines and yards in Toronto and vicinity, which will result in providing for the rapidly increasing business being done in that city. In the first place, it is said that an appropriation has been made for making a start this year on the building of a line from Bathurst, near Smiths Falls, to near Leaside Jct., and for a second track from that point into Toronto. This would give the company a double track line between Toronto and Montreal, except for the mileage between Leaside Jct. and Bathurst, between which points there would be two single track lines—the existing one via Peterboro, and the new one, which would take in Lake Shore points to Belleville, and then go north to Bathurst. On the west of the city a second track has been completed just beyond Islington, and a spur line has been completed from there to Mimico, over which traffic is taken direct into the West Toronto yards, instead of being carried around Parkdale, as formerly.

With regard to the work in Toronto, D. McNicoll, Vice President, was there Feb. 15 for the purpose of considering the various matters with the Mayor and the city council, and conferring with the board of trade. The works in contemplation in the different localities in the city are as follows:—

The construction of local freight yard and freight shed facilities in the neighborhood of Cherry St., near which the Canadian Northern Ry. is also going to lay out freight yards. In connection with this work the company is desirous of having authority from the city to close up certain streets and to lay tracks upon other streets. At North Toronto, where a new freight shed has already been built, it is proposed to build a new passenger station and to very materially increase the local freight facilities. A project for the separation of grades at Yonge St. and Avenue Road is to be carried out, the actual work on which is being held temporarily in abeyance at the request of the Board of Railway Commissioners.

A 15 or 16 story office building is to be erected at the corner of King and Yonge St., on the site of the present ticket office and two adjoining buildings on King St.

The proposal to lay out the Simcoe Street yard is the most extensive of these proposals, as it involves the construction of nine tracks across John St., and one track from Front St. and Spadina Ave., across a corner of Clarence Square, and the intersection of Peter and Wellington Streets, and the erection of a large warehouse fronting on King St., for freight and express purposes. The plans for yard extension have not been finally completed. but the general intention is to almost double the capacity of the present yard by extending it to Lambton. In connection with this extension it will be necessary to build the following subways: Runnymeade Road (formerly Elizabeth St.), 56 ft. wide; Jane St., 32 ft. wide, and Scarlett Road, 30 ft. wide.

It is proposed in the spring to open up a local freight delivery yard at Bloor St., near its junction with Dundas St. On the water front in Toronto city proper it is proposed to build a freight storage building on the Hamilton wharf at the foot of George St.. and it is hoped to make an arrangement with the city, and to obtain authority from the Board of Railway Commissioners to utilize the balance of certain properties between John, Lake, York streets, and the new Windmill Lane, for yard extension, which it is proposed to name the Simcoe St. yard.

The amount to be spent in buildings, extensions, improvements, etc., in Toronto by the company is estimated at $6,000,000.

In explaining the company's plans to the Toronto Board of Trade, Mr. McNicoll exhibited a plan on which the various improvements were indicated. The central feature of the plan was a new Union Station. This work, with which the G.T.R. was associated, and the new yards on the site of the Government House, of which possession would not be obtained until 1912, could not be carried out immediately, but all the others could be completed in about a year. The plans for the union station, had been approved by the C.P.R. in 1907. Nothin ghad been done in the way of building that station. He was not saying why, but it was a fact that to the best of his belief there would not be a difference of 2 ft. in the levels whether a viaduct be built or not. The C.P.R. did not watn a viaduct, because they believed that bridges would serve the needs equally as well, but if the Privy Council ordered the viaduct, the company would join in building it. It had been said that the bulk of the traffic from Toronto would be handled at the north end of the city, but he considered that the big travel would always go from the union station. The north end station would be convenient for those who live in the residential district lying north of College St. When the union station plans were originally prepared the cost of construction was estimated at $2,125,000, but it would probably be $3,000,000. Mr. McNicoll then went on to deal with the different works proposed to be done in the other parts of the city, referred to above.

We are advised that the freight car repair shop proposed to be erected at West Toronto will have a frontage on Keele St. of 105 ft., with a depth of 133 ft. The building will be of steel and brick, and is estimated to cost $20,000. The old trestle bridge carrying the Weston Road over the tracks has been partially removed, and a good deal of building work is being gone on with in the cleared area.

◆

Manitoulin and North Shore Ry. Contract.

The contract for the construction of the section from Crean Hill to Whitefish, about 46 miles. including the loop, tenders for which were recently invited through the Railway and Marine World's advertising columns, has been awarded to the Superior Construction Co., of which T. J. Kennedy, heretofore General Superintendent of the Algoma Central and Hudson Bay Railway is President, and J. D. McArthur, Winnipeg, Vice President. Considerable progress has been made in the preliminary work necessary for the organization under the contract and to get outfits on the ground, and the work will be pushed through as rapidly as possible. The Superior Construction Company has its head office at Sault Ste. Marie, Ont., but the operating head office, at which Mr. Kennedy is located, is at Espanola, Ont., where the M. & N.S.R. connects with the C.P.R.

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The Minneapolis, St. Paul and Sault Ste. Marie Ry. is reported to have ordered 35 cabooses, and to be in the market for additional passenger equipment.

The Canadian Northern Ry. hotel at Port Arthur, Ont., which is to be known as the Prince Arthur Hotel will. it is announced, be opened early in March.

The powers given to the Quebec Public Utilities Commission, are to be extended, to include, among others, power to issue orders to ensure safety to the public as regards equipment and other appliances which may be in use, to include the use of fenders on street cars. brakes and other similar appliances.

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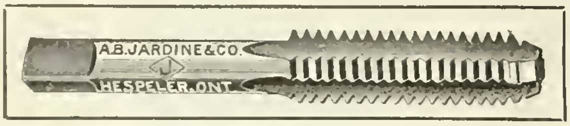
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MAINLY ABOUT PEOPLE.

Sir Wm. Mackenzie sailed from Bristol on the s.s. Royal George on Feb. 22, for Halifax, N.S.

J. Conmee. M.P., railway contractor, Port Arthur. Ont., is suffering from typhoid fever at Ottawa.

Sir Felix Schuster, a prominent British banker, has been elected a director of the Grand Trunk Ry.

Col. the Hon. J. S. Hendrie has been elected Chairman of the Railway Committee of the Ontario Legislature.

Lord and Lady Mount Stephen were the guests of the King and Queen, for a week end, at Windsor Castle, recently.

Mrs. Thos. Ahearn, wife of the President of the Ottawa Electric Ry., left Ottawa early in February for a visit to California.

Jas. McNab, who died at Westmount, Que., recently, was a brother of W. McNab, Principal Assistant Engineer G.T.R., Montreal

F. H. Phippen. General Counsel Canadian Northern Railway, has been elected a director of the Kaministikwia Power Co., Ltd.

Hugh A. Allan. of the Allan Line, who is now living in England, has sold his house and property at Pointe Claire, Montreal, for. it is said. $90,000.

The marriage of Miss Louise Hays, daughter of C. M. Hays, President G.T.R. and G.T.P.R., to H. Grier, is announced to take place, Mar. 4.

J. S. Dennis. Manager Irrigation Department, Alberta and British Columbia Land Departments C.P.R., returned to Canada, Feb. 7. from Great Britain.

Earl Carpenter. who died at Chambord Jct , Que., recently, was a brother of M. Carpenter, Roadmaster Quebec and Lake St. John Ry., Roberval, Que.

J. A. Randall, who is spoken of in press reports as promoter of the Sandwich, Windsor and Amherstburg Ry., died at Detroit, Mich., recently.

W. J. Johnston, who has been in the company's service for three or four years, has been appointed Superintendent Canadian Car and Foundry Co.'s Turcot plant, succeeding S. King, retired.

The engagement is announced of Miss Edna Phippen, daughter of F. H. Phippen, General Counsel Canadian Northern Ry., Toronto, to Dr. Clifford Gilmour, of Winnipeg.

Miss A. S. Leitch. second daughter of J. Leitch. K.C., chairman of the Ontario Railway and Municipal Board, is to be married in April to Dr. A. R. Tilley, of Ottawa.

A. R. Creelman, K.C., General Counsel and director C.P.R., Montreal, has announced the engagement of his daughter, Miss Isobel Creelman, to H. S. Ambrose.

N. Curry. President Canadian Car & Foundry Co., and Mrs. Curry sailed from New York Feb. 22, on the s.s. Cedric, for the Mediterranean, intending to be away about three months.

R. McEwen, General Baggage Agent Richelieu and Ontario Navigation Co., Montreal, died there. Feb. 6. from heart failure, aged 69. He had been in the company's service for 50 years.

The engagement is announced of Miss Alice Shaughnessy. eldest daughter of Sir Thos. G. Shaughnessy. to W. H. Beauclerk. Manager Montreal and St. Lambert Development Co., Montreal.

Hon. G. P. Graham. Minister of Railways and Canals. has been re-elected President of the Travellers' Life Insurance Co., of Canada, with J. W. Pyke. of Montreal as Vice President.

Mrs. A. C. Price. eldest daughter of the late Wm. O'Brien, at one time in G.T.R. service, and widow of the late W. E. Price, of the G.T.R. Audit Department, Montreal, died at Brooklyn, N.Y., Feb. 3.

Hon. J. Wood, President New Brunswick and Prince Edward Island Ry., Sackville, N.B., was stricken with paralysis at Ottawa, Feb. 15, At the time of writing his condition was considered to be serious.

C. Norman Ham, of the C.P.R. Freight Department, Montreal, son of G. H. Ham, of the C.P.R. headquarters staff, Montreal, was married at St. Thomas, Ont., Feb. 8, to Miss E. B. Benson.

A. J. McGee. Secretary Temiskaming and Northern Ontario Ry. Commission, returned to his duties Feb. 20. after an absence of a few days, owing to a sprained shoulder sustained by a fall on the slippery pavement.

James Kerr, M.D., who died at his country home at Warrenton. Va., Feb. 2, aged 62, practiced for a number of years in Winnipeg in the eighties. and was chief surgeon for the C.P.R lines with headquarters there.

G. R. Fairhead. Commercial Agent C.N.R., Hamilton, Ont., who was married early in Feb. to Miss E E. Jackson, was presented with a suite of dining room furniture, by a number of transportation officials at Toronto.

Sir William C. VanHorne is defendant in an action brought by the Attorney General to secure cancellation of a patent issued in 1899, in respect of 14 acres of land near East Selkirk, Man., on the ground that it was issued in error.

C. F. Rydberg, formerly General Foreman C.P.R. Angus shops. Montreal, and latterly with the Standard Car Works, Hammond, Ind., has been appointed Mechanical Superintendent of the Nova Scotia Car Works, Ltd., Halifax, successors to the Silliker Car Co.

W. Phillips, General Eastern Agent Canadian Northern Ry., and General Freight and Passenger Agent C.N.O.R., with Mrs. Phillips, left Toronto, Feb. 6, via New York. for a sea voyage to New Orleans, expecting to return early in March.

Sir William Mackenzie, was a guest of T. P. O'Connor, M.P., at the House of Commons, London, Eng., Feb. 9, when he was referred to as "an authentic specimen of the founders of a great new country, who knew no fear nor discouragement."

Miss Mabel Hay, daughter of the late Thos. Hay, C.P.R. Claims Agent, North Bay, Ont., who died as a result of the Spanish River accident, was married in Toronto, Feb. 18, to J. Kearns, Manager Bank of Commerce, College St. branch, Toronto.

F. P. Gutelius was recently entertained to dinner at North Bay, Ont., by the local officers of the C.P.R., and was presented with a silver service, a gold headed cane, a cheque, and an address, on his leaving North Bay for Montreal, where he has been appointed General Superintendent Eastern division C.P..R.

R. S. Richardson, formerly Assistant Superintendent Canadian Northern Ry., at Joliette, Que., has been appointed by McDonald & O'Brien as Superintendent of operation of the portion of the National Transcontinental Ry., of which they are contractors. His headquarters are at La Tuque, Que.

Benjamin Rogers, Vice President Charlottetown Steam Navigation Co., Charlottetown, P.E.I., died there, recently, aged 67 He was a native of Wales, but lived in Prince Edward Island since early boyhood, and was an outstanding figure in the public life of the Province for many years. He represented Charlottetown in the Legislature for two terms.

T. S. Bell, who died in Hamilton, Ont., Feb. 2, made surveys for the old Great Western Ry., and was assistant engineer of construction. He located the route of the Wellington, Grey and Bruce Ry. to Southampton, Ont., and was engaged in survey and construction work on other Ontario lines which now form part of the G.T.R system.

J. L. Englehart, Chairman Temiskaming and Northern Ontario Ry. Commission, visited Petrolea, Ont., recently, to make the formal presentation to the town, of his former residence, which has been re-modelled and fitted as the Charlotte Eleanor Englehart Memorial Hospital, in memory of his late wife. The grounds occupy about 30 acres, and the building is valued at $50,000.

Mrs. G. R. Joughins, wife of G. R. Joughins, Superintendent of Motive Power Intercolonial Ry., Moncton, N.B., died Jan. 26 at Dansville, N.Y., where she had been at a sanitarium for about a year, undergoing treatment. She leaves a son, who is taking a post graduate medical course in Paris, and one daughter, who is at home.

J. R. Gilhula, whose resignation of the position of Trainmaster Canadian Division Pere Marquette Rd., St. Thomas, Ont., was announced in our last issue, was entertained to dinner there recently by the local Knights of Pythias, and was presented with a cut glass punch bowl by a number of the local railway officials and employes, on his leaving to take up his new position as Superintendent Illinois Traction Co.

F. A. Nancekivell, who has been appointed General Agent Minneapolis, St. Paul and Sault Ste. Marie Ry., Toronto, was born at Woodstock, Ont., Mar. 1882, and entered railway service in 1902, in the G.T.R. Freight Department, Woodstock, Ont., and remained there until his appointment as Travelling Agent Great Northern Ry., Toronto, which position he held to the date of his present appointment.

Samuel King, who retired from the superintendency of the Canadian Car and Foundry Co.'s Turcot plant recently, was presented by the men with a handsome diamond ring, Mrs King being given a solid oak and plate glass china cabinet. Mr. King has decided to take a year's holiday, after 35 years constant work, and will leave Montreal early in May with Mrs. King, to visit relatives and friends in England.

G. Cobb, whose appointment as Chief Dispatcher Reid Newfoundland Co., St. John's, Nfld., was announced in our last issue, was born at Coupar Angus, Scotland, Apr. 21, 1885, and entered Reid Newfoundland Co.'s service Nov. 14, 1901, since when he has been, to Sept 27, 1903, telegraph operator: Sept. 27, 1903 to May 31, 1905, agent at Gambo; May 31, 1905 to May 20, 1908, night dispatcher at St. John's; May 20, 1908, to Nov. 11, 1910, emergency dispatcher and agent at Bishops Falls.

C. L. Williams, whose appointment as General Agent Passenger Department C.P.R., Pittsburgh, Pa., was announced in our last issue, was born in Suffolk, Eng., and came to Canada in 1881, returned to England in 1884, and again came to Canada in 1886, when he was appointed City Passenger Agent C.P.R., Chicago, Ill., which position he held to the date of his present appointment. Before leaving Chicago he was presented with a fitted travelling bag, by a number of local railway officials.

E. A. Evans, M. Can. Soc. C.E., who resigned his position as Chief Engineer, Quebec Railway, Light, Heat & Power Co. recently has opened an office at 92 St. Peter St., Quebec, as a consulting engineer, taking in with him as an associate, S. S. Oliver, A.M. Can. Soc. C.E. and P.L.S., who was for many years in

A HISTORY OF THE PAY-AS-YOU-ENTER CAR

AND ITS LESSON

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THE LESSON

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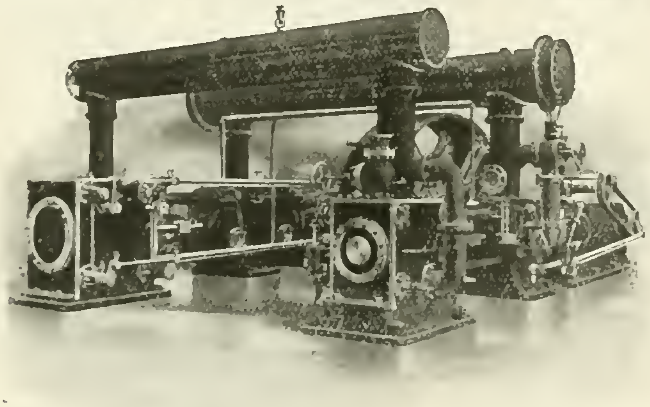

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the Quebec and Lake St. John Ry. service. Mr. Evans has been retained as consulting engineer for the Quebec and Saguenay Ry., tenders for the construction of which have been invited.

G. H. Shaw, whose appointment as General Traffic Manager Canadian Northern Ry., Toronto, was announced in our last issue, was born at Smiths Falls, Ont., Nov. 25, 1859, and entered C.P.R. service, Aug. 1882. From Nov. 1885 to July, 1886, he was chief freight clerk Western and Pacific Divisions C.P.R., Winnipeg; July 1886 to 1898, chief freight and passenger clerk same divisions; 1898 to June, 1901, Assistant General Freight Agent Western Division C.P.R. Port Arthur to Canmore and Fernie, B.C.; June 1901 to Jan. 16, 1911, Traffic Manager Canadian Northern Ry., Winnipeg.

M. K. McQuarrie, whose appointment as Resident Engineer District 1 British Columbia Division C.P.R., Revelstoke, was announced in our last issue, was born at Sault Ste. Marie, Ont., Aug. 17, 1884, and entered C.P.R. service in 1905 as transitman in the Resident Engineer's office, Vancouver, B.C. He graduated from the School of Practical Science, Toronto University, in 1907, since when he has been, to 1909, transitman on Nicola-Penticton survey and in charge of revised location of portion of Nanaimo to Alberni extension, Esquimalt and Nanaimo Ry., and 1909 to the end of 1910, assistant engineer in Division Engineer's office, Vancouver, B.C.

W. A. Dube, Superintendent District 1, Intercolonial Ry., Levis, Que., whose portrait appears on the first page of this issue, was born at St. John's, Que., Apr. 21, 1864, and entered railway service in 1880, since when he has been, to 1884, in various minor positions in G.T.R. service; 1884 to 1887, dispatcher G.T.R., Montreal; 1887 to May 1, 1899, Chief Dispatcher G.T.R., Montreal; on May 1, 1899, he was appointed Superintendent Intercolonial Ry., which position he still holds. He is also a member of the Canadian Government Railways Provident Fund, having been appointed by the Minister of Railways, on the inauguration of the fund in Apr., 1907.

I. McMichael, Vice President and General Manager Great North Western Telegraph Co., died at Baltimore Md., Feb. 22, following an operation, early in the month. He was born at Brantford, Ont., in Jan. 1840, and entered Buffalo and Lake Huron Telegraph Co.'s service in 1856. In 1860, he entered the U.S. Military Telegraph Service, and served in Central Missouri, St. Louis, Little Rock and Fort Smith. From 1865 to 1903, he was with the Western Union Telegraph Co., and was Superintendent of the eighth central district, when he was appointed General Manager G.N.W. Telegraph Co., Toronto, of which company he was also appointed Vice President in 1904. His son, S. B. McMichael, is Assistant General Manager G.N.W. Telegraph Co., Toronto.

R. Creelman, who has been appointed General Passenger Agent Canadian Northern Ry., Winnipeg, entered railway service Sept., 1891, since when he has been to 1893, messenger City Freight Agent's office, G.T.R., Toronto; 1893 to 1897, ticket clerk G.T.R. city office, Toronto; 1897 to 1900, chief clerk District Passenger Agent's office, G.T.R., Toronto; Jan. 1, 1900, to Aug., 1901, in General Passenger Agent's office, C.P.R., Winnipeg; Aug., 1901, to Sept. 1, 1903, in Passenger Traffic Department, C.N.R., Winnipeg; Sept. 1, 1903, to July 1, 1906, City Ticket Agent, Northern Pacific Ry., Winnipeg; July 1, 1906, to July 1, 1909, Travelling Passenger Agent C.N.R., St. Paul, Minn.; July 1, to Oct., 1909, Commercial Agent, C.N.R., St. Paul, Minn.; Oct., 1909, to Mar. 1, 1911, Assistant General Passenger Agent, C.N.R., Winnipeg.

R. McLennan, who died in Toronto Feb. 2, aged 88, was one of the oldest and best known railway construction engineers in Canada and the Southern States. His U.S. experience ended in 1864, and on his return to Canada he was engaged on lines now forming part of the Intercolonial Ry., and subsequently on survey work in British Columbia. In 1872 he was appointed engineer of Government railways between Port Arthur and Winnipeg, and afterwards was engineer of construction on the C.P.R. for the Lake Superior Division. He was later engaged in general consulting work, and retired from active work in 1886. His five sons, four of whom are now living, all followed the engineering profession.

H. M. Gain, whose appointment as Passenger Trainmaster Eastern Division G.T.R., Montreal, was announced in our last issue, was born at Lindsay, Ont., Mar 21, 1879. He entered Canadian Express Co.'s service, Apr. 13, 1894, and was, to Oct. 1898, relieving agent, and messenger, Port Harvey to Portland, Me.; Oct. 1898 to Apr. 1899, in general and executive offices same company, Montreal; Apr., 1899, to June, 1904, messenger, Portland, Me., to Richmond, Que., same company; June to July, 1904, acting route agent same company, Montreal; July to Sept. 1904 assistant route agent, Quebec; Sept., 1904, to Feb., 1905, route agent same company, Montreal; Mar. 1905 to Mar. 1910, route agent same company, Richmond, Que.; Apr. to July 30, 1910, route agent same company, Montreal; July 31 1910, to Jan. 23, 1911, in G.T.R. passenger train service at Montreal.

S. A Simpson, whose appointment as Superintendent Sleeping, Dining and Parlor Cars and News Service, Saskatchewan Division, C.P.R., at Moose Jaw, was announced in our last issue, was born at Toronto, Aug. 22, 1880. He entered railway service Oct. 24, 1898, since when he has been, to Sept. 26, 1901, in Motive Power and Traffic Departments G. T. R., Montreal; Sept. 26 to Dec. 1901, secretary to Second Vice President and General Manager, G.T.R., Montreal; Dec., 1901, to Dec. 1, 1904, secretary to Third Vice President G.T.R., Montreal; Dec 1, 1904 to June 1, 1905, secretary to President Canada Car Co., Montreal; June 1, 1905, to Mar. 31, 1908, storekeeper Canada Car Co., Montreal; July 15, 1908 to May 1, 1909, in office of General Superintendent Sleeping, Dining and Parlor Cars and News Service, C.P.R., Montreal; May 1, to Sept. 1, 1909, chief clerk same department, at Winnipeg; Sept. 1, 1909 to Jan. 1, 1911, Assistant Superintendent same department, Winnipeg.

J. A. Clarke, Relieving Purchasing Agent C.P.R., Montreal, died Feb. 5 from paralysis, due to hemorrhage of the brain, caused by a fall on a slippery pavement at Ottawa, while attending the funeral of the late J. E. Schwitzer, Jan. 27. Though the result was anticipated, a strong desire was expressed that he be brought to Montreal, and D. McNicoll, Vice President C.P.R., sent his private car to Ottawa for the purpose, but on the arrival at Montreal it was found inadvisable to remove him from the car, and he died there soon after. He was born in New York State in 1848. He entered the C.P.R. Purchasing Department as an accountant, and was promoted from the position of Chief Accountant about two years ago, to that of Relieving Purchasing Agent. The first part of the funeral service was held at Montreal, Feb. 7, when the various C.P.R. departments were represented, E. N. Bender, General Purchasing Agent, issuing orders that the department's offices at Montreal, Winnipeg and Vancouver be closed as a mark of respect. The interment took place at Peeksville, N.Y., when A. S. Maynard, Chief Commissary Agent C.P.R., Montreal, represented the Purchasing Department.

T. J. Kennedy has resigned the position of General Superintendent Algoma Central and Hudson Bay Ry., Sault Ste. Marie, Ont., to become President of the Superior Construction Co., Sault Ste. Marie, Ont., which has been awarded the contract for the construction of a section of the Manitoulin and North Shore Ry. The operating head office of the company where he is located, is at Espanola, Ont. He entered railway service at chainman of the first survey for the C.P.R. east of Winnipeg in 1874, since when he has been consecutively June, 1877, assistant engineer contract 15, C.P.R.; May, 1880, engineer for Manning, Macdonald & Co., contractors section B, C.P.R., at Rat Portage; Oct., 1882, to spring of 1885, superintendent of construction for Manning, Macdonald & Co., on section B.; June, 1885, roadmaster C.P.R. White River section; Aug., 1892, Superintendent Chapleau district C.P.R.; Sept., 1899, Superintendent North Bay district, C.P.R.; June, 1900, to date, General Superintendent Algoma Central and Hudson Bay Ry., and Manitoulin and North Shore Ry. From 1904, to Sept., 1910, he was also Manager International Transit Co., Trans-St. Mary's Traction Co., and the ferry line at Sault Ste. Marie Ont., and Mich.

Robert Kerr, who recently retired from the position of Passenger Traffic Manager C.P.R., was presented, at Montreal, Feb. 21, by Sir Thos. G. Shaughnessy, President, on behalf of the company's officials with a heavy silver tea and coffee service and tray, accompanied by a framed illuminated parchment, bearing the names of the chief officials of the company. In making the presentation, Sir Thomas said: "On behalf of your brother officials and mine, and as a sign of their esteem and the executive's keen appreciation of your services, it gives me much pleasure to present to you this token of our regard, you having been with the Canadian Pacific from its beginning—indeed, your railway connection in Canada somewhat antedates this company. You have seen the facilities of this company grow from twenty-five passenger cars to over seventeen hundred and your work has done much to fill these cars. You have seen our earnings grow from practically nothing to over $100,000,000, the placing of our ships on both oceans, the growth of our lake and river service, and also our British Columbian coast service. You have assisted in, as it were, the creation of an empire. I doubt if any man ever retired from this service so universally esteemed by all his colleagues, and we wish you, in your retirement, that peace and happiness which we hope may be yours to long enjoy."

J. S. Dennis, Manager Irrigation Department, Alberta and British Columbia Land Departments C.P.R., Calgary, Alta., whose appointment was announced in our last issue, has been intimately connected with land development in the west since the age of 16, when he was engaged in Government survey work in Manitoba. In 1878 he took charge of a special survey party in the province, and a year later entered the Hudson's Bay Co.'s service when its land department was organized by the late C. J. Brydges. In 1885, during the Riel rebellion, he formed an intelligence corps of surveyors and pioneers, and at the end of the rebellion he retired with the rank of Major of the Canadian Militia. Resuming his connection with Government surveys, he was, in 1887, appointed Chief Inspector of Surveys, and in 1894 was commissioned to visit the

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U.S. irrigated districts to secure information for use in Canada. In 1897 he was appointed Deputy Commissioner of Public Works for the North West Territories. In addition to supervising the Government irrigation development in the west, and on the transfer of that work to the Public Works Department, he took entire charge of the western irrigation surveys. On the inclusion of a large portion of these Government lands in the land grants to the C.P.R., in 1903, he became Superintendent of Irrigation and Land Commissioner for British Columbia for that company, and subsequently also Assistant to the Second Vice President, and later Assistant to Vice President Whyte, and in addition, had charge, for some time, of the company's water supply for locomotives west of Winnipeg. He was appointed to his present position Dec. 1, 1910. He is also President Canadian Pacific Irrigation Colonization Co., and has been a member of the Canadian Society of Civil Engineers since 1901.

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Railway Development.

The following matter was too late to be included with the other matter under this heading on pages 205 to 209.

Alberta Ry and Irrigation Co.—Further reference to this legislation will be found under the head of Railway Development, on another page The House of Commons, Feb. 10, amended sub-sec. 3 of sec. 1, to which objection had been taken, by substituting Cardston for Spring Coulee, and by adding the words "at or near Pincher Creek," so that the section as amended now reads· "From a point between Cardston and Mountain View, westerly at in or near the town of Pincher Creek to a point on the line of the C.P.R."

British Columbia and Alaska Ry.—L. M. Rice, is quoted as having stated in Vancouver, Feb. 9, that survey parties will be put in the field at an early date to complete the surveys started last summer from Lytton to the Alaskan border. No instructions had been given for making surveys for the projected line from Lytton to Vancouver. (Feb. pg. 109.) Further reference to this project is made under the head of Railway Development on another page.

The Burrard Inlet Tunnel and Bridge Co.'s projected railway will connect up the north arm of the Fraser river with Burrard Inlet, crossing the inlet at the second Narrows by a bridge, thence easterly along the shore line to Deep Cove, and westerly along the shore line to Horse Shoe Bay, with a tunnel under the first narrows which will give connection for the west end to the north shore. The line will be owned and controlled by the municipalities adjoining Burrard Inlet. The bridge proposed is a single deck one, 55 ft. above high water mark, high enough not to impede ordinary navigation, with a bascule opening large enough to enable the biggest vessels to pass in safety. The bridge will be of sufficient width to accommodate a single railway track, a double tramway track, two wagon roadways and sidewalks for pedestrians. The estimated cost of the bridge is $1,250,000. Test holes for the foundation of the bridge piers are now being sunk, and as soon as the engineers are in a position to advise the directors, tenders will be called for the erection of the substructure. (Feb., pg. 109.)

Canada and Gulf Terminal Ry.—The surveys which have been in progress during the winter between Matane and Gaspe Basin, Que., are reported to have been very successful, a route having been gone over, which will assure a maximum gradient of 0.6 %. L. E. Rowley, who has been acting chief engineer has been in charge of the work and is reported to have been appointed Chief Engineer. (Feb., pg. 109.)

Canadian North Eastern Ry.—The British Columbia Legislature is being asked to change the name of the Portland Canal Short Line Ry. to that of the Canadian North Eastern Ry., and authorize it to extend its line along Bear River easterly to the eastern boundary of the province at the Peace River on the Pine River pass, with a branch down the Naas River valley to the Pacific coast; and following additional lines: From near Stewart Lake to a junction with the G. T. Pacific Ry., and from some convenient point to the northern boundary of the province. (See Portland Canal Short Line Ry., Feb., pg. 155.)

Charlton to Elk Lake.—Referring to the matter under this subhead in the Railway Development department on another page. The Ontario Minister of Public Works replying to the delegation said the proposition was a straight mining one and not for colonization purposes. If figures could be provided showing that there would be enough ore shipped over the line to make it pay, the Government would consider the proposition and if it was decided not to build the branch would agree not to parallel any private line built the serve the territory.

Crows Nest and Northern Ry.—The British Columbia Legislature is being asked to extend the time for construction for a further three years. (April, 1909, pg. 247, and Jan., 1909, pg. 17.)

Dominion Development Ry.—The provisional directors named in the bill now before Parliament for the incorporation of a company with this title are: O. O. Howard, New York; J. G. Kent, W. D. Balfour, R. R. Hart, Toronto: T. A. Burgess, Ottawa. See also under Railway Development on another page.

Kamouraska and L'Islet Ry.—The following are the provisional directors of the company with this title, for the incorporation of which the Quebec Legislature is being asked: G. Michaud, J. A. Loney, C. Kidd, G. Hudon, Ste Anne de la Pocataire, Que.; F. Belanger, St. Damase, Que.: F. Soucy, St. Antonin, Que.; A. Stein, Fraserville Que. (Feb., pg. 111.)

Kettle Valley Lines.—A site of over 50 acres is reported to have been purchased at Penticton, B.C., or divisional yards, and station. A spur line of about a mile is to be built from the yards to the lake, where a wharf will be erected. See also under Railway Development on another page. (Feb., pg. 111.)

A contract has been entered into between the Kettle Valley Ry. and the Dominion Government, under the act granting aid to certain railways, under which the company will build about 250 miles from Midway, to a junction with the Nicola, Kamloops and Similkameen Ry., near Merritt, B.C.

Mid-Provincial and Nechaco Ry.—Application is being made to the British Columbia Legislature to incorporate a company with this title to build a railway, to be operated by steam, electricity, or other power, from the mouth of the Salmon River on Dean Channel, or Bella Coola, or some intermediate point, on the western boundary line of B. C. to Sigutla Lake, on to Kwalcho Lake, Entiaco Lake, Natalkuz Lake and Fraser Lake, thence easterly through Pine Pass to the eastern boundary of the province at Peace River. The provisional directors are: A. C. Forsberg-Hamilton, Vancouver; C. H. Lugrin, H. M. Leonard, E. B. Shaw, F. E. Reid, Victoria. (See Salmon River to Peace River, Jan., pg. 23.)

Naas and Peace River Ry.—The provisional directors named in the bill now under consideration by the British Columbia Legislature for the incorporation of a company with this title, having power to build the lines already mentioned are J. D. Hunter, W E Olliver, C. E. Thomas, Victoria, B.C (Feb., pg. 113.)

Naas and Skeena Rivers Ry.—The British Columbia Legislature is being asked to incorporate a company with this title to build a railway from Portland Inlet to the headwaters of the Skeena River, with extension lines from Nasoga Gulf or Naas Bay on Portland Inlet, to Ayance; from Ayance along the Naas and the Blackwater rivers to the outlet of Blackwater Lake; from the outlet of Blackwater Lake to the west fork of the Skeena River, and another line thence along the west fork of the Skeena River to the headwaters of the same river. The provisional directors are: G. H. Barnard, H. B. Robertson, Victoria; R. C. Johnson, Vancouver, B.C.; L. Benoit, Winnipeg, Man.; J. G. Scott, J. T. Ross, L. P. Pelletier, K.C.; J. A. Choquette, G. Le Moine, Hon. N. Garneau, A. E. Doucet, A. Gauvreau, O. E. Gauvreau, A. Hardy, J. E. Dube, C. E. Taschereau, H. Doheny, G. Proteau, Quebec; B. Newgrass, London, Eng. (Feb., pg. 115.)

New York Central and Hudson River Rd.—In order to construct a second track between Niagara Falls and Rochester, N.Y., the company has acquired the necessary extra width for its right of way.

Northern Vancouver Island Ry.—Application is being made to the British Columbia Legislature to incorporate a company with this title, to build a railway from Hardy Bay or Port McNeill, on the east coast of Vancouver Island to Cool Harbor, on the west arm of Quatsino Sound, or to Rupert Arm on Quatsino Sound. The provisional directors are: J. H. McGregor, W. B Garrard and H. B. Robertson, Victoria, B.C. (See Hardy Bay to Quatsino Sound. (Dec., 1910, pg. 1013.)

Ontario Railways Co.—Application is being made to the Dominion Parliament to incorporate a company with this title to build a railway from Sarnia via Chatham, to Windsor, Ont. with a branch line to Brigden, Ont. Authority is also being asked to operate car ferries across the Detroit and St. Clair rivers. Pringle and Guthrie, Ottawa, are solicitors for applicants.

Quebec Eastern Ry.—The Quebec Legislature is being asked to extend the time for the construction of the projected line to 1918, and to authorize an increase of the capital stock from $1,000,000 to $5,000,000. (Oct., 1909, pg. 745.)

Richmond, Magog and Stanstead Ry.—The provisional directors named in the bill before the Quebec Legislature for the incorporation of a company with this title are: A. H. Eastis, Boston, Mass.; A. C. Bissell, R. H. Fletcher, H. B. Fletcher, Sherbrooke, Que.: M. G. Crombie, Melbourne, Que.; C. B. Hibbert, Iberville, Que.: G. W. Cook, Montreal. (Feb., pg. 113.)

Vancouver North to Grouse Mountain.—Two bills are under consideration by the British Columbia Legislature asking for the incorporation of companies to build a railway to Grouse Mountain. One is by the Grouse Mountain Scenic Ry., of which the provisional directors are C. S. Gzowski, C. H. Allen, G. M. Gibb, W. E. Graveley, J. A. Macdonald, Vancouver. This company desires power to build a railway to be operated by steam, electricity, or other motive power from North Vancouver, to the summit of Grouse Mountain. The other company is the Grouse Mountain Scenic Incline Ry., the provisional directors of which are W. J. McGuigan, L. C. Miles, Vancouver. This company is asking for power to build a railway of standard or any gauge from lot 589, group 1, to lot 1526 group 1, New Westminster district. (Dec., 1910, pg. 1017.)

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The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Algoma Central and Hudson Bay Ry.—Consequent on the resignation of T. J. Kennedy, General Superintendent, G. A. Montgomery, Superintendent Michipicoten Division, has been moved from Michipicoten Harbor, to Sault Ste. Marie, Ont. to take up the duties of the A.C. & H.B.R. and other work.

Canadian Northern Ry.—R. Creelman, heretofore Assistant General Passenger Agent, has been appointed General Passenger Agent. Office, Winnipeg.

Osborne Scott, heretofore chief rate clerk Passenger Department, Winnipeg, has been appointed Assistant General Passenger Agent, vice R. Creelman, promoted. Office, Winnipeg.

W. Pratt has been appointed Superintendent of Sleeping and Dining Cars and Hotels. Office, Winnipeg. This is an extension of his previous duties, to include the hotels.

Canadian Northern Steamships, Ltd.—Wm. Phillips, heretofore Acting Traffic Manager, has been appointed General Freight and Passenger Agent. He also continues as General Eastern Agent C.N.R., and General Freight and Passenger Agent C.N.O.R. Office, Toronto.

Canadian Pacific Ry.—Pending an appointment in consequence of the death of J. E. Schwitzer, Chief Engineer, and the appointment of J. G. Sullivan, heretofore Assistant Chief Engineer Eastern Lines, as Assistant Chief Engineer Western Lines, at Winnipeg, J.M.R. Fairbairn Engineer Maintenance of Way Eastern Lines is acting as Assistant Chief Engineer Eastern Lines. Office, Montreal.

T. A. Martin, heretofore in charge of C.P.R. Montreal wharf, has been appointed agent at Place Viger station, Montreal, vice W. P. Martin, transferred to Vancouver.

R. W. McCormick, heretofore Assistant Superintendent District 4, Eastern Division, Ottawa, Ont., has been appointed Assistant Superintendent District 1, Eastern Division, vice J. H. Sheldon, transferred. Office, Farnham, Que.

T. Collins, Assistant Superintendent District 2, Eastern Division, has also been appointed Assistant Superintendent District 4, Eastern Division, as reported in our last issue. Office, Smiths Falls, Ont.

Jno Burns, heretofore District Master Mechanic District 1, Lake Superior Division, North Bay, Ont., has been appointed District Master Mechanic District 2, Ontario Division, London, Ont, vice L. G. Roblin, transferred.

L. G. Roblin, heretofore District Master Mechanic District 2, Ontario Division, London, Ont., has been appointed District Master Mechanic District 1 Lake Superior Division, North Bay, Ont., vice Jno. Burns, transferred.

W. R. Dunsmore, heretofore conductor, has been appointed acting Trainmaster District 1, Manitoba Division, Kenora, Ont., vice H. J. Coffin, appointed acting Superintendent at Saskatoon, Sask., during the absence on leave of E. L. Chudleigh.

J. G. Sullivan, heretofore Assistant Chief Engineer Eastern Lines, Montreal, has been appointed Assistant Chief Engineer Western Lines. Office, Winnipeg.

J. Manson has been appointed Assistant to the Vice President. Office, Winnipeg.

H. J. Pickersgill, heretofore Paymaster at Winnipeg, has been appointed Assistant Local Treasurer there, vice J. H. Carter, transferred to Calgary, Alta.

J. Kennedy, heretofore Trainmaster at Cranbrook, B.C., has been appointed Paymaster at Winnipeg, vice H. J. Pickersgill, promoted.

P. J. Cullin, heretofore chief clerk in City Ticket Office, Montreal, has been appointed Travelling Passenger Agent, Brandon, Man., vice A. L. Powell, promoted.

J. H. Carter, heretofore Assistant Local Treasurer, Winnipeg, has been appointed Paymaster at Calgary, Alta., vice T. Fawcett, appointed General Fuel Agent, Western Lines.

W. B. Steeves, heretofore Locomotive Foreman at Rogers Pass, B.C., has been appointed Locomotive Foreman at Field, B.C., vice H. A. Keswick, transferred.

T. Cassidy has been appointel Locomotive Foreman at Rogers Pass, B.C., vice W. B. Steeves, transferred.

H. A. Keswick, heretofore Locomotive Foreman at Field, B.C., has been appointed Shop Foreman at Kamloops, B.C. vice J. C. Reed, resigned.

N. P. Smith has been appointed Assistant Engineer in charge of Vancouver Terminals.

W. P. Martin, heretofore agent at Place Viger station, Montreal, has been appointed wharf agent at Vancouver, B.C., vice J. McCreery, transferred.

A. L. Powell, heretofore Travelling Passenger Agent, Brandon, Man., has been appointed city Freight and Passenger Agent, Washington, D.C., vice E. P. Allen, superannuated.

O. M. Duckett, heretofore in the office of the Holland American Line, Paris, France, is reported to have been appointed Passenger Agent, C.P.R. there.

Central Vermont Ry.—In consequence of the continued illness of C. F. Soule, Superintendent, St. Albans, Vt., the following appointments are reported: J. Keefe, Trainmaster Northern Division, St. Albans, to be acting Superintendent; S. E. McKenney, Terminal Trainmaster, St. Albans, to be acting Trainmaster Northern Division, and G. Prentice to be acting Terminal Trainmaster at St. Albans.

Grand Trunk Pacific Ry.—H. Saunders, car foreman, has been transferred from Edmonton to Wainwright, Alta.

W. Silverwood, car foreman, has been transferred from Wainwright to Edmonton, Alta.

Grand Trunk Ry.—J. H. Guess, has been appointed Assistant General Purchasing Agent. Office, Montreal.

H. G. Elliott, heretofore First Assistant General Passenger Agent at Chicago, Ill., has been appointed General Passenger Agent, vice G. W. Vaux, resigned on account of ill health. Office, Montreal.

B. A. Rose, heretofore clerk in the City Passenger and Ticket Agent's office, Peterboro, Ont., has been appointed City Passenger and Ticket Agent there, vice W. Bunton, deceased.

A. E. Duff, heretofore District Passenger Agent G.T. Pacific Ry., Winnipeg, has been appointed District Passenger Agent G.T.R., Toronto, vice J. D. McDonald, promoted.

J. R. Leckie, heretofore Locomotive Foreman, Palmerston, Ont., has been appointed Locomotive Foreman, London, Ont., vice J. Hay, transferred.

J. A. Walton, heretofore leading hand at Lindsay, Ont., has been appointed Locomotive Foreman Palmerston, Ont., vice J. R. Leckie, transferred.

J. Hay, heretofore Locomotive Foreman, London, Ont., has been apopinted Locomotive Foreman at Sarnia Tunnel, vice W. H. Towner, resigned.

J. D. McDonald, heretofore District Passenger Agent, Toronto, has been appointed Assistant General Passenger Agent at Chicago, Ill., succeeding H. G. Elliott, promoted.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—F. A. Nancekivell, heretofore Travelling Agent Great Northern Ry., Toronto, has been appointed General Agent M., St. P & S. S. M. R., Toronto.

R. G. McCraw, heretofore travelling from the Detroit office, has been transferred to Toronto.

New York Central and Hudson River Rd.—W. P. Carroll has been appointed Master Mechanic Rochester Division, vice F. M. Steele, resigned. Office, Rochester, N.Y.

Northern Pacific Rd.—W. E. Belcher, heretofore Travelling Freight Agent with headquarters at Detroit, Mich., has retired from the company's service.

Pere Marquette Rd.—T. Ensel, heretofore Superintendent Grand Rapids District, has been appointed Superintendent Telegraphs, vice W. K. Tasker. Office, Detroit, Mich.

F. P. Little has been appointed Chief Train Dispatcher Grand Rapids Division, Detroit, Mich., vice R. S. Black, appointed Trainmaster Buffalo Division, St. Thomas Ont., as reported in our last issue.

Connections between Dominion and Ontario Railways.

The following bill has been introduced in the Ontario Legislature by Col. the Hon. J. S. Hendrie:—

1. Sec. 98 of the Ontario Railway Act, 1906, is amended by adding thereto the following subsections:

(8) Where the lines or tracks of any railway, the construction or operation of which is authorized by the Legislature of the province of Ontario, are intersected by those of a railway, the construction or operation of which is authorized by the Parliament of Canada, or in any case in which the tracks or lines of any two such railways run through or into the same city, town or village, and it is desired by one of such companies or by any municipal corporation or other public body, or any person or persons interested, that the lines or tracks of such railways should be connected, so as to admit of the safe and convenient transfer of engines and trains from the tracks or lines of one railway to those of another, and for the reasonable receiving, forwarding, delivery, and interswitching of traffic between the said railways, the following proceedings may be had and taken:—

(a) Either of such companies, or any municipal corporation or other public body, or any person or persons interested, may file with the Secretary of the Board, or with the Secretary of the Board of Railway Commissioners for Canada, an application for an order that such connection should be required to be made, together with evidence of service of such application upon the railway company, or companies, interested or affected, and where the application is not made by the municipality upon the head of the municipal corporation within which the proposed connection is situate.

(b) After the receipt of the said application, the Board, and the Board of Railway Commissioners for Canada, may, by joint session or conference, in conformity with the practice to be established by them, hear and determine the said application, and may order that the lines and tracks of such railways shall be so connected at or near the point of intersection, or at or near such city, town or village, upon such terms and conditions and subject to such plans as they may deem proper.

(c) The Chairman of the Board, and the Chairman of the Board of Railway Commissioners for Canada, may make rules of procedure and practice covering the making of such applications and the hearing and disposition thereof, and may vary, alter or rescind the same from time to time.

(d) The Chairman of the Board, and the Chairman of the Board of Railway Commissioners for Canada may from

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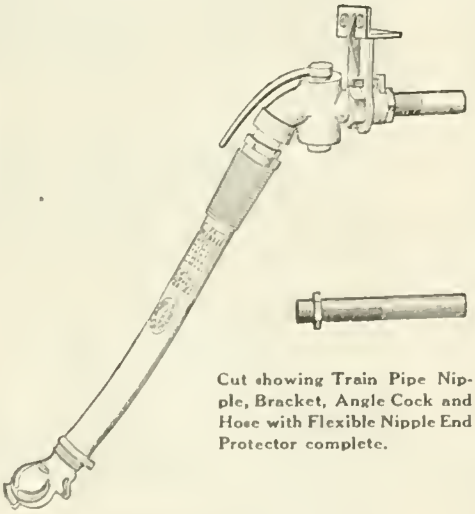

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time to time assign or appoint from each Board the members comprising the joint Board that may be required to sit for the hearing and determining of such applications, as they arise.

(e) Any order aforesaid may be made a rule of the Exchequer Court of Canada, and shall be enforced in like manner as any rule, order, or decree of such court.

9. The word "railway" shall in the next preceding subsection include any steam or electric street railway or tramway.

Telegraph and Cable Matters.

The British Postmaster General recently stated in London, Eng., that he would give early attention to the question of reduced press cable rates.

J. Townsley, who recently retired from the position of Superintendent of Construction Eastern Lines C.P.R. Telegraphs, Montreal, has been presented with a fur lined coat by the linemen of the division, and a gold headed . ebony cane by the officers of the system.

The Ontario Court of Appeal, Feb. 14, quashed the recent conviction by a Toronto magistrate of G. Hogarth, Local Manager G.N.W. Telegraph Co., Toronto, for transmitting racing information, and in doing so stated that the evidence was entirely insufficient to prove the case.

The board of conciliation, consisting of Judge Barron, Stratford, Ont., chairman; J. Gilmour, Brockville, Ont., on behalf of the Government Railways Managing Board, and J. G. O' Donoghue, representing the operators appointed some time ago, to enquire into the complaints of the Intercolonial Ry. telegraphers, concluded the enquiry Feb. 16. It is stated that the finding was unanimous, and that a small increase has been recommended in the report which has been forwarded to Ottawa.

At the annual meeting of the Anglo-American Telegraph Co., in London, Eng., Feb. 3, F. A. Bevan, who presided, is reported to have said that there were difficulties in the way of concluding a provisional agreement with the Western Union Telegraph Co., but that the directors hoped soon to surmount them. He was not sure that the company would remain a distinct one, but he gave assurance that no agreement would be carried out without the consent of the shareholders.

Press reports from Winnipeg state that B. S. Jenkins, General Superintendent C.P.R. Telegraphs, has announced that during the current year, an alternative telegraph line will be erected, between the West and Toronto, via Minneapolis, Sault Ste. Marie, and also via Sudbury, entirely independent, and controlled by the C.P.R. alone, that a direct wire between Vancouver and Chicago, via Winnipeg, will also be undertaken, and that additional wires will be provided east to Fort William and Port Arthur, west to Regina, and locally throughout the various provinces.

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H. E. Vautelet, Chairman and Chief Engineer of the Commission of Engineers appointed for the reconstruction of the Quebec Bridge, has resigned. Ill health is alleged to be the cause.

P. J. Cullin, who has been appointed Travelling Passenger Agent C.P.R., Brandon, Man., was born in Montreal, Mar. 18, 1873, and entered C.P.R. service July 16, 1889, since when he has been, to 1891, in Car Accountant's office, Montreal; 1891 to 1893, in District Passenger Agent's office, Montreal; 1893 to 1895, in City Ticket Office, Montreal, where he remained to the date of his present appointment.

Grain Elevator Notes.

The Goose Lake Grain Co. and the Goose Lake Milling Co. intend to build an elevator each at Brock, Sask.

The damage caused by the recent fire in the Maple Leaf Milling Co.'s elevator at Brandon, Man., is stated as $25,000.

The Pincher Creek Mill and Elevator Co., Ltd., Alta., has increased its capital stock from $35,000 to $100,000, by the issue of 650 shares of $100 each.

It is reported that an elevator will be erected on the Temiskaming and Northern Ontario Ry. at New Liskeard, Ont., in connection with Salmon's grist mill.

The town of Battleford has been authorized by the Saskatchewan Legislature to borrow $40,000 for the purpose of operating the flour mill or mills, and elevator or elevators now or at any time hereafter owned by it.

The Ogdensburg Terminal Co., Ogdensburg, N.Y., has given a contract for the construction of a 500,000 bushel reinforced concrete grain elevator at Ogdensburg, N.Y., to John S. Metcalf Co., Chicago and Montreal, who have prepared the drawings and specifications therefor. It will have a receiving capacity from boats of 18,000 bush. an hour maximum, a shipping capacity of 60 cars in 10 hours, and the approximate cost will be $200,000.

Following on the report of the Saskatchewan Elevator Commission, details of which we gave in our Dec., 1910, issue, the Saskatchewan Premier introduced a bill into the Legislature, Feb. 2, to incorporate the Grain Growers Elevator Co. of Saskatchewan, designed to give effect to the Commission's recommendations, and to provide a solution for the international elevator problem in the province. Under the provisions of the bill the Government is authorized to advance to the company loans not to exceed 85% of the cost of each elevator purchased or built by the company, and to make a cash grant to cover the expense of the company's organization, and also to local bodies of shareholders who support an elevator at any point in the province.

The recent case of the Barnett and McQueen Co. against the Canadian Stewart Co. for infringement of patents for a plurality of cylindrical grain bins, forming a monolithic structure, and having their adjacent peripheral portions rigidly connected, and forming supplemental storage bins in the intervening space, vertical webs extending through adjacent supplemental bins to form leg passages in combination with bifurcated elevator legs, extending from below said bins to adjacent leg passages, and for an accounting of elevator contracts recently completed at Fort William, Ont., for the G.T.P. Elevator Co., and the Consolidated Elevator Co., was dismissed in the Exchequer Court, the judge holding that in the case under consideration there was not sufficient invention to validate a patent, and even if the patent were valid, that the defendants' construction did not constitute an infringement.

The Dominion Government's Grain Commission Bill was read a first time in the Senate, Feb. 7. It provides for the appointment of an independent commission of three members, appointed for 10 years, with somewhat similar jurisdiction over the inspection, transportation and storage of grain, as the Board of Railway Commissioners has over the railways. It will have power to investigate and control all questions, and authority to weigh and examine grain as desired; to declare which are terminal elevators, and with the Government's consent and on appropriation being made for the purpose by Parliament, to acquire by lease, purchase or expropriation, any terminal elevators, or to build new elevators. It is also provided that the board may employ experts and the necessary staff to create and arrange inspection divisions and to make rules and regulations respecting grain. Transportation companies are required to carry commissioners and their staffs free over their respective lines. The bill also provides that for mixing and similar offences, fines up to $20,000 may be imposed, with or without imprisonment.

Among the Express Companies.

The Canadian Northern Ex. Co. has closed its office at Bresaylor, Sask.

The Dominion Ex. Co. has issued a circular to its agents, respecting the regulations governing the transportation and inspection of meat.

The Dominion Ex. Co. has entered an appeal on the question of taxation by the Regina city council, Sask. The judgment recently given was to the effect that the company was not exempt from local taxation, and a similar judgment has been given against the company in favor of the city of Brandon, Man.

J. V. Dini pleaded guilty at Montreal, Feb. 3, to a charge of converting $4,000 belonging to the Dominion Ex. Co. to his own use. The money was obtained in connection with the company's money order department. As the prisoner's returns were not arriving regularly at the head office, an inspector was sent to examine his books, and it was discovered that he had not accounted for the sum named, for which he had issued orders.

The bill to compel express companies to make returns of all unclaimed monies has been under consideration by a sub-committee of the House of Commons railway committee, which heard representatives of the various companies, and arrived at an agreement on all points, except the period within which the return for each year should be made. As the bill stands, at present, the return must be made within 20 days of the expiration of the calendar year, which is claimed to be too short.

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The C.P.R. and Chesapeake and Ohio Rd.—We are officially advised that there is no truth in the reports that the C.P.R. has made a traffic agreement with the Chesapeake and Ohio Rd., to take effect May 1, by which the Minneapolis, St. Paul and Sault Ste. Marie Ry., would be provided with an outlet on the Atlantic, at Newport, Va.

The G.T.P.R. has received 53 box cars nos. 312456 to 312508, from the Canadian Car and Foundry Co., Montreal.

The Grand Trunk Railway has bought 37,500 tons of 100 lbs. steel rails, the order being divided between the Dominion Iron & Steel Co. and the Lake Superior Corporation.

The Montreal Park and Island Ry., and the Montreal Terminal Ry., subsidiaries of the Montreal Street Ry., applied recently to the Board of Railway Commissioners for approval of standard passenger tariffs of 3c. a mile, with a minimum of 5c., subject to any special fares in force under agreements with municipalities. The M. P. & I. Ry. application was opposed by the city of Montreal and the town of Lachine, and the M. T. R. application was opposed by the cities of Montreal and Montreal East, and by the town of Pointe aux Trembles. The Board refused the applications and ordered both companies to file by Feb 15, for the Board's approval standard passenger tariffs specifying a minimum fare of 2½c. a mile.

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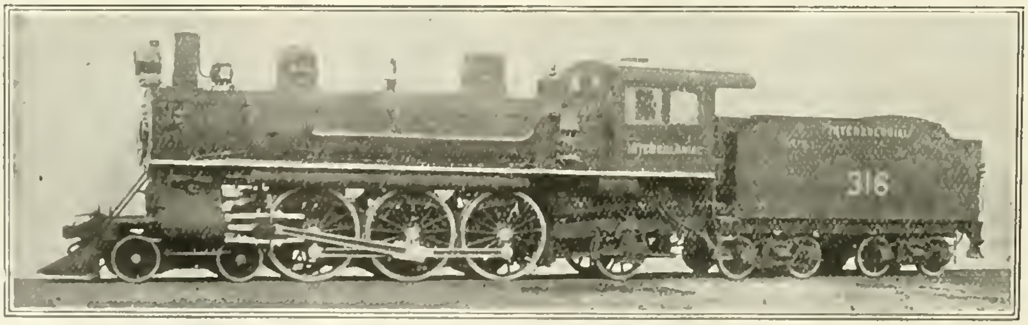

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Association's Office, 70 Bond St., Toronto.

Executive Committee.—C. E. A. Carr, General Manager Quebec Ry. Light, Heat and Power Co.; P. Dubee, Secretary Montreal St. Ry.; H. M. Hopper, Secretary-Treasurer, St. John Ry.; J. E. Hutcheson, Superintendent and Purchasing Agent Ottawa Electric Ry.; C. B. King, Manager London St. Ry.; W. R. McRae, Superintendent Motor and Truck Department Toronto Ry.

Assistant Secretary, Aubrey Acton Burrows, Secretary and Business Manager Railway and Marine World.

Official Organ, The Railway and Marine World.

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Toronto Railway Co's Report.

Following are extracts from the report for 1910, presented at the annual meeting, Feb. 1:—

A summary of operations, shows the following results:

Gross earnings	$4,377,116.19
Operating and maintenance, etc.	2,237,187.75
Net earnings	$2,139,928.44
Other deductions:	
Dividends	$ 560,000.00
Bond interest, etc.	201,288.19
	$ 761,288.19
Payments to city:	
Percentage on earnings	$ 596,297.35
Paving charges	83,040.58
General taxes	48,142.37
	$ 727,480.30

The passenger earnings show an increase of $458,223.23 over the previous year, being $4,336,369.05, compared with $3,878,145.82. The charges against passenger earnings for operation, maintenance, etc., were $2,237,187.75, or 51.6% of earnings. The payments made to the city were $727,480.30, an increase of $87,198.85, or 13.6%. Notwithstanding heavy charges throughout the year, including an increase in wages, the year's operations have resulted so satisfactorily that your directors were enabled to transfer $651,159.95 to the credit of profit and loss account. Large expenditures were made during the year upon capital account, the amount being $633,786.49. The new car house on Lansdowne Ave. will be completed in a few months. Early in the year it was decided to build 100 more double truck cars, upon the construction of which very large expenditures have been made in addition to providing the electrical equipment for same. Of these cars 30 have been completed and placed in commission, and work upon the balance is being rushed as rapidly as possible. The laying of new tracks upon the following streets was proceeded with: Harbord St. from Ossington Ave. to Bathurst St.; Wilton Ave. from Sherbourne to Sumach St.; and Adelaide St., from Bathurst St. to Spadina Ave. Additional electrical equipment has been installed at no. 3 sub-station, Dovercourt Road and Harrison Sts., and an air compressor plant was placed at the Lansdowne Ave. car house. In addition to the money expended on capital account, a large amount has been expended on the maintenance of the property, and the board feels satisfied that the physical condition of the property has been greatly improved.

The Toronto and York Radial Ry. reports that earnings continue to show very satisfactory increases—the gross income amounting to $399,615.69. compared with $351,460.42 for the previous year, an increase of 13.7 %.; while the net earnings, after providing for all operation and maintenance charges, bond and loan interest, etc., show a surplus of $55,998.03, an increase of $13,864.73.

Assets.

Road and equipment, real estate and buildings, including pavements, etc.		$14,674,057.11
Advances to subsidiary companies		1,590,457.15
Stores in hand	$212,962.90	
Accounts receivable	313,746.22	
		526,709.12
Cash in bank		304,072.90
		$17,095,296.28

Liabilities.

Capital stock		$ 8,000,000.00
Bonds—		
4½% sterling	$2,415,326.66	
4½% currency	983,000.00	
6 % debenture	600,000.00	
		3,998,326.66
Mortgages		70,000.00
Accounts and wages payable		254,525.68
Accrued interest on bonds		69,743.02
Dividend payable Jan. 3		140,000.00
Toronto Power Co. sinking fund guarantee		121,666.66
Unredeemed tickets		98,994.22
Provision for renewals and depreciation		1,302,006.49
Less charges to date		664,127.15
Insurance fund for injuries and damages		84,500.05
Profit and loss at Dec. 31		2,968,500.70
Balance surplus		651,159.95
		$17,095,296.28

Income Account.

Gross earnings		$4,377,116.19
Operating, maintenance, etc.	$2,237,187.75	
Interest on bonds, etc.	201,288.19	
Percentage on earnings	596,297.35	
Pavements, taxes	131,182.95	
		3,165,956.24
Surplus earnings		$1,211,159.95

Profit and Loss Account.

Balance from 1909	$2,968,500.70
Surplus earnings for 1910	1,211,159.95
	$4,179,660.65
Dividends, four of 1¾% each	560,000.00
	$3,619,660.65

Toronto and York Radial Ry.

Gross income—		
Passenger	$332,156.69	
Freight	56,055.72	
Sundry	11,403.28	
Total income		$399,615.69
Maintenance and operating expenses		230,521.58
Surplus		$169,094.11
Interest on bonds and loans		113,096.08
Net surplus		$ 55,998.03

The Toronto Power Co., Ltd.

Gross revenue from leased properties		$662,956.88
Income from investments, etc.		124,162.10
Total		$787,118.98
Less charges—		
Rentals, paid and accrued	$500,133.84	
Maintenance, operation, etc.	*215,477.47	
Interest on debenture stock, loans, etc.	133,200.04	
		848,811.35
Net deficit		$ 61,692.37

*Included in this amount is $56,483.59 expended in replacement of turbine runners.

Following is the board for the current year: President. Sir Wm. Mackenzie; Vice President, F. Nicholls; other directors, Hon. G. A. Cox, W. D. Matthews, Sir Henry M. Pellatt, Jas. Gunn.

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Electric Railway Notes.

The British Columbia Electric Ry. has received one heavy double broom electric snow sweeper from the Ottawa Car Co., Ottawa.

Application is being made to the London. Ont., city council to permit the street railway to operate freight cars on its lines during the night.

The Ottawa Electric Ry. has received six pay-as-you-enter car bodies, 33½ ft. long, 45 ft. overall. mounted on 27-FE-1 trucks. from the Ottawa Car Co.. Ottawa.

The Regina, Sask., city council has ordered in England our single-truck cars and two double-truck cars, of the p.a.y.e. type, for June delivery.

The British Columbia Electric Ry. has received two, the last of ten ordered last fall, double truck city cars. from the Preston Car and Coach Co.. Preston, Ont.

The Guelph Radial Ry. is reported to have ordered two pay-as-you-enter cars, of the most approved type, with 7 ft. vestibules and centre aisles, at a cost of about $7,400 each.

The Guelph Radial Ry.. Co. has ordered a 27-ton steel freight locomotive, and two 4 motor car equipments from the Canadian Westinghouse Co. It is also about to order two p.a.y.e. cars.

The Port Arthur and Fort William Electric Ry. has received two double truck city cars. for the city of Fort William, Ont., from the Preston Car and Coach Co., Preston, Ont.

The Ottawa Electric Ry is proceeding with the equipment of the double truck pay-as-you-enter cars, which it intends to put in operation in May, as recently announced by J. E. Hutcheson. Superintendent and Purchasing Agent.

The Montreal board of control is considering the question of enlarging the Wellington and Ontario street subways, to allow of the new type large cars of the Montreal St. Ry. to be operated there.

The Winnipeg city council has been granted leave to appeal direct to the Imperial Privy Council, instead of going to the Supreme Court of Canada, against the decision of the Manitoba courts in its action against the Winnipeg Electric Ry.

A majority of the Edmonton St. Ry. Commissioners are reported to have decided in favor of the dismissal of Superintendent Biswanger, and P. McNaughton, Superintendent of the Power House. To carry the vote into effect action by the city council is necessary.

G. R. G. Conway, M. Inst. C.E., M. Can. Soc. C.E., recently Chief Engineer Monterey Ry., Light and Power Co., and Monterey Waterworks and Sewer Co., Mexico, has been appointed Chief Engineer British Columbia Electric Ry. and its subsidiary companies, with office at Vancouver, B.C.

The Winnipeg Electric Ry. is applying to the Manitoba Legislature for an act ratifying the amalgamation between the Winnipeg Power Co., and the Winnipeg Electric St. Ry. Co., and between the latter company and the Manitoba Electric and Gas Co., the Northwest Electric Co., and other companies, and confirming the transfer of the assets, rights, powers and franchises of these companies to the Winnipeg Electric Ry.

The British Columbia Legislature has under consideration a measure declaring that the rules governing the operation of interurban electric tramways, and prescribing the equipment and appliances for locomotives, motors and cars used in the operation of tramways and street railways, approved Nov. 29, 1910, and Jan. 10, 1911, are valid, and made under the authority of the Tramway Inspection Act of 1910. These rules may at any time be amended. altered or annulled.

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Alberta Electric Ry.—The provisional directors named in the application to the Dominion Parliament for the incorporating of a company with this title are:—R. R. Jamieson, G. E. Wood, D. Stuart, W. T. D. Lathwell, R. S. Barbour, Calgary, Alta. Power is asked to enable the company to operate its lines by electricity, gas, gasolene, steam or other motive power. (Jan., pg. 71.)

Aroostook Valley Electric Ry.—A bill was introduced into the Maine Legislature Jan. 26, authorizing the A.V.E.R. to acquire the C.P.R. branch line running from Aroostook Jct. to Presque Isle and to extend the line from Washburn, the present terminus to the Canadian boundary. Press reports stated that the A.V.E.R. is controlled by the C.P.R., and that the intention is to provide by the building of the line in Maine, and connecting it with the C.P.R. by a line to be built in Canada, to give the C.P.R. a line from St. John, N.B., to Quebec, about 100 miles shorter than its present one. The point at which it is proposed to reach the Quebec boundary is in L'Islet county, about 70 miles directly east from Quebec.

A. R. Gould, President, A.V.E.R., stated in an interview that the C.P.R. has nothing to do with the project, which is being financed by New York interests for the development of Aroostook county in the interests of the people of Maine. "The road we plan to build," he added, "begins at Washburn, strikes northerly and westerly, striking Canada in Casgraine parish, Que. This is a distance of 82 miles. The system will measure 130 miles from Aroostook Junction to the point in Áraco parish, Que., where this road will eventually meet the National Transcontinental Ry. It will be the longest electrically operated line in New England."

Belleville Radial Ry.—Application is being made to the Ontario Legislature to extend the time for the lines authorized to be built. Clute, Morden and Shorey, Belleville, Ont., are the solicitors.

Brandon Electric Ry.—Application is being made for a franchise for the building of an electric railway in Brandon, Man. H. P. Blackwood, Winnipeg, is solicitor for applicants. (Dec., 1910, pg 1065.)

Brantford St. Ry.—A bylaw was passed by the Brantford, Ont., city council granting the B.S.R., which is one of the constituent companies of the Grand Valley Ry., an extension of time to Apr. 1 to build the line to Holmedale. If default is made in the building of the line the company's charter will be forfeited. The agreement further provides that in the event of default the city will build the line and obtain legislative authority to operate it. (See Grand Valley Ry., Dec., 1910, pg. 1067.)

British Columbia Electric Ry.—The construction programme laid out for the current year provides for the completion of 23 miles of interurban lines, and the laying of about 15 miles of new lines in Vancouver and suburbs. The new interurban lines include the Vancouver, Fraser Valley and Southern Ry., under construction through Hastings and Burnaby into New Westminster, and an additional line to Eburne. In Vancouver it is proposed to build a large terminal station on False Creek, where the V.F.V. and S. Ry. starts. In New Westminster it is proposed to relocate some of the lines, and to build a second track on others. In connection with the wharf, which is being built at New Westminster, an area of 35 acres of low lying land is being reclaimed for use as yards, etc.

The city of Vancouver has under consideration the enlargement of the city boundaries, and in connection therewith is taking up the question of the various franchises of the B.C.E.R. within the area proposed to be taken in, with a view of unifying them, and having one contract governing the whole area. The franchise in Vancouver expires in 1919, that in Hastings and D.L. 301 has 20 years to run, and those recently granted in South Vancouver and Point Grey have 40 years to run. The company desires a franchise for 23 years, and while this has not been absolutely agreed to, the terms under discussion are based upon it. The question of the Point Grey franchise has been before the courts, and judgment has been reserved in the action brought to invalidate the bylaw granting it.

In an interview at Vancouver, Feb. 8, Assistant General Manager Glover stated that one of the conditions of the agreement between the company and the C.P.R. with respect to the Vancouver and Lulu Island Ry., was that the B.C.E.R. should take over the operation of the line connecting New Westminster and Westminster Jct., as soon as the management made the request. Local reports state that the request is likely to be made at an early date.

A. T. Goward, local manager in Victoria, is quoted as having stated Feb. 9, that power from the Jordan River plant would be available April 1. (Feb., pg. 167.)

Buffalo, Lockport and Rochester Ry.—In connection with this elevated railway in which Toronto people are interested, creditors were asked to send in particulars of their claims to the receivers by Feb. 20. The receivers were appointed on the petition of the National Bond and Share Co.

Buffalo, Niagara and Toronto Ry.—Application is being made to the Dominion Parliament to revive and confirm the powers conferred on the company by its act of incorporation, chap. 67 of the statutes of 1906, to extend the time for its construction; substitute the words "between the town of Niagara-on-the-Lake and" for "at or near," in par. 6, subsec. 1, sec. 8, and to state that any motive power except steam may be used. (Dec., 1910, pg. 1065.)

Calgary Municipal St. Ry.—In order to provide for projected extensions of the street railway the city council of Calgary, Alta., has approved plans for the erection of steel bridges across the Elbow at Twelfth Ave. east, and at Second St. The bridges will be 30 ft. wide, providing room for a single track to be laid, that at Twelfth Ave. will consist of two spans of 100 ft. each, and that at Second St. of two spans of 150 ft. each. The cost of the two bridges is put at $55,000. (Feb., pg. 167.)

Chatham, Wallaceburg and Lake Erie Ry.—No new work was undertaken during 1910, and the company does not propose to do more than add to its siding accommodation during this year. (Nov., 1910, pg. 963.)

Edmonton Radial Ry.—During 1910 track was laid on two additional lines, a distance of 3.5 miles, as follows;—from Syndicate Ave. to City Park, 2.5 miles, and from Twenty-first St. to Twenty-fourth St., 1.0 mile. The work was done by the city staff by day work. (Dec., 1910, pg. 1065.)

Guelph Radial Ry.—Application is being made to the Ontario Legislature to extend the time for the building of the branch lines authorized, and to ratify an agreement dated Aug. 15, 1910, with the People's Ry. respecting the building of that company's lines in the city of Guelph, Ont.

We were advised Feb. 10 that the extension proposed to be built in St. Patrick's ward will be one mile, and that a single track only will be laid. Tenders have not been asked for the work, it not having been decided how it will be done. (Feb., pg. 162.)

Greenwood-Phoenix Tramway Co. Application is being made to the British Columbia Legislature to incorporate a company with this title, having power to construct a tunnel under the mountain lying east of Greenwood, from the Nelson mineral claim to the Victoria mineral claim, under the city of Phœnix, with branch tunnels, and in connection with the same to build railways to be operated by electricity or otherwise. It is desired to have power to take over the Phœnix Tramway Co., which was incorporated under the Provincial Tramway Company Incorporation Act. I. H. Hallett, Greenwood, B.C., is solicitor for applicants.

Halifax Electric Tramway.—The city council had under consideration, Feb. 14, a letter from W. J. DeBlois, secretary, stating that the company was prepared, if given the proper authority from the council, to proceed with the work to complete the proposed second track on the loop line during the summer. The matter was referred to the Public Works Committee for consideration. Nov., 1910, pg. 963.)

Hamilton Street Ry.—The Hamilton city council has appointed a special committee to receive and consider suggestions for new lines in the city. The suggestions received Feb. 10 include an extension to be built along Ferrie St. through the manufacturing district to Birch Ave., and continued from the corner of Sherman Ave. and Main St. to Ottawa St., to Barton St. and another extension be built along Herkimer St. to McDonald Ave., to Aberdeen Ave. and to Queen St., Hamilton. (Dec., 1910, pg. 1069.)

Imperial Traction Co.—The provisional directors named in the application to the Dominion Parliament for an act incorporating a company with this title are:—L. B. Howland, Toronto; R. Miller, Ingersoll, Ont.; G. M. Reid, London, Ont.; F. W. Hay, Listowel, Ont.; J. M. Taylor, Guelph, Ont. (Feb., pg. 167.)

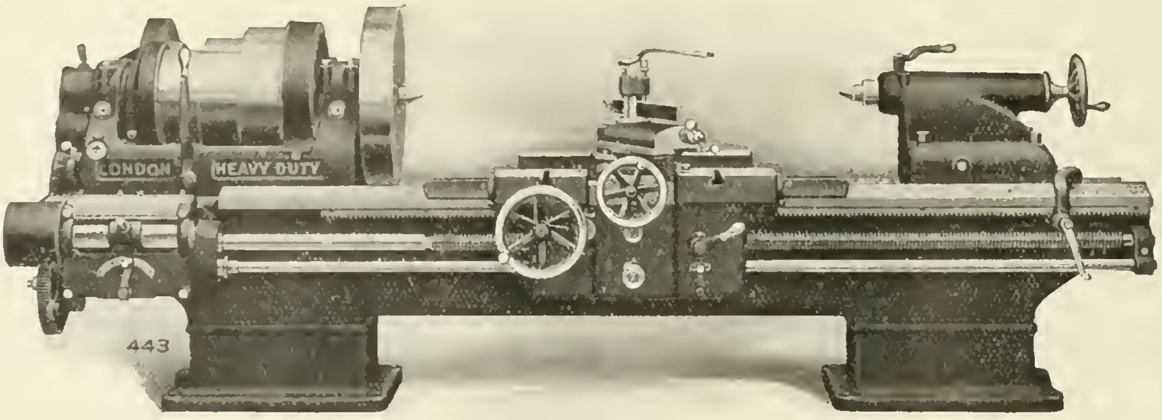
International Traction Railways.—The Ontario Legislature is being asked to enable the I.T.R. to acquire the name, rights, franchises, etc., of the International Ry. in the province. A. M. Grier, Niagara Falls, Ont., is solicitor for applicant. (Jan., pg. 71.)

Lake Erie and Northern Ry.—The bill under consideration by the Dominion Parliament for the incorporation of a company with this title gives power to build a railway from Port Dover, passing through Simcoe, Waterford, Brantford and Paris to Galt, with a branch from Paris or Glenmorris to Ayr, Ont. The company is also applying for power to operate steam and other vessels on Lake Erie. The provisional directors are:—J. Muir, R. Ryerson, W. S. Brewster, W. P. Kellett, W. D. Schultz, J. S. Sanders, Brantford. (Feb., pg. 167.)

Lethbridge, Alta.—A resolution has been passed by the Lethbridge, Alta., municipal council directing the city engineer to report as to various works which would be necessary in preparation for the building of a street railway system. (July, 1910, pg. 584.)

London St. Ry.—At the annual meeting held Feb. 1, it was decided to proceed with the work of building a plant to be operated by steam, for the development of electricity to operate the cars. (Dec., 1910, pg. 1069.)

The Montreal and Southern Counties Ry. has under construction an extension of a mile from St. Lambert to the Country Club of Montreal, and a 12 mile extension to Chambly, Que. It has also



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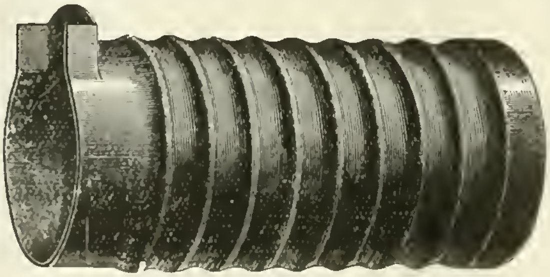

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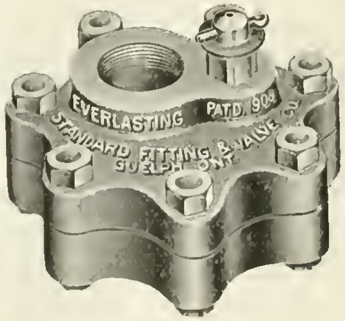
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under survey a line from Longueuil to Vercheres, 21 miles, and a line from St. Lambert to the Chateauguay and Huntingdon districts, 50 miles. The extension to the Country Club is expected to be in operation by June 1. and the line to Chambly by August Construction of the lines to Vercheres and to the Chateauguay and Huntingdon districts will not be started before next year. (Feb., pg. 168.)

The Montreal Park and Island Ry. is applying to the Dominion Parliament to extend the time for the construction of the lines authorized to be built. A clause provides that the company shall not construct any railway in Mount Royal Park. (Dec., 1910, pg. 1069.)

Montreal Terminal Ry.—An extension of 1.02 miles from Pie IX. St. along Earnest St. to the terminus was completed during 1910. (Feb., pg. 167.)

Montreal Underground and Elevated Ry.—A letter has been received by the board of control of the city of Montreal, on behalf of this company, stating that it was prepared to submit a proposal which it had under consideration for the promotion of rapid transit in the city. (April, 1910, pg. 311.)

Moose Jaw Electric Ry.—The Saskatchewan Legislature has under consideration a bill for the incorporation of a company under this title with authority to build or acquire lines to be operated by steam or electricity, or partly by steam and partly by electricity, as follows:—A single or double track railway on any of the Moose Jaw streets, subject to the approval of the city council, and suburban lines radiating from Moose Jaw to a distance of not more than 10 miles therefrom, the location and plans to be approved by the Provincial Government. The franchise granted Mar. 26. 1910, to J. B. McRae, assigned to the Moose Jaw Electric Ry., is declared to be an exclusive franchise, granting the exclusive right to operate a street railway in Moose Jaw during the term of its continuance. The provisional directors are A. A. Dion, N. J. Ker, D. R. Street, A. H. Dion, Ottawa; E. M. Saunders, Moose Jaw. The provisional directors are all officers and directors of the Moose Jaw Electric Ry. Co. (Limited), a company formed under the British Columbia Companies Act; and J. B. McRae, to whom the charter in Moose Jaw was originally granted by the city council, is Chief Engineer of the company. (Feb., pg. 167.)

Morrisburg and Ottawa Electric Ry.—The Ottawa city council is being asked to grant the company a franchise for a line along Main St., in order to connect its line from Morrisburg with the lines of the Ottawa Electric Ry. Also for permission to lay tracks on Main St. and Hawthorne Ave., Ottawa East, at the junction of which it is proposed to erect a passenger terminal station. C. M. Willard, Morewood, Ont., is President. (Dec., 1910. pg. 1067.)

Mount McKay and Kakabeka Falls Ry.—The municipal council of Paipoonge is applying to the Ontario Legislature to confirm bylaws exempting from taxation the company's railway in the municipality; to permit it to carry its lines along any highway, and to raise $4,000 by debentures to aid in building a bridge across the Kaministikwia River, to be used by the railway. (Sept., 1910, pg. 781.)

Niagara Frontier Electric Ry.—The Ontario Legislature is being asked to incorporate a company with this title to build an electric railway from Niagara-on-the-Lake. to Fort Erie, to acquire other electric railway lines, to make traffic arrangements with electric railways, ferries or steamboats, and to acquire running rights over any other electric railway. G. H. Pettit. Welland. Ont., is solicitor for applicants.

Niagara, St. Catharines and Toronto Ry.—The Board of Railway Commissioners Feb. 6 authorized the opening for traffic of the line from Welland to Port Colborne, Ont. (Feb., pg. 169.)

Niagara, Welland and Lake Erie Ry.—Application is being made to the Dominion Parliament to incorporate a company with this title to build a railway from Niagara Falls, Ont., westerly through Welland and Port Colborne, with branches from Port Colborne westerly to Port Dover, and easterly to Fort Erie. The line is declared to be a work for the general advantage of Canada, and while it is not so stated, it is evidently intended that it shall be operated by electricity, as power is asked to develop and dispose of electricity. The provisional directors are:—A. P. Laughlin, Welland, Ont.; F. W. Griffiths, Niagara Falls, Ont.; D. L. Stafford, Dunkirk, N.Y.; F. C. Carlesen, Los Angeles, Cal. ((Nov., 1910, pg. 965, and Oct., 1910, pg. 877.)

North Midland Ry.—Application is being made to the Ontario Legislature to authorize the city of London to enter into an agreement with the company, providing for the guarantee by the city of the principal and interest of the company's debentures to the amount of $200,000, as provided by the bylaw approved by the ratepayers, Jan. 2. (Feb., pg. 169.)

A. N. Warfield, formerly with the Peoples Ry., and now engaged as Chief Engineer of the N.M.R., has been in Stratford. endeavoring to obtain a guarantee of bonds for that line.

Ontario West Shore Ry.—The proposed bylaw granting the company a franchise in Goderich, Ont., is being reconsidered by the town council. The bylaw was prepared a year ago, but it was not pressed to a vote, as it was not satisfactory. The company desires to carry freight, and the council is opposed to this, so far as the main streets are concerned. (Nov., 1910, pg. 965.)

Oshawa Ry.—Application is being made to the Ontario Legislature to authorize the town council to enter into an arrangement with the company with regard to the paving of King and Simcoe Sts.

Ottawa and St. Lawrence Electric Ry.—The Ontario Legislature is being asked to extend the time for the building of the lines authorized by its act of incorporation. (Feb., pg. 169.)

Ottawa Electric Ry.—We are officially informed that no additional mileage of track was laid during 1910, the only new track laid being a mile of double track on portions of two streets where there had been previously only a single track.

The G.T.R., having arranged to give a 15 ft. strip to widen Mosgrove St. between Rideau and Besserer Sts., the city council, Feb. 15, decided to ask the O.E.R. to move its tracks for mail cars from Little Sussex St. to Mosgrove and Besserer Sts.

Ottawa, Smiths Falls and Kingston Electric Ry.—Application is being made to the Ontario Legislature to incorporate a company with this title having power to build a railway to be operated by electricity or other motive power from Ottawa via Smiths Falls to the boundary of Leeds and Frontenac counties, and thence either through Pittsburg township or Storrington and Kingston townships to Kingston, with a branch from Smiths Falls to Perth and Lanark. The provisional directors are:—R. H. McElroy, Carp, Ont.; T. A. Kidd, Burritt's Rapids, Ont.; F. A. Heney, Nepean tp.; J. C. Graham, North Gower tp.; A. E. Baker, Merrickville, Ont.; J. S. R. McCann, Kingston, Ont.; J. E. Caldwell, Nepean tp.; Rev. D'A. T. Clayton, North Gower tp.; E. P. McGrath, Ottawa; G. L. Dickenson, D. Clarke, Manotick, Ont.; W. J. Scott, Lanark. (See Ottawa and Kingston Electric Ry., Feb., pg. 169.)

Peoples Ry.—It is reported that up to Dec. 31, 1910, there had been 7.5 miles of grading completed between Bloomingdale and New Germany, Ont., and that there had been built three piers and one abutment for the bridge over the Grand River.

The Guelph Radial Ry. is asking the Ontario Legislature to pass an act ratifying an agreement made Aug. 15, 1910. with the P.R. Co. respecting the construction of certain lines in the city.

In a recent interview, W A. Bugg stated that an excellent route had been found for a line into Collingwood, and that the people there were in favor of subscribing $50,000 toward building it, if a bylaw was submitted. The line would reach Collingwood from Guelph, by way of Arthur and Flesherton. Referring to the operation of the line, Mr. Bugg stated that negotiations were in progress with a strong syndicate for the operation of the whole of the lines proposed to be built.

It was stated at a recent meeting of the Berlin, Ont., board of trade, that it was expected an announcement would shortly be made that interests allied with the Canadian Northern Ry. had entered into an agreement for taking over the rights and franchises of the P.R. Co., and would complete the construction of the lines. (Feb., pg. 169.)

Port Arthur and Fort William Electric Ry.—The Ontario Legislature is being asked by the city council of Port Arthur to authorize, among other things, the appointment of three salaried public service commissioners, who shall have the control and management of all the corporation's public utilities, and who shall possess the powers conferred on a board of control by sec. 677 of the Municipal Act, the raising of $15,000 by debentures for the building of a second street railway track on Arthur St., the raising of $75,000 by debentures for the purpose of laying 80 lb. steel rails on Cumberland St., and for other street improvement purposes; to raise $6,500 by debentures for the purpose of purchasing an electric motor, etc., at the power house; and to raise $10,000 by debentures to purchase a motor generator at the hydro-electric station. (Feb., pg. 169.)

Quebec and Sagueuay Ry.—Tenders will be received to Mar. 10 by J. F. Guay, Chief Engineer, Quebec, for the building of 56 miles of line from Cap Tourmente to Murray Bay wharf, in sections of 10 miles. The line will start from the present terminus of the Quebec Ry., Light and Power Co.'s line, formerly known as the Quebec, Montmorency and Charlevoix Ry., and will be built along the shore of the St. Lawrence River. It is said that the whole project has been financed in England and France. R. Forget, M.P., the President, has been negotiating with the Dominion and the Provincial Governments with a view to obtaining subsidies in aid of the line. A subsidy for a line covering a portion of this route has already been voted by the Dominion Parliament, and is available for the Q. and S.R A contract has been let to the Bishop Construction Co., Montreal, for the building of a large pulp mill at Murray Bay, with a siding for the same. This siding will eventually be connected with the Q. and S.R. E. A. Evans, formerly General Manager and Chief Engineer of the Quebec R., Light and Power Co. is consulting engineer for the Q. and S. Ry.

The Q. and S.R. has power to build a line from Cap Tourmente via Murray Bay, to Tadousac, at the mouth of the Saguenay River. The construction will be a difficult piece of work, there being a great deal of rock work necessary in

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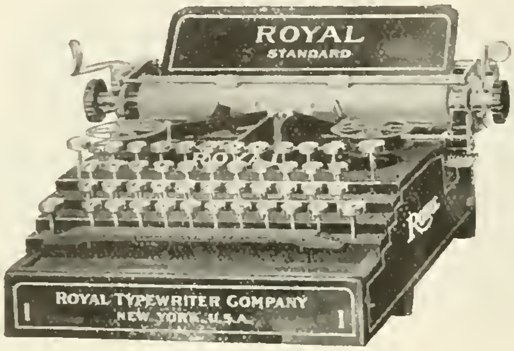

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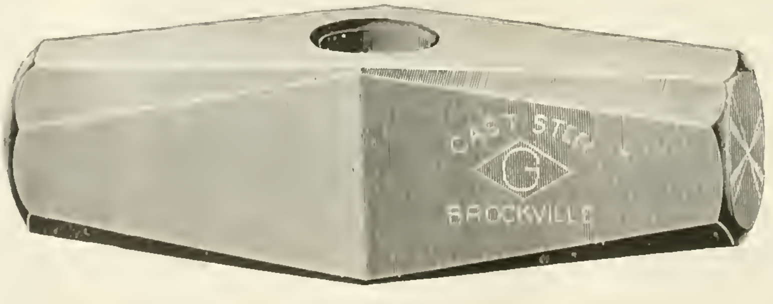

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order to provide a route along the cliffs which form the northern bank of the St. Lawrence River. (Feb., pg. 169.)

Quebec County Ry.—The Board of Railway Commissioners has recommended the Governor-in-Council to sanction an agreement between the company and the Quebec Ry., Light and Power Co. (Feb., pg. 169.)

Regina Electric Ry.—We have been advised that contracts have not been let for the building of any electric railway lines in Regina, Sask. It is expected, however, that work will be started in a month or two. L. A. Thornton, city engineer, has charge of the project. We were further advised Feb. 11 that the city had placed orders for the steel rails, overhead work, street intersection work, and the necessary power plant, and that it is the intention to begin the construction of the street railway as soon as possible, so as to have it opened for traffic in July.

The Saskatchewan Legislature has under consideration a measure authorizing the city council to build and operate as a municipal public work a railway to be operated by electricity, and granting all the necessary powers, in order that the project may be carried out. The measure confirms all that the city has already done in connection with the matter, including the passing of a bylaw providing for the raising of $100,000 by debentures towards the building of the line. For the purpose of raising further funds the city may sell its lands, or raise money by mortgaging the lines to be built, and the revenues accruing from their operation, without the submission of any further bylaws to the burgesses for their assent. (Nov., 1910, pg. 965.)

St. John, N.B., Ry.—The city council, Feb. 12, passed a resolution making a charge of $100 a month for maintenance of roadway and snow cleaning for the proposed extensions out the Loch Lomond Road. (Feb., pg. 169.)

St. Thomas Street Ry.—In his annual report on the condition of the line, Supt. Gillett informed the city council of St. Thomas, Ont., that the overhead construction was very bad, and must be renewed for public safety; that the track on Talbot St. was too light for the heavy traffic, and that while the line as a whole was in fair condition, it was time it was entirely rebuilt. Some changes in the routes were necessary and new cars should be provided. The line was being run as cheaply and as efficiently as circumstances would permit, and there was no reason to be ashamed of the financial results, considering the conditions. (June, 1910, pg. 497.)

Sackville, N.B.—A short piece of line, which was laid out as a spur to the New Brunswick and Prince Edward Island Ry., on the Pickard-Fawcett properties in Sackville, N.B., is to be operated by electricity, the necessary power being obtained from the local electric light station. Construction is being proceeded with and tracklaying is reported to be in progress. (See New Brunswick and Prince Edward Island Ry., Jan., pg. 23.)

Sandwich, Windsor and Amherstburg Ry.—The Ontario Legislature is being asked to pass an act declaring that sec. 11 of chap. 97 of the statutes of 1893, shall not be intended to, and did not affect the rights and interests of the municipality; to strike out the first four lines of the section and by adding words to the effect that nothing in the act should have the effect of continuing the franchise of the company beyond Dec. 15, 1912, or beyond such time as under sec. 202, of the Ontario Railway Act, 1906, the company would be entitled to exercise its rights or franchise. (Nov., 1909, pg. 841.)

Sarnia Street Ry.—Press reports state that an arrangement is being made between the company and the Board of Trade, for the building of an extension of a mile along the shore of Lake Huron from the present terminus in connection with the projected extension of the summer resort there. The company is willing to build the line, provided the Board of Trade secures the right of way from the property owners along the route. (Jan., 1910, pg. 59.)

Sherbrooke St. Ry.—In addition to having laid some additional mileage, the company, since it took possession of the lines in Aug. 1910, has completed the reconstruction of about one-half of the seven miles of line operated by the old company. New ties have been put in; new 70 lb. steel rails laid, with new bonds, etc. The remaining mileage of the old lines will be reconstructed during this year.

Two of the three units of the new power plant on the Magog River have been completed, and the company has available for general distribution considerable power, over and above what is required for the operation of its lines.

We were advised Feb. 10, that the company on taking over the property from the former proprietors, arranged to reconstruct the lines then in existence, and to build extensions so as to increase the mileage to 13 miles. About five miles of line have been reconstructed, 60 ft., 7 in. girder rails, 70 lbs to the yard being used, laid on new ties, held by tie rods and rail braces being used, the rails being bonded with wire pressed bands, and all switches, frogs and crossovers having manganese steel centres. Preparations have been made to push forward the reconstruction of the remaining mileage in the spring. After the present lay-out has been rebuilt, the projected extensions in the city will be built. It is expected that this work will be completed by July 1. On this being done attention will be given to the building of interurban lines. It is proposed to make large extensions to the company's car barns, and to remodel the shops and stores. The new 4,000 h.p. hydro-electric plant on the Magog River was expected to be placed in operation Feb. 15. (Nov., 1910, pg. 965.)

Stratford Ry.—Application is being made to the Ontario Legislature to incorporate a company with this title to take over the franchise granted by bylaw 1739 of the city of Stratford to T. O. Robson, H. L. Rice, D. Bouris, and A. Baird, for the building of an electric railway in the city, and to authorize the company to build, in connection with the city lines a system of interurban lines with branches therefrom, westerly to Lake Huron, westerly and northerly to Mitchell and Moncton; northerly to Milverton and Listowel and easterly to Tavistock. Makins and Gregory, Stratford, are solicitors to the applicants.

A conference between representatives of the company and the Stratford city council finance committee was held Jan. 31 when certain matters relating to the building of the line were informally discussed. The members of the committee state that satisfactory progress is being made by the company so far as its organization is concerned.

The company has had some car loads of material delivered in Stratford, Ont., and is said to be preparing to let contracts for concrete work. A contract with the St. Marys and Western Ontario Ry. for the building of a line from Stratford to Lake Huron, has been deposited with the city clerk.

Toronto and York Radial Ry.—The Ontario Railway and Municipal Board, Feb. 16, took up the consideration of the application of ratepayers of North Toronto, for a more efficient service, etc. on the Metropolitan Division. The company proposes laying a second track, but the town council opposes it. Decision was reserved. (Feb., pg. 169.)

Toronto Interurban Ry.—The Ontario Legislature is being asked to incorporate a company with this title to build a line to be operated by steam or electricity, or both, from the northerly limits of Toronto to Newmarket, Ont. The provisional directors are C. C. Cummings, F. D. Mackay, M. H. Ludwig, K.C., A. W. Ballantyne, C. F. Ritchie, Toronto. (Feb., pg. 169.)

Toronto Suburban Ry.—The notice of application to the Ontario Legislature to authorize the extension of lines, has been amended. The extensions now proposed are, from the present authorized Guelph or Hamilton line, near Cooksville to Milton, thence northerly to Acton, and to extend the Guelph line to Berlin, Preston, Hespeler, Galt and Hamilton; to increase the capital stock, to issue bonds for terminals, and to extend the time for the construction of the previously authorized lines.

We are advised that the company has under survey an extension of its line, now terminating at Lambton, Ont., to Brampton, 14 miles; and an extension of its line, now terminating at Weston, to Woodbridge, seven miles. (Feb., pg. 169.)

Western Central Ry.—The application to the Dominion Parliament for a Dominion charter for this company was talked out in the House of Commons Railway Committee Feb. 16. The company was originally incorporated by the Ontario Legislature, and has been granted several extensions of time, but no construction has been done. (Jan., pg. 73.)

Windsor and Tecumseh Electric Ry.—The Ontario Legislature is being asked to extend the time for the building of the already authorized line from Tecumseh to Chatham, Ont., and to authorize the building of a branch from its existing line in Sandwich East, easterly to Belle River, Ont. (Dec, 1907, pg. 929 See also Sandwich, Windsor and Amherstburg Ry.)

Winnipeg Electric Ry.—The Winnipeg board of control has under consideration proposals for the extension of the electric lines in the city. The last meeting was held Feb. 10, but the members of the committee refused to give any information as to the plans which had been considered.

A contract is reported to have been let for the building of a new power station. The plant is calculated to have a minimum capacity of 12,000 h.p. and a maximum capacity of 17,000 h.p. (Feb., pg. 169.)

London Street Railway Report.

Following is a summary of the report for 1910, presented at the annual meeting Feb. 1:—

	1910.	1909.
EARNINGS.		
Passengers	$250,897.34	$238,267.23
Miscellaneous	5,381.14	5,092.16
Gross earnings	$256,278.48	$243,359.39
EXPENSES.		
Maintenance:		
Way and structures	$ 21,736.67	$ 21,735.66
Equipment	25,102.23	24,743.43
Transportation:		
Power plant	31,609.98	27,796.46
Car service	73,851.44	67,866.35
General	29,891.36	27,688.54
Total operating expense	$182,191.68	$169,830.44
Net earnings	$ 74,086.80	$ 73,528.95
DEDUCTIONS.		
Interest on bonds	$ 28,750.00	$ 28,345.86
Interest on overdraft		541.70
Total deductions	$ 28,750.00	$ 28,887.56
Net income	$ 45,336.80	$ 44,641.39

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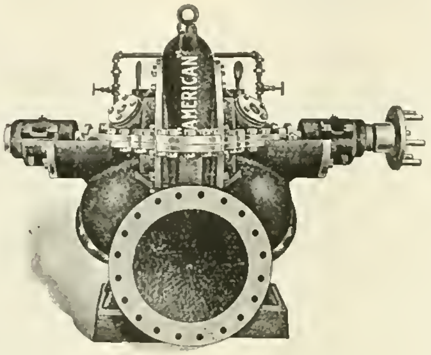

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ed on improvements, additions, etc. The expenditure for track purposes continues to increase, owing to the general reconstruction necessary throughout the system. In following the city's instructions to repave track allowance on Dundas St. from Wellington to Ridout, and Richmond St., from Fullarton to the G.T.R., it was found advisable to completely rebuild this track. An 80 lb. T rail in 60 ft. lengths was adopted, and laid on creosoted blocks thoroughly imbedded in a concrete foundation. Only part of this work has been completed, and will be charged to operation.

We have considered several propositions submitted by the Hydro-Electric Commission, relative to Niagara power, which we find are not attractive in comparison with modern steam generation. However, there is still a possibility that some arrangement can be made to our mutual satisfaction.

The wages of motormen and conductors were voluntarily increased on April 1, the new scale for regular men being 18c. an hour for the first and second years, 19c. an hour for the third year, and 20c. an hour for the fourth year. Other wages have also been increased as conditions required.

As we have had sufficient money for our requirements, the directors have not yet considered it necessary to dispose of the $25,000 bonds recently authorized. The gross earnings and surplus for the year have shown a substantial increase, and we believe the coming year will be quite as satisfactory. The directors are pleased to state that the relations with the public are very gratifying and that no litigation of any kind appears against the company.

ASSETS.

Road and equipment, real estate, buildings and plant	$1,140,223.41	
Improvements, additions, etc.	7,307.49	
Total		$1,147,530.90

CURRENT ASSETS.

Cash in hand	$ 2,313.04	
Cash in bank	15,834.89	
Accounts receivable	1,570.52	
Stores	29,801.35	
Coal stock	4,698.39	
Suspense	6,425.63	
Uniforms	386.32	
Sundries	....	
Unexpired insurance	1,469.25	
		62,499.39
Injuries and damages	$ 3,394.71	
Reconstruction	3,969.87	
		7,364.58
		$1,217,394.87

LIABILITIES.

	1910.	
Capital stock	$ 552,000.00	
Bonds (due Mar. 8, 1925)	575,000.00	
		$1,127,000.00

ACCRUED LIABILITIES.

Bond interest	$ 8,986.75	
		8,986.75

CURRENT LIABILITIES.

Accounts and wages payable	$ 16,429.08	
Dividend payable Jan. 3	16,560.00	
		32,989.08

RESERVES.

Ticket float — (unredeemed tickets	$ 10,882.98	
Profit and loss	37,536.06	
		48,419.04
		$1,217,394.87

PROFIT AND LOSS ACCOUNT.

Surplus Jan. 1, 1910	$26,757.48
Unclaimed wages, 1909	11.78
Net income for 1910	46,336.80
	$72,106.06
Dividends 6%	$16,560.00
Directors' and auditors' fees	1,450.00
Surplus	37,536.06
	$72,106.06

STATISTICAL STATEMENT.

	1910.	1909.
Gross earnings	$ 256,278.48	$ 243,359.39
Operating expenses	182,191.68	169,830.44
Expenses per cent. of earnings	71.0	69.8
Net earnings	74,086.80	73,528.95
Net income per cent. of capital	8.21	8.08
Passengers carried	6,930,602	6,673,709
Car earnings per revenue passenger	3.67c.	3.62c.
Transfers	1,063,531	1,015,564
Total passengers	7,991,133	7,688,873
Car earnings per passenger	3.13c.	3.09c.
Car mileage	1,418,030	1,422,223
Gross earnings per car mile	18.07c.	17.11c.
Operating expenses per car mile	12.84c.	11.94c.
Net earnings per car mile	5.23c.	5.17c.
Miles of track	33.25	33.25
Gross earnings per mile of track	$ 7,707.60	$ 7,319.07

Following is the board for the current year: President, H. A. Everett, Cleveland, O.; Vice President, T. H. Smallman, London, Ont.;. other directors, P. W. D. Broderick, W. M. Spencer, London, Ont.; H. S. Holt, Montreal; E. W. Moore and C. W. Wason, Cleveland, O.

◆

The Street Car Situation in Toronto.

The Ontario Railway and Municipal Board on Feb. 6, on the application of the city reversed its approval of the pay-as-you-enter system on the company's cars, the order stating that on the report of J. F. H. Wyse, consulting engineer, and D. M. Campbell, manager Preston Car & Coach Co., the sanction of the company's bylaw 36 respecting closed motor and trailer cars was rescinded. The city's application for an order that the company discontinue the use of trailer cars and build the motor cars with compartments for smokers, was dismissed.

In the case of the city against the Toronto Ry. Co., charging the latter with maintaining a common nuisance, which was fully explained in our last issue, the jury did not agree and on Feb. 14, Mr. Justice Riddell gave the following judgment: The defendants raised several objections: (1) That the court has no jurisdiction. This whole objection is unsound in essence. The Provincial Legislature has not formed a new court for the trial of nuisances. The Ontario Railway and Municipal Board is not a criminal court. Not only may but must these cases be tried according to the provisions of the code and the Board has neither jurisdiction in nor machinery for such trial. (2) As to the demurrer. The demurrer could not be allowed, but it remained open for the defendants under the plea of not guilty to contend that no duty such as contended for had been made out upon the law by the evidence adduced. (3) As to overcrowding, each member of the public is entitled to enjoy to the full, each of the rights of the public, and without legislative enactment you can no more interfere with one right and justify by alleging a benefit to another in the case of rights vested in the public than in the case of rights vested in private individuals. Count 6 as objected to was properly triable in this court. As to the legal duty of defendants not to endanger human life and the argument that sec. 247 of the code does not apply. This is not a duty imposed by the code, but any legal duty, however imposed—by the common law, statute, or perhaps contract. As to the fenders approved by the Board: No provision was made for trailers, and these have no safety device. The jurisdiction of the Board does not extend to trailers. I think it was open to the jury to find that the defendants in not applying any safety device to their trailers were guilty of an omission to take reasonable care and precautions, etc. I shall reserve a case for the Court of Appeal upon the many matters I have discussed, and if there be any matters I have not reserved I may be spoken to again.

W. K. McNaught, M.P.P. for North Toronto, has introduced a bill in the Ontario Legislature to amend the Ontario Railway Act, by adding the following, as sec. 214a:

What is known as the pay as you enter system of collecting fares shall not be operated on any street railway car unless such car complies with the following requirements:

It must have a rear platform at least 72 ins. deep with a folding step not less than 54 ins. long.

The rear platform must be enclosed and properly heated, and provided with a door or doors having an aggregate width of at least 54 ins., so arranged as to permit of the entrance and exit of passengers at one and the same time.

If there is a partition between the rear platform and the body of the car such partition must have doors or openings so arranged as to permit of the entrance and exit of passengers at one and the same time.

The front platform must be enclosed and properly heated. It shall be provided with an exit door at least 30 ins. wide and a folding step of the same width. If there is a partition between this platform and the body of the car, it must be provided with an exit door or opening not less than 30 ins. wide.

This section shall apply to cities only having a population of 100,000 or over.

Every person who violates the provisions of this section shall, on summary conviction therefor, incur a penalty of $100 per day for each car operated contrary to the provisions of this section.

◆

Ottawa Electric Railway Co.'s Report.

Following are extracts from the report for 1910, presented at the annual meeting, Feb. 6:—

The gross earnings were $748,708.75, compared with $677,357.11 in 1909, an increase of $71,351.64; 16,967,334 passengers were carried, compared with 14,983,799, and with 1,520,405 in the first year of the company's operations. The net earnings were $277,229.11, and dividends amounting to 12% were paid. The net earnings were disposed of as follows:—Interest paid on bond and loans, $34,288.79; four quarterly dividends of 2½% and a bonus of 2%, $149,724; mileage payments, $13,583.39; taxes, $8,673.74; placed to credit of contingent account to be applied to reduction of track renewal, car equipment, and other accounts, $41,000; transferred to credit of profit and loss account, $29,959.19.

Work on the new power house was commenced last fall. Waterwheels and a 2,000 h.p. generator are being installed, which will be completed early next summer. This will give double the present power capacity. We have also under order 18 double truck p.a.y.e. cars,

---

City of Toronto Civic Car Lines.

TENDERS FOR RAILS AND TIES.

Tenders will be received by registered post only, addressed to the Chairman of the Board of Control, City Hall, Toronto, Canada, up to noon on Tuesday, April 4th, 1911, for delivery of Thirteen hundred and forty (1,340) tons of open hearth steel rail, No. 80 section, also thirty thousand (30,000) untreated wood ties, white cedar preferred, although other woods will be considered.

Envelopes containing tender must be plainly marked on the outside as to contents.

Specifications and forms of tender may be obtained upon application to the office of the City Engineer, Toronto.

The lowest or any tender not necessarily accepted.

G. R. GEARY, Mayor,
Chairman Board of Control.
City Hall, Toronto, February 23, 1911.

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nine of which will be delivered next month. With these improvements and additions the company will be in a position to handle the rapidly increasing business, which has almost doubled in the past six years. The rolling stock and other properties have been efficiently maintained, and altogether the position and prospects of the company are better than ever.

ASSETS.

Roadbed and equipment, water power property and plant, real estate and buildings	$2,393,591.19
Cash	10,437.14
Accounts receivable	5,993.51
Stores	6,528.02
Insurance paid in advance	5,200.00
	$2.421 749.86

LIABILITIES.

Capital stock	$1.247 700.00
First mortgage, 4% bonds	500 000.00
Dividend payable Jan. 2, 1911 ..	56.146.50
Interest on bonds, payable Jan.. 5, 1911	10,000.00
Unpaid dividends	390.67
Pay list to Dec. 31, 1910	12,303.56
Bills payable	250,000.00
Accounts payable	27,250.00
Contingent account	41,000.00
Rest account	200,000.00
Profit and loss account	76,959.19
	$2 421,749.86

PROFIT AND LOSS ACCOUNT.

Balance at credit of Profit and loss, Dec. 31, 1909	$47,000.00
Net earnings, 1910	277,229.11
	$324,229.11
Dividends and bonus	$149 724.00
Taxes	8,673.74
Mileage payments	13,583.39
Interest on bonds and loans	34,288.79
Contingent account	41,000.00
Balance at credit, Dec. 31, 1910 ...	76,959.19
	$324,229.11

Following is the board for the current year: President, T. Ahearn; Vice President, W. Y. Soper; other directors, P. Whelen, G. P. Brophy, Hon. G. A. Cox, T. Workman.

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Nelson Street Railway Co's Report.

The annual meeting was held at Nelson, B.C., Feb. 6. The report showed that the operating expenses during the 23 days during which the cars were running, were $1,000.13, and the receipts $662.50. The President, J. E. Taylor, said that the extension had cost $21,191, against an estimate of $16,000; repairs to the old track had cost over $3,000, as compared with an estimate of $1,000; the rolling stock had cost $14,250, against an estimate of $11,500, and the car barns and machine shop $28,000, against an estimate of $25,000. The substation and generator, the cost of which had been estimated at $11,000, had, however, only cost $8,898. The estimated receipts from the two cars operated were $50, with the addition of $2 for advertising each day, giving a total of $1,560 a month, and the operating expenses were estimated at $1,412.67 a month, leaving an estimated surplus each month of $247.33, and allowing 5% dividend on the stock already issued and the further amount necessary to thoroughly equip the system, there would be a balance of $1,117.96 to be placed to the sinking fund each year. The following were elected directors for the current year:—G. W. McBride, W. R. McLean, J. E. Taylor, R. A. Brown, A. Carrie, A. Jeffs, M. R. McQuarrie, W. H. Douche, A. S Horswill, and S. M. Brydges.

◆

The Sherbrooke St. Ry. has received two 18½ ft. car bodies, 30 ft. long over all, mounted on 27-E trucks equipped with Westinghouse 101-B-2 motors, from the Ottawa Car Co., Ottawa.

Electric Ry., Finance, Meetings, Etc.

British Columbia Electric Ry.—Gross earnings for Dec. 1910, $389,234; working expenses $224,549; net operating earnings $164,685; renewal funds $25,417; net earnings $139,268; approximate income from investments $20,000; net income $159,268, against $269,179 gross earnings; $151,522 working expenses; $117,657 net operating earnings; $17,833 renewal funds; $99,824 net earnings; $16,500 approximate income from investments; $116,324 net income for Dec. 1909. Aggregate gross earnings for six months ended Dec. 31, 1910, $1,991,648; net earnings $829,896, against $1,480,871 gross and $657,366 net for same period 1909.

Calgary Municipal St. Ry.—Passenger earnings for Jan. $19,524.16; miscellaneous earnings $354.66; total earnings $19,878.82; operating expenses $13,409.86; net operating revenue $6,468.96; contingent account $993.94; interest and sinking fund $2,715.88; net profits $2,759.14, against $11,375.60 passenger earnings; $189 miscellaneous earnings; $11,564.60 total earnings; $8,762.02 operating expenses; $2,802.58 net operating revenue; $578.23 contingent account; $2,715.88 interest and sinking fund; $491.53 deficit for Jan. 1910.

Dominion Power and Transmission Co.—Recent press reports stated that a British syndicate was in negotiation with certain interests for the purpose of securing the control of the company, but it was said that nothing was known officially about the matter.

Halifax Electric Tramway.—Railway traffic receipts for Jan., $16,380.69 and for two weeks ended Feb. 14. $7,478.23, against $15,510.09 and $6,913.26 for same periods 1910.

The directors decided Feb. 14, to increase the dividend from 7 to 8%, to commence with the current year.

London St. Ry.—Gross earnings for Jan., $20,596.43; expenses $15,182.50; net earnings $5,413.93; deductions $2,441.75; net income $2,972.18, against $18,363.71 gross earnings; $13,578.22 expenses; $4,785.40 net earnings; $2,441,75 deductions; $2,343.74 net income for Jan. 1910.

Montreal Street Ry.—Press reports state that the Toronto General Trusts Corporation recently asked shareholders to give it a 60-day option on their stock at 235, on behalf of a client who wanted to acquire a large number.

Application is being made to the Quebec Legislature for authority to increase the number of directors to 15 if deemed advisable.

Port Arthur and Fort William Electric Ry.—Gross earnings for year ended Dec. 31, 1910, are reported to have been $141,580.37 and operating expenses $83,430.38, leaving $58,150.19 as net earnings.

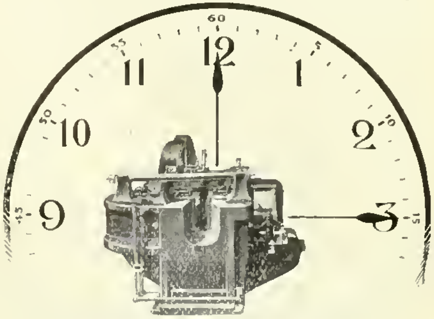
St. Thomas St. Ry.—The report for the year 1910, presented to the city council recently, showed that the number of passengers carried, decreased by 86,865, as compared with the previous year, while the deficit for the years operations was $12,944.44 which was $3,721.84 greater than for 1909.

Toronto Ry.—The percentage paid to the city for Jan., was $43,485.65, on gross receipts of $362,380.40, against $37,704.10 percentage on earnings or $331,346.65 for Jan., 1910.

Winnipeg Electric Ry.—Gross earnings for Dec. 1910, $340,281; expenses $177,754; net earnings, $162,527, against $283,528 gross earnings; $151,908 expenses; $131,620 net earnings for Dec., 1909. Aggregate gross earnings for 12 months ended Dec. 31, 1910, $6,284,341; net earnings, $1,629,508, against $2,623,731 gross and $1,303,066 net for same period 1909.

The company is applying to the Manitoba Legislature for the ratification of the amalgamation agreement between it and the Winnipeg Power Co., the Manitoba Electric and Gas Light Co., and the North West Electric Co., and other companies, and confirming the transfer of assets, etc.

The Time Has Now Come



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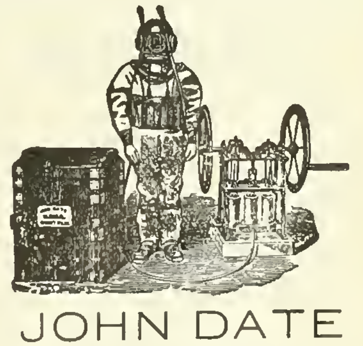

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NORTH AMERICAN LIFE

FINE RECORD FOR 1910

The Thirtieth Annual Meeting of the North American Life Assurance Company was held at its Home Office in Toronto, on Thursday, Jan. 26, 1911, when the report of the business for the year ended December 31, 1910, was presented.

CASH INCOME

The Cash Income for the year in premiums, interest, etc., was $2,177,012.61, showing the satisfactory increase of $147,134.91.

CONSERVATIVE MANAGEMENT

The business continues to be conducted on a conservative and economical basis, the North American Life being among the foremost in this regard.

PAYMENTS TO POLICYHOLDFRS

The amount paid on Policyholders' Account was $877,792.31, of which sum $142,764.06 was for surplus or dividends. Considering that the sum of $6,000 only was paid to Guarantors, the preponderance of the Policyholders' interest is apparent.

The large amount of $480,707.85, including surplus and guaranteed reserve, was paid to holders of Deferred Dividend policies.

ASSETS

The assets increased by $898,308.42, and now amount to $11,388,773.32.

They continue to be, as heretofore, invested in the best class of securities available, principally in Mortgage Loans and Bonds.

SURPLUS

After making ample provision for all liabilities and further strengthening the reserves, the net surplus on policyholders' account was increased to $1,171,768.68.

INSURANCES INCREASED

The policies issued during the year together with those revived, amounted to the sum of $5,106,047, being an increase over the previous year. The total business in force amounts to $43,391,236.

AUDIT

A careful and systematic audit was made every month by the Auditors, who also made a thorough scrutiny of all the securities of the Company. In addition a Committee consisting of two Directors made an independent audit of the securities each quarter

L. GOLDMAN, Managing Director. **J L. BLAIKIE,** President.

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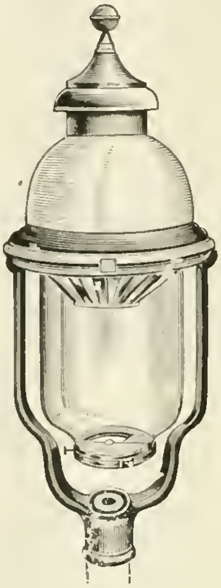

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- Water Gauges
- Boiler Washer and Filler
- Lubricators
- Whistles
- Blower Valves
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MARINE DEPARTMENT

Dominion Marine Association.

President, F. Plummer, Toronto; Counsel, F. King, Kingston, Ont.

Great Lakes and St. Lawrence River Rate Committee.

Chairman, E. E. Horsey, Kingston, Ont.
Secretary, Jas. Morrison, Montreal.

International Water Lines Passenger Association.

President, W. M. Lowrie, New York.
Secretary, M. R. Nelson, New York.

The Shipping Federation of Canada.

President, A. A. Allen, Montreal; Manager and Secretary, T. Robb, 526 Board of Trade, Montreal.

Ship Masters' Association of Canada.

Grand Master, Capt. J. H. McMaugh, Toronto, Ont.; Grand Secretary-Treasurer, Capt. H O. Jackson, 376 Huron St., Toronto.

◆

Canadian Lake Protective Association.

As announced in the Dominion Marine Association's annual report (Railway and Marine World, Feb., pg. 181), the vessel owners comprising that Association, decided to withdraw from the Great Lakes Protective Association, and have formed the Canadian Lake Protective Association, of which the following companies have already become members:—St. Lawrence & Chicago Steam Navigation Co., Canadian Lake Transportation Co., Montreal Transportation Co., Mutual Steamship Co., Merchants Mutual Line, Canadian Lake & Ocean Nav. Co., Keystone Transportation Co., Farrar Transportation Co., International S.S. Co., Interlake Transit, Ltd.; Point Anne Quarries, Ltd., Inland Lines, Ltd., Northern Nav. Co., Mathews S.S. Co., Canadian Northwest S.S. Co., Western S.S. Co. Several other companies have signified their intention of joining, and others again have the matter under consideration.

The agreement among the vessel owners provides that the chief purposes of the Association shall be to formulate rules designed to render careful navigation absolutely obligatory on the part of the master of every vessel owned or managed in the Association, which rules shall be effective upon their adoption, or amendment and adoption, at a general meeting of the subscribers. To enforce the rules, and to take such measures as may be possible to render the suspension or the cancellation of the master's license the certain penalty for every proved breach of the same, or for any other flagrant act improperly imperilling the safety of his vessel. To examine into all marine disasters affecting vessels owned or managed in the Association, and to see that penalties are imposed in all proper cases. To aid also in every possible way in a movement to decrease the risks of navigation, by disseminating information, by invoking government assistance, and obtaining where necessary additional aids to navigation and improvements in ship channels; and generally to take measures to lessen the chance of disasters on the waters named and thus to render the vessels owned or managed in the Association a better and more desirable class of underwriting risks. To take any other steps possible to decrease the cost of insurance upon vessels.

A committee of five shall be appointed for the purpose of investigating disasters, framing and enforcing the rules and imposing penalties whenever proper, and for the purpose generally of taking action from time to time in all matters within the Association's scope. The members of the committee shall hold office until their successors are appointed, and the first committee shall consist of the President of the Dominion Marine Association, and J. W. Norcross, W. H. Featherstonhaugh, S. Crangle, and R. Fraser. A new committee shall be appointed at each annual general meeting and the retiring members shall be eligible for re-election. No member of the committee shall act on any investigation relating to a vessel in which he is in any way interested, and in any such case the committee may appoint a substitute to act in place of such member. Each member of the committee shall receive his actual expenses incurred in attending meetings of the committee, and also a per diem allowance of $5 for each day the committee is in session.

No member shall be entitled to vote at any meetings unless he has complied with all the rulings of the executive committee and all the terms of the agreement, including the provisions respecting the payment of dues. The subscribers shall pay into the treasury a sum equivalent to 2½c. for each ton of net registered tonnage of vessel property, owned or managed by him, which payment shall cover the assessment of such member for the year ending Dec. 31, 1911, unless at the next annual general meeting it be found necessary and be decided to levy a further assessment in respect of this first period; and the rate per ton of the said assessment for each following year shall be fixed at each annual general meeting on the recommendation of the said committee.

Each owner or manager shall, in making contracts with his masters, incorporate any navigating rules adopted by the Association, and have the master sign the rules and agree to abide by them.

Rules for Masters of Vessels.

1. All signals prescribed in the "Rules of the Road" must be given without fail, and these Rules, as well as those governing the Dominion canals, must be at all times strictly observed.

2. It is imperative, however, that when it appears that the master of the other vessel is ignoring a rule, and that your adherence to the special rule applicable would lead to an accident, you must take such steps as will avoid an accident, and promptly report the action of the offending master to the chairman of the committee of the Association, who will deal with the case.

3. In fog, smoke or falling snow, it is absolutely forbidden to run the rivers or enter narrow waters at night, or to run in narrow waters in daylight when you cannot see far enough ahead to be able with certainty to keep your steamer in safe water.

4. You must not attempt to pass a steamer ahead in narrow waters without asking and receiving permission, and then only when you can pass in perfect safety.

5. Do not consent to another steamer passing you in the same direction until you are satisfied this can be done safely, and until this can be done safely blow a danger signal, and repeat it if the other vessel persists in coming on, and do all you can to avoid collision. After permission is given, check your steamer until the other is past and clear.

6. In all narrow waters, and in fog, smoke or falling snow, and under all difficult circumstances, the master must be on the bridge when the steamer is under way.

7. The compasses must be checked at every opportunity by solar observations and river and shore ranges.

8. The steering gear must be overhauled before leaving port every trip, and kept in perfect order.

9. In canals and harbors the vessel must only be moved with the greatest caution, and kept going dead slow and under perfect control at all times.

10. The master shall see that a watchman is on duty, in the proper station, at all times between sunset and sunrise, in all thick or foggy weather, and in all narrow waters, excepting only the canals.

11. The master must see that all shifting boards are in place when carrying grain, and that hatch covers and tarpaulins are properly secured after loading. Where vessels have no shifting boards, owners are to fit them whenever necessary.

12. The use of intoxicating liquors on board steamer is absolutely forbidden, and any officer violating this rule must be discharged by the master on first offence.

13. Every master must keep himself advised of the changes of depths of water in harbors and the shallow portions of the rivers, and avoid loading beyond safe draught.

14. Every master shall report every accident which affects his steamer to the chairman of the said committee, on blanks to be furnished.

15. Any violation of the foregoing rules or of amendments thereof, if established to the satisfaction of the committee, or any accident to the steamers in the Association, which, in the judgment of the committee could have been avoided by the exercise of reasonable care, caution or good seamanship, will be followed by dismissal of the master by the owner, provided that upon any investigation by the committee the master shall have full opportunity to defend himself.

Rules for Engineers of Vessels.

1. The chief engineer will be engaged by the manager, but must engage a competent staff, for whom he will be responsible.

2. He will have supervision over all the machinery, boilers and piping on the ship and must keep the same in efficient order. This includes all pumping and heating arrangements, deck and steering machinery. He will also make all necessary repairs to the hull which can be made with the facilities at his command in order to keep the ship seaworthy.

3. He must particularly look after the telegraph and whistles and their pulls, and see that they are at all times in perfect order.

4. He must also examine the steering gear daily, and particularly each trip before leaving port, and see that everything is in perfect order, as the safety of the ship depends on this often more than on the main engines. The chains, cables, etc., must be carefully examined, and when links show appreciable wear new chains must be put on and the worn section removed and replaced by new. When perfect links break or fracture, the chain must be discarded.

5. He must not leave the handling of engines, in canals or ports, or in making docks, to oilers or firemen; and either chief or second engineer, which-

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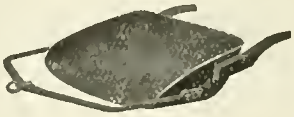

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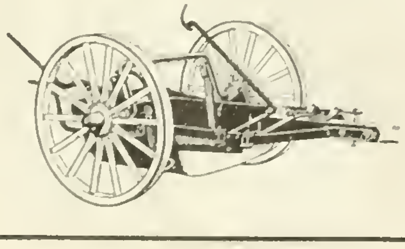

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Sailing from New York Saturdays.
N.Y.—Plymouth—Cherbourg—Southampton
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ever is on watch, must always be by the handling levers when the ship is manœuvring.

6. He must see that all orders given by the master for handling of the machinery are promptly and efficiently obeyed, and in case of any accident to any of the machinery, which may delay or endanger the safety of the ship, he will immediately notify the master and co-operate in the necessary steps taken to guard the safety of the vessel.

7. When it is necessary to make any repairs which necessitate stopping the ship, he will consult with the master before doing so and arrange for the necessary time with the least possible delay or danger to the ship.

8. In case the master overlooks advising him, he will inquire of the master as to the likely time of sailing, and be ready in ample time; and the master will ring the "Stand by" on the telegraph a sufficiently long time before lines will be thrown off to give the engineer a chance to have everything ready to sail.

9. No dispute of the master's orders will be allowed. If he considers the master is giving unreasonable orders, he will report this promptly to the manager, who will deal with it. But, as the safety of the ship may be in danger, every order of the master must be obeyed at once when given.

10. He shall arrange with the master some signal which can be instantly transmitted to the bridge by telegraph in case of accident to the machinery, whether it is to steering gear or propelling power so that the master can immediately take steps to protect the ship.

11. The use of intoxicating liquors on board ship is strictly forbidden, and the chief engineer will co-operate with the master in enforcing this rule, and any man breaking this rule must be discharged. He will also enforce discipline with his staff and endeavor to have them show courtesy at all times to every one with whom they may come in contact.

12. Any violation of the foregoing rules, or of amendments thereof, by a chief engineer, if established to the satisfaction of the committee of the Association, will be followed by dismissal of the engineer, and his conduct will be reported to the chairman of the Board of Steamboat Inspection, provided that upon any investigation by the committee the engineer shall have full opportunity to defend himself.

◆

A Government bill is under consideration in the Dominion Parliament to amend the Telegraphs Act by providing that all vessels carrying more than 50 passengers except those plying between ports not more than 200 miles distant from each other. must be equipped with wireless telegraph apparatus

During Dec. 1910, 26 employes were killed and three injured in the course of their work in connection with the navigation of Canadian waters. Of the fatalities, 21 occurred in connection with the foundering of the s.s. St Denis off the coast of Vancouver Island, two were due to drowning, and one each to machinery, to being run over, and to a fall, while of the other acicdents. two were due to falls, and one to an explosion.

The Canadian Waterways Improvement Co., Ltd., has been incorporated under the Ontario Companies Act, with a capital of $50,000, and office at Port Burwell, to carry on a dredging and construction business, for the erection of buildings, machinery, railways, bridges, piers, breakwaters, masonry and other structures. The provisional directors are F. W. Fay, L. Lewis, G. A Van Order, D. F. Williams and F. W. Young, Port Burwell.

Aids to Navigation on the St. Lawrence and the Great Lakes.

Following is the report of the committee on aids to navigation presented at the Dominion Marine Association's annual meeting recently:—

The committee held two meetings in 1910, but its work has been supplemented by the proceedings of the executive and of the grain section of the Association, both of which committees have in many cases undertaken to deal with matters requiring attention from time to time rather than refer them to the committee having jurisdiction. Doubtless this has been wise in some cases for delay has thus been prevented. The usual list of recommendations for the Light House Board was considered and prepared at the committee's first meeting, and correspondence and interviews regarding its items and regarding the later recommendations of the committee have been carried on throughout the year by the officers. The general list of recommendations prepared by selection and revision in April last may be summarized as follows:—

The early erection of the Michipicoten light.

The retention of the Myles buoy (red) light in Kingston harbor.

The retention of the gas buoy near Lachine Wharf which the Board proposed to remove.

The early erection of the promised ranges marking the entrance to the outer harbor at Kingston.

The lighting of the Murray canal.

The improvement of Brighton entrance inside of Salt Point.

The placing of a gas buoy at the turn from the range line to the line of the canal in Brighton bay.

The placing of a gas buoy to mark the end of the shoal east of Indian Island near Trenton; or the removal of the gas buoy marking the entrance to Trenton so as to make it serve the double purpose.

The early completion of the work on Telegraph channel, in the Bay of Quinte.

Lights between Smiths Falls and Merrickville on the Rideau canal, and in Mud Lake near Newboro, according to plans of the Superintending Engineer of the canal.

A range on Centre Island bank; north shore of Lake Huron.

A lighted whistling gas buoy, instead of whistling buoy only, on Bad Neighbor shoal.

Alteration of the lights at the eastern entrance of Toronto harbor, to make them effective as ranges.

Distinguishing tops on all port and starboard buoys.

Of these recommendations many will require the continued attention of the committee, and it is recommended that the list be kept in view in framing a petition to the Light House Board in 1911.

At the meeting of the committee in November last special consideration was given to the question of the preservation and improvement of the Rideau canal, with special regard to its utility in the transportation of freight and passengers from Lake Ontario and its ports, to the Ottawa River and Montreal. The committee appointed delegates to join a deputation to the Minister, and is pleased to report the success of that deputation.

The developing trade in the Bay of Quinte was also the subject of special discussion, and the recommendations already made for additional lights and dredging, and for the early completion of works already undertaken in these waters, were strongly endorsed, and correspondence has been had with the proper authorities to give effect to these resolutions.

At its first meeting the committee had refused to endorse a petition from the Lake Ontario Coal Carriers' Association for a light on the Main Duck in Lake Ontario, but in November, on the suggestion of the Light House Board that it might be advisable to move the light from the False Duck to the Main Island, the committee protested against such action, and without urging the erection of the light on the Main island, asked that if a light is placed there it should be placed in such a location as to serve the traffic up and down the lake as well as the parties asking for its erection. The Board points out that on account of recent soundings and discovery of more shoal water between the islands than was indicated on the charts, vessels of deep draft which will come down Lake Ontario through a new Welland Canal will require to keep over well towards the Main Duck.

The committee particularly urged the provision of men at the canal entrances on the St. Lawrence to take lines from approaching vessels. The matter is referred to in the executive committee's report, and the failure of the Department to carry out the recommendations of the late Chief Engineer, to say nothing of the additional recommendations of the Association, is there noted. The next committee on aids to navigation should devote special attention to an effort to procure this very necessary assistance.

The committee also protested against the development of power in the St. Lawrence River to the prejudice of navigation interests and endorsed the proceedings taken against the application of the Canadian Light & Power Co.

The improvement of various canal entrances and the strengthening of the banks of the Soulanges canal by concrete walls in certain locations, as well as other minor improvements in the system, were also considered by the committee, and some of the recommendations in the report of the executive committee are identical with those of this committee.

The committee asked that the gas and bell buoy lost from Niagara shoal should be replaced at the opening of navigation in 1911, and is pleased to be able to report that this will be done.

Mention may be made of the fact that your counsel has been nominated as the Association's representative on the Light House Board of Canada, and it may be hoped that when the appointment is made the consideration of the prayers of this Association in the light of the information which prompted them will be at least facilitated.

◆

Farrar Transportation Company.

The report for the year 1910 presented at the annual meeting at Collingwood, Ont., Jan. 31, showed that the gross earnings of the two steamers were $104,140.52, and operating expenses. $68,517, leaving a net balance of $35,622.98. The assets are placed at $438,444.30, the steamers valued at $404,495, being the chief item. The liabilities, besides the capital stock, are $121,175, leaving net balance of assets over liabilities of $67,368.

Following are the directors for the current year:—President, T. I. Thompson, Owen Sound; Vice President, E. M. Wayland, Fort William; Secretary-Treasurer and Managing Director, G. E. Fair, Collingwood; other directors, D. D. Lewis, W. E. Allen, E. Stubbs, G. P. Pearsall, M. Snetsinger, Dr. Shultis, W. T. Toner.

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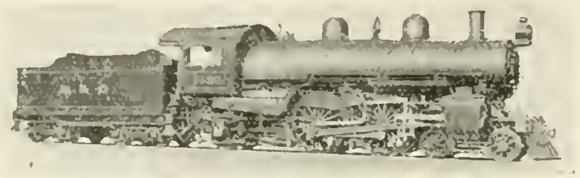

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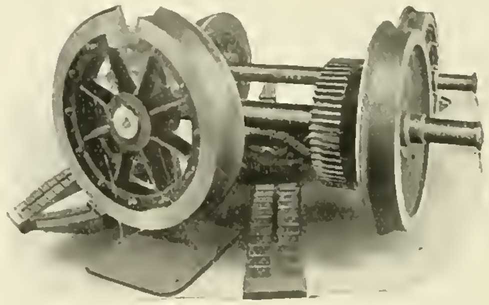

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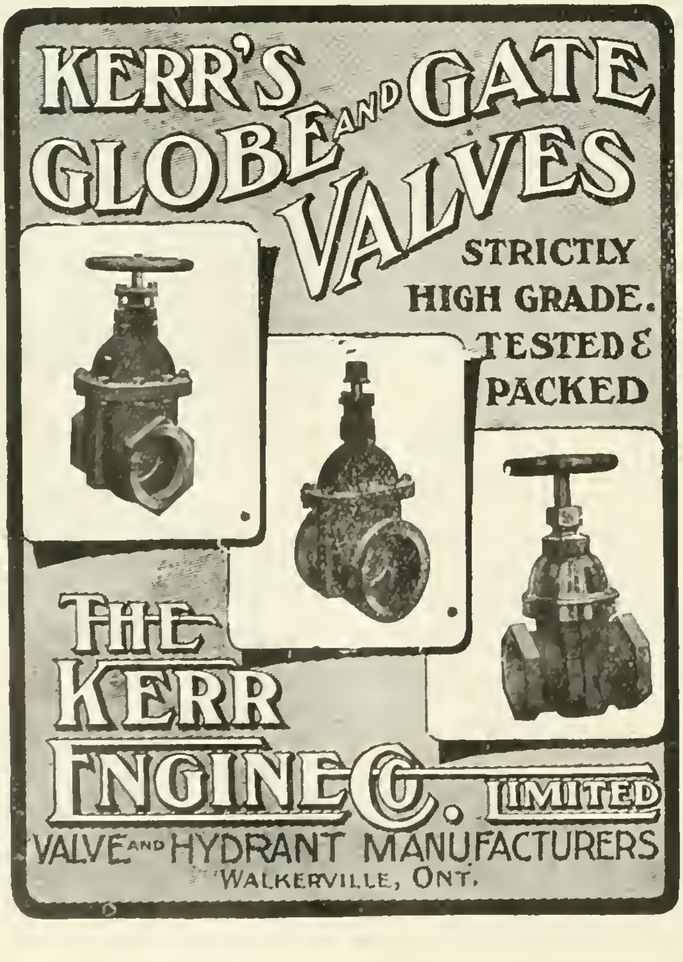

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LAKE GRAIN SHIPMENTS, 1910 CROP.

The following statement, prepared by F. E. Gibbs, Grain Inspector, Fort William, Ont., shows the grain carried by individual vessels, Canadian and foreign, from Fort William and Port Arthur, during the season of navigation, April 13 to December 6, 1910, and total shipments for the seasons 1910 and 1909. The last two figures in each column represent pounds.

Vessels.	Wheat.	Oats.	Barley.	Flax.	Screenings
Canadian—					
Athabasca	206, 48.50	150,199.32	....	....	....
Alberta	110,429.20	127,622.12	....	....	....
Assiniboia	193,992.20	76,988.08	....	....	....
Algonquin	825,592.20	402,017.21	21,195	33,323.26	....
Ames	230,476.30	191,755.27	17, 11.22	84,1 1.41	....
Arabian	251,370	40,000	....	....	....
Advance	249,688.30	....	....	....	....
Acadian	522,464	175,048.02	35,000	51,882.44	....
Beaverton	469,260	241,367.15	21,885.40	....	1,145.40
Bickerdike	502,934.50	134,292.32	17,410.06	....	....
Collingwood	821,664.10	71,058.21	....	....	....
Canadian	522,394.10	113,247.16	63,302.09	115,228.47	....
Corunna	254,936.30	152,810.15	12,850.34	....	....
Carleton	69,000	87,190.23	....	....	....
Crowe, G. R.	1,534,396.30	339,826.28	10,000	....	....
Derbyshire	....	90,000	....	....	....
Doric	773,907.50	442,614.20	....	37,189.10	....
Dundee	352,128.10	167,187.12	....	....	....
Dounacona	100,500	....	....	....	....
Dunelm	420,128.30	155,673.06	....	33,000	....
Edmonton	338,052.50	224,847.13	143,789.27	....	....
Emp. of Midland	691,406.40	30,360	....	....	....
Emp. of Ft. William	1,214,319.40	375,647.19	....	....	62,365.10
Fairmount	801,672.20	545,000	....	....	....
Gordon, D. A.	289,734.50	87,500	....	26,824.55	....
Glenellah	372,927	298,176.31	12,189.32	....	....
Glenmount	768,874.40	192,445	....	....	....
Huronic	16,000	10,000	6,000	....	....
Hamonic	216,000	....	....	....	....
Hamilton	65,000	....	....	....	....
Haddington	524,706.40	107,000	....	....	....
Jaques, C. A.	179,522.20	208,978.06	39,368.46	....	....
Iroquois	1,039,999.20	142,668.18	....	....	....
India	....	66,738.18	....	....	....
Ionic	289,853.10	43,075.30	72,205.38	150,498.04	....
Key-port	83,804.20	....	....	....	....
Key-west	85,050	....	....	....	....
Keewatin	463,834.30	193,481.04	25,000	....	....
Kaministiquia	997,300.50	675,587.25	....	....	145,623.40
Kenora	408,186.10	449,418.08	....	....	....
Kinmount	974,591.40	337,884.14	33,297.34	....	....
Leafield	78,000	....	....	....	....
Manitoba	170,172.40	86,233.20	....	....	....
Matthews, W. D.	1,674,577.30	312,000	....	....	....
Mapleton	296,291.30	299,098	65,005.41	27,473.51	....
Midland Prince	860,712.50	1,041,251.16	....	....	....
Midland King	768,000	....	....	....	....
Midland Queen	560,867.20	81,411.06	33,331	....	....
Meaford	210,000	....	....	....	....
McKee, J. A.	531,942.50	399,662.12	....	....	....
McKinstry, A. E.	299,888.30	146,080.04	....	....	....
Neepawah	358,336	158,000	9,139.38	....	....
Newona	1,796,328.40	508,848.22	....	....	....
Neebing	413,191	....	....	....	....
Nevada	217,990.30	223,821.08	....	....	....
Osler, E. B.	2,399,120.10	425,500	69,236.30	....	....
Plummer, J. H.	221,231.50	214,810.06	57,999.47	....	....
Pellatt, H. H.	248,151.40	137,613.02	....	25,031.37	....
Prince Rupert	202,095.30	137,800	....	....	....
Port Colborne	573,773.10	438,702.04	....	....	....
Quebec	66,000	....	....	....	....
Renvoyle	432,954.30	....	....	....	....
Regina	299,749.40	343,332.31	16,874.18	....	....
Rosedale	469,348.30	127,885.12	10,109.20	....	....
Rosemount	257,189.40	....	....	....	....
Seguin	152,810.10	273,409.04	....	....	....
Strathcona	....	140,000	....	....	....
Stormount	1,052,541	123,792.32	87,899.40	....	....
Simla	84,000	147,645.06	....	....	....
Scottish Hero	793,890.10	513,819.07	4,944.38	271,196.29	....
Saskatoon	307,927.20	105,916.08	....	....	....
Saronic	87,645.50	13,782.02	13,040.04	10,000	....
Turret Cape	1,079,086	212,000	....	....	....
Turret Chief	410,443.40	194,838	....	29,342.22	....
Turret Court	1,047,043.50	207,524.24	....	....	....
Turret Crown	469,861.40	....	....	37,361.52	....
Tagona	300,159.10	342,933.24	....	20,000	....
Ungava	528,489.10	32,000	22,942.35	....	....
Wahcondah	110,508.30	237,057.12	....	....	....
Westmount	960,223.10	185,066.24	59,523.33	....	....
Wexford	759,247.40	590,875.10	24,500	....	....
Winona	285,225.10	246,349.24	....	....	75,833.10
Wasaga	247,474.40	38,000	28,608.43	....	....
(Sacked oats)	....	30,000	....	....	....
Totals	40,115,640.40	15,864,771.14	1,104,664.03	952,524.26	284,967.40
Foreign—					
Armour, P. D.	95,000	....	....	....	....
Admiral	497,000	....	....	248,146.24	....
Barlum, J. J.	316,977.40	....	....	....	....
Bradley, M. A.	117,397.40	....	....	147,585.53	....
Boland, J. J.	300,000	....	....	....	....
Christopher	430,000	....	....	....	....
Colonel	139,564.50	....	....	65,000	....
Carnegie, A.	383,764	....	....	60,000	....
Carter, E. D.	315,000	....	....	....	....
Coulby, Harry	350,000	....	....	....	....
Cornelius, A. E.	155,000	....	116,997.29	....	....
Egan, W. M.	85,000	....	....	....	....
Fitzgerald, W. E.	242,000	....	....	....	....
Gilchrist, F. W.	262,151.50	....	....	179,001.39	....
Hecker, F. J.	285,304.10	....	....	....	....
Heffelfinger, F. T.	493,000	....	....	....	....

(Continued on page 2[illegible].)

The Lighthouse Board of Canada.

In accordance with the report of the Lighthouse Board of Canada, appointed by order in council, Feb. 26, 1904, to enquire and report to the Minister of Marine upon all matters assigned to him under sec. 833 of the Canada Shipping Act, an order in council has been passed with a view to increasing the efficiency of the Board, that it be reorganized as follows:

That in order to facilitate the consideration of matters submitted to the Board the undermentioned divisions be established:

Atlantic Division, comprising all the waters of Canada on the Atlantic coast, including Hudson Bay and as far inland as the head of ocean navigation;

Eastern Inland Division, comprising all the waters of Canada between Montreal and Port Arthur;

Pacific Division, comprising all the waters of Canada west of Port Arthur to the Pacific Coast.

That the following officers be appointed to the Board:

The Deputy Minister of Marine and Fisheries, Chairman;

The Chief Engineer of the Department of Marine and Fisheries;

The Wreck Commissioner and Officer-in-charge of Pilotage;

The Commissioner of Lights;

The President of the Shipping Federation of Canada as representative of the shipping interests in the Atlantic Division, the President of the Dominion Marine Association as representative of the shipping interests in the Inland Division.

Capt. J. W. Troup as representative of the shipping interests in the Pacific Division.

That in the absence of the Chief Engineer of the Department of Marine, the Assistant Chief Engineer be authorized to attend the meetings of the Board, and act as a member thereof; and that in the absence of the Commissioner of Lights the Assistant Commissioner of Lights be similarly authorized to attend and act.

That F. H. Houde, clerk in the Department of Marine be appointed Secretary of the Board.

That the members of the Board, other than officials of the Department of Marine, for whom provision in regard to travelling expenses already exists, be allowed their travelling expenses for attending meetings of the Board; and that in addition thereto such members be paid an honorarium of $5 a day each while attending the meetings, the day of departure from their homes and the day of departure from the place at which the Board holds the meetings to be considered as days in attendance for the payment of such honorarium.

That the following rules for the guidance of the Board be adopted:

A member of the Board representing the shipping interests of a division shall be entitled to vote only on matters affecting such division;

The Chairman shall vote as an ordinary member and also have a casting vote in case of a tie;

Three members of the Board, provided two of them are officers of the Department of Marine, shall form a quorum.

That the order in council of Feb. 26, 1904, constituting the Lighthouse Board originally, and all subsequent orders in council relating thereto to date, be cancelled.

◆

A bill respecting the pollution of navigable waters was read a second time in the Senate, Feb. 2. Provision is made for a penalty of $500 in the case of a corporation offending, with an addition of $50 for each day on which the offence is continued, and $50 with an addition of $10 a day in the case of individuals.

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Lake Grain Shipments, 1910 Crop—*(Continued from page 271.)*

Vessels.	Wheat.	Oats.	Barley.	Flax.	Screenings.
Hawgood, H. B. ..	235,000	....	....	....	....
Holmes, E. F.	....	....	....	239,258.12	....
Ireland, R. L.	....	....	....	241,282.38	....
Jenks, J. M.	450,000	....	....	....	....
Jupiter	130,923.20	....	....	57,100.10	....
Jenkins, C. C.	306,161.10	....	....	....	....
Kopp, J. T.	208,444.50	145,000.00	....	....	....
Kerr, D. G.	267,975.50	....	....	....	....
Lugon	182,982.10	....	....	....	....
Mack, W. H.	385,086.50	....	....	....	....
Miller, P. P.	191,000	....	....	....	....
Mitchell, Jno.	220,000	....	....	....	....
McKinney, Price ...	505,885	....	....	....	....
Nye, Harold B. ...	431,039.50	....	....	....	....
Oliver, H. W.	248,474	....	....	....	....
Peavey, G. W.	....	....	....	....	157,646.40
Peavey, F. H.	209,901	....	39,999.44	....	....
Rees, W. D.	415,788.50	....	....	....	....
Russell, G. L.	268,103.50	....	....	....	....
Steel King	432,999	....	....	....	....
Sills, H. S.	419,655.20	....	....	302,192.03	....
Sinaloa	722,233.50	....	....	....	....
Smith, H. W.	237,633.40	....	....	....	....
Smith, M. C.	229,074.20	....	....	....	....
Smith, H. B.	338,000	....	....	....	....
Smith, L. C.	573,090	....	....	....	....
Sierra	183,101.50	....	....	60,000	....
Senator	208,000	....	....	....	....
Sahara	286,000	....	....	....	....
Saunders, E. N. ...	109,252	....	63,478.26	43,667.09	....
Sultana	179,109	....	....	....	....
Sonoma	176,000	....	....	60,000	....
Stanton, Jno.	....	....	....	79,951.11	....
Stadacona	207,506.20	81,270.07	60,977.34	....	....
Squires, F. B.	404,296.50	....	....	53,384.55	....
Truesdale, W. H. ..	65,000	....	214,214.06	....	....
Uganda	107,000	....	....	....	....
Wisconsin	247,032.20	....	....	....	....
Woodruff, L.	185,679.40	....	....	55,644.21	....
Western Star	478,076.20	....	....	....	....
Wells, F. B.	403,734.40	154,124.24	....	6,662.48	144,944.50
Weeks, J. L.	....	....	....	239,315.47	....
Walker, P. G.	238,957.20	....	....	....	....
Walsh, G. P.	422,000	99,235.14	....	....	....
Yates, Harry	340,000	....	....	....	....
Zimmerman, E.	303,440.40	....	....	....	....
Totals Foreign (to foreign ports)	16,640,800.00	479,630.11	495,667.43	2,138,193.34	302,591.30
Canadian	40,115,640.40	15,864,771.14	1,104,664.03	952,524.26	284,967.40
Total, 1910	56,756,440.40	16,344,401.25	1,600,331.46	3,090,718.04	587,559.10
Canadian Vessels—					
Canadian ports ...	38,343,487.30	15,481,822.24	1,041,698.41	471,564.10	....
Foreign ports	1,772,153.10	382,948.24	62,965.10	480,960.16	284 967.40
	40,115,640.40	15,864,771.14	1,104,664.03	952,524.26	284,967.40
1909.					
Canadian	40,610,244.30	15,022,801.24	1,903,516.09	1,625,565.45	....
Foreign (to foreign ports)	15,972,859.50	818,709.10	451,185.04	1,468,061.45	....
Total, 1909	56,583,104.20	15,841,511	2,354,701.13	3,093,627.34	....
Canadian Vessels—					
Canadian ports ..	37,282,003.20	14,694,653.26	1,629,273.43	1,085,115.47	....
Foreign ports	3,328,241.10	328,147.32	274,242.14	540,449.54	....
	40,610,244.30	15,022,801.24	1,903,516.09	1,625,565.45	....

Richelieu and Ontario Navigation Co.

Following are extracts from the report for the year 1910, presented at the shareholders' annual meeting in Montreal, Feb. 13.—

	1910.	1909.
Gross receipts	$1,437,931.42	$1,238,044.31
Operating expenses	1,016,233.23	932,918.47
Fixed charges, interest, etc.	58,582.50	47,563.55
Net profit	$ 363,115.69	$ 257,562.29
Increase	$ 105,553.40	

Four quarterly dividends of 1¼% were paid, aggregating $164,430.

The new steamboat, Rapids Prince, for the rapids division, was completed and delivered in Sept. The new steamboat Rochester, operated by the R. & O.N. Co. of the United States (which company you control) had a successful initial season, and has strengthened your position in the Lake Ontario and Thousand Island trade. Continuing the company's policy of expansion, your directors have ordered a large modern twin-screw passenger and freight steamer for the Saguenay division. This vessel is now being built on the Clyde, to be delivered at Sorel, Que., for the tourist season of 1911.

The insurance fund has been credited with $61,000.00 out of the year's earnings and $229,140.95 now stands to the credit of this account. This reserve fund is in addition to the insurance carried with insurance companies on shore properties, steamers, etc. During the year $22,873.33 of the outstanding debentures were redeemed and cancelled in accordance with the deed of trust.

Including the one building the company has 21 boats, with 36,713 tons aggregate tonnage.

Assets.

Steamers, real estate and buildings, docks, wharves, etc.		$4,774,019.48
Accounts receivable ......$	99,883.92	
Coal stores, provisions, etc.	79,402.90	
		179,286.82
Insurance fund investment..........		155,280.91
		$5,108,587.21

Liabilities.

Capital stock		$3,132,000.00
Bonds 5% sterling	$1,216,666.66	
Less cancelled	55,966.66	
		1,160,700.00
		$4,292,700.00
Accounts payable ....$	103,758.84	
Bank loans	72,018.73	
Unclaimed dividends	159.00	
Accrued fixed charges	19,345.00	
		195,281.57
Insurance fund		229,140.95
Surplus		391,464.69
		$5,108,587.21

Income Account.

Surplus Dec. 31, 1909	$378,700.86
Net profit, year 1910	363,115.69
	$741,816.55
Dividends	$164,430.00
Carried to insurance fund..........	61,000.00
Written off steamers, depreciation, etc.	124,921.86
Net surplus	391,464.69
	$741,816.55

A New Type of Lake Freighter.

A freight steamship, The Toiler, is now being built in England for the Canadian canal and lake trade, which is a decided innovation. It is simply a hull, without any top hamper, masts, or even funnels, as it will be operated by internal combustion oil engines, the same as automobiles. It will be the first boat of this kind to be operated on the Great Lakes for commercial purposes, and will also be the first vessel in the canal carrying trade to use double propellers, which, it is claimed, will prove of great advantage in manœuvering.

The adoption of this type of boat is in line with the natural evolution of the canal freighter. With the short season and high wages paid, shippers have been using all their ingenuity to get as much out of a given size of vessel as is possible. The lake tonnage is divided into two classes, the big upper freighter and the canal boat, while the latter is divided into two types, the package freighter and the bulk carrier. The great increase in the bulk shipments of coal from Lakes Erie and Ontario points to Montreal, the building of the Port Colborne elevator and the elevators in Montreal, together with the pulpwood trade, have of late tended to make the bulk freighter a most important type. The continual struggle has been to get the greatest possible deadweight on the limited draft. But with the limitations of the canals and locks, it is impossible to increase the dimensions of ships, so that any increase in deadweight must be taken out of the material and equipment. The limit in reduction of weight of material used in construction has long been reached, so that the only method of increasing carrying capacity was by reducing the weight of the propelling machinery.

With this idea in view internal combustion oil engines have been adopted for the new boat, which was designed by John Reid & Co., Board of Trade Building, Montreal. The introduction of this type of engine has effected such a saving of space and deadweight that The Toiler will carry nearly 3,000 tons, or about 97,000 bush. of grain through the canals, an increase of about 15,000 bush. over the largest canal carriers fitted with steam engines.

To get such a carrying capacity boilers had to be dispensed with altogether. The boat's propelling machinery consists of two sets of oil engines driving twin screws. The latter feature is a revolution in itself, as it will be the first canal boat so equipped. The advantage claimed is that the vessel will be under better control while manœuvering in narrow waters and in lining up previous to entering a lock. The engines are directly connected, without clutches, to the propeller shafts, and are a modification of the Diesel engine. There is no injection system of any kind, therefore, no delicate joints or connections to get broken or loose, which might stop the engines at a critical moment. The starting and reversing gear is simple, and said to be more certain than with the steam engine, and is done by means of compressed air, the same power being also used to drive the steering engine and other auxiliaries. The fuel to be used is crude petroleum, which is injected into the cylinder without being vaporized, where it is ignited and burned in a charge of hot air. This air when the oil is injected is at a dull red heat, generated under very high compression.

The Toiler will arrive at Montreal and go into service early in the coming navigation season, and will be the first gas or oil propelled vessel to cross the Atlantic. It is regarded by ship engineers as a big step in the solution of the canal navigation problems, and the prediction

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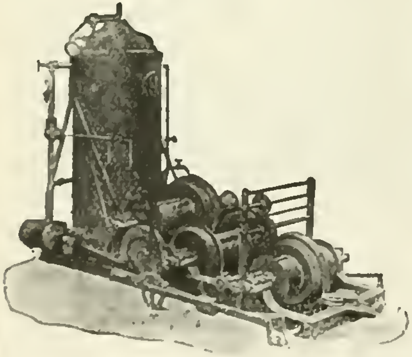

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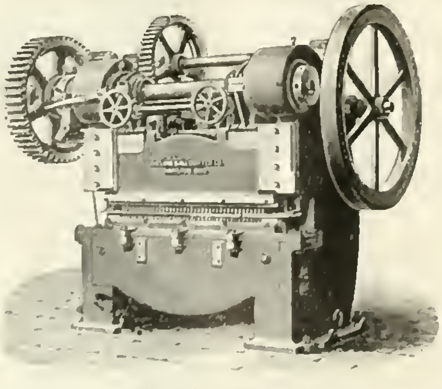

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is made that within a decade or two steam will be out of date on canal and lake boats.

In connection with the construction of The Toiler, experiments are being carried on with high speed oil engines in combination with electric transmission, which it is expected will mark a further advance in economy and efficiency in Canadian canal transportation. An interesting feature will be that through suitable electric switches and connections the control of the propellers will be placed in the hands of the navigating officer right in the bow of the ship. This will be a very great advantage in handling a vessel through the narrow canal channels and locks.

Notices to Mariners.

The Department of Marine has issued the following:

10. Jan. 25. 22. New Brunswick, Chaleur Bay, Restigouche river, Dalhousie harbor, lighthouse on Government wharf increased in height. 23. Quebec, Gulf of St. Lawrence, Anticosti Island, Bagot bluff, change in fog alarm.

11. Jan. 28. 24. British Columbia, Vancouver island, southeast coast, Victoria harbor, rock off shoal point, buoy placed. 25. British Columbia Strait of Georgia, Active pass, Mayne island, Georgina point, change in character of light.

12. Feb. 7. 25. Ontario, western end of Lake Erie and lower end of Detroit river, list of buoys to be maintained by Canadian Government.

13. Feb. 8. 26. Nova Scotia, west coast, Port Maitland, dates when light will be exhibited. 27. Nova Scotia, Cape Breton island, east coast, Sydney harbor, west arm, intended change in character of front range light. 28. Prince Edward Island, south coast Hillsborough Bay, St. Peters Island, light station, explosive for signal. 29. Ireland, south coast, Waterford harbor, Hook point light, alteration in character. 30. England, west coast, Bristol channel, Hartland point lighthouse, alteration in fog signal.

14. Feb. 9. 31. Ontario, Georgian Bay, south side, Collingwood harbor, obstructions in dredged channel removed. 32. Ontario, Georgian bay, entrance to Key harbor, depth on Alwin rock. 33 Ontario, Lake Superior, Thunder Bay, off Mutton island, wreck removed.

15. Feb. 15. 34. British Columbia, Burrard inlet, First narrows, Prospect point, change in sounding of fog bell. 35. British Columbia, Burrard inlet, Vancouver harbor, Brockton point, change in sounding of fog bell. 36. British Columbia, Arthur passage, Herbert reef, beacon erected.

16. Feb. 17. 37. New Brunswick, Bay of Fundy, south of Grand Manan Island, Little Wood island, life saving station established. 38. New Brunswick, Bay of Fundy, south of Grand Manan island, telephone connections between Gannet rock lighthouse, Little Wood island life saving station, Big Wood island and Seal Cove.

17. Feb. 21. 39 New Brunswick, Chaleur Bay, Restigouche river, Dalhousie harbor, red sectors inserted in light on Government wharf. 40. Quebec, Chaleur bay, Garde point, lightboat withdrawn, change in position of gas buoy. 41. Quebec, Chaleur bay, Restigouche river entrance, Maguacha spit, gas buoy established. 42. Quebec, River St. Lawrence below Quebec, St. Roch des Aulnaies, marine signal station discontinued

18. Feb. 22. 43. Ontario, Lake Erie Port Stanley breakwater, change in character of light. 44. Ontario, Lake Superior, Thunder Bay, Port Arthur light station, fog bell established.

19. Feb. 22. 45. New Brunswick, south coast, Bay of Fundy, Chignecto channel, Grindstone island lighthouse, lantern destroyed by fire, temporary light. 46. Nova Scotia, south coast, Cross island light station, change in fog alarm.

Northern Navigation Co. Ltd,

The report for 1910, as published in our Feb. issue, was adopted at the annual meeting in Toronto Jan. 31. In moving the adoption, the President, W. J. Sheppard, referred to the agreement with the G.T.R., under which the company could be required to build another vessel of the Hamonic type, and intimated that this would probably become necessary in the near future The first agreement between the N.N Co. and the G.T.R. was made for 10 years, with the understanding that if the business required it, the G.T.R. would call on the N.N. Co. to build another vessel by giving 18 months notice, and on the new vessel being completed, the agreement between the companies was to be automatically extended for 10 years from the expiring date of the first agreement.

The directors were unanimously reelected. The board for the current year is as follows:—President, W J. Sheppard; Vice President, H. Y. Telfer; Secretary-Treasurer, C. E. Stephens; other directors, H. B. Smith, F. A. Lett, C. D. Warren, Hon. J. S. Hendrie, W. D. Matthews, W. E. Davis. The executive committee is composed of the President, Vice President, Secretary-Treasurer, F. A. Lett and H. B. Smith.

In reply to a shareholder the President said that Jas. Playfair, of Midland, and President of the Inland Lines, Ltd., had made an offer to the directors to purchase the company's stock at 125, or $1,250,000 for the $1,000,000 issued. A preliminary agreement between Mr. Playfair and the directors had been signed by six of the directors, viz., himself, H. Y. Telfer, H. B. Smith, C. E. Stephens, F. A. Lett, and C D. Warren, under which Mr. Playfair agreed to buy at $125 a share and interest from Jan. 31, 1911, at 6% all shares belonging to the shareholders who before Mar. 12 accepted the offer by depositing certificates in the Traders Bank, Toronto, provided that shareholders owning at least 51% of the entire stock accept the same and subject to the sale being approved by C. M. Hays, President G.T.R. In the case of any shareholder, under any disability as regards sale of stock or residing outside of Ontario or Quebec, a further 30 days to be allowed for deposit of certificate. Payment for the stock to be made in cash on or before March 20. Mr. Playfair to deposit $50,000 on or before Feb. 15 to the joint credit of himself and the President and Treasurer of the N.N. Co., the same to be available on and after March 20 to the purchaser for payment for shares of which certificates might be deposited, provided that at least 51% of the shareholders should have accepted the offer, and that the purchaser should, on or before March 20, be able and willing to carry out the agreement and to purchase all shares of shareholders who may before March 20 accept the offer, otherwise the $50,000 should be forfeited and paid to the shareholders accepting the offer as liquidated damages for breach of the agreement. The six directors signing the agreement accepted the offer for their shares and agreed to recommend its acceptance by the other shareholders. If certificates for 51% of the stock were not deposited by March 12 the agreement was to be void and the $50,000 returned to Mr. Playfair. The directors signing the agreement undertook, on the stock deposited being paid for as provided, to resign from the board and to elect thereto such persons as the purchaser might nominate. It was further provided that the agreement should only be binding when the deposit of $50,000 had been made, as called for, and C. M. Hays had given his written approval.

President Sheppard added that he had communicated the offer to Mr. Hays on Jan. 17, the latter replying as follows:—"I have been consulting with the officers of our freight and passenger departments, and upon receiving their views as to what is proposed, have arrived at the conclusion that it is not at present in our interests that there should be any change in the existing state of affairs. I have asked Mr. Davis to state the matter at the meeting tomorrow. I would also ask you to consider whether or not the business outlook will warrant you in placing an order for another steamship of equal capacity and general style to the Hamonic, to run in the line with that vessel. Mr. Sheppard said that as Mr. Hays did not approve of the proposed transfer of ownership, the arrangement with Mr. Playfair fell through automatically.

Mr. Playfair then went to work to change Mr. Hays' views, and secure the G.T.R.'s approval, and on Feb. 6 President Hays wrote President Sheppard as follows:—"Referring again to the matter of the acquisition by Jas. Playfair and associates, of the Northern Navigation Co., J. W. Loud, W. E. Davis, and myself have today had a conference with Mr. Playfair on this subject, and after discussing the situation fully, and the terms of the existing agreement between our companies, with the understanding arrived at on our part with Mr. Playfair that he agrees with us as to the desirability of a new steamer under the terms of the agreement, and having advised us as to his intentions as to the matter of directors and management, which he agrees shall be of a character which shall be satisfactory to us, and in which he has no present intention of making any changes, nor has he any desire to do so without conference and agreement on our part, it seems to me the conference has had the effect of eliminating any objections we might offer to what is proposed, and I am therefore advising you accordingly."

Following this, Mr. Playfair, on Feb. 15, deposited the $50,000 as provided in the agreement, and under that date the N.N. Co.'s directors issued a circular to shareholders, advising them of the offer and recommending its acceptance, the circular being signed by all the directors except W. D. Matthews. C. E. Stephens signed except as to 10 shares out of his holding of 40 shares.

It is said that British as well as Canadian capital is behind Mr Playfair in this transaction, and that Lord Furness, ship owner and ship engine builder, and head of Furness, Withy & Co., and the Furness Line, is interested

On Feb. 6 President Hays notified President Sheppard, under the agreement between the two companies, that the N.N. Co. provide an additional steamship within 18 months, the plans to be approved by the G.T.R. Mr. Sheppard replied on Feb. 10 that the company would do so, the new vessel to be ready not later than the opening of navigation in 1913, and that she would probably be 400 ft. long. The Hamonic is 365 ft.

The Minister of Public Works promised consideration to a deputation from Meaford and the vicinity, Feb. 1, in response to their request for an appropriation for the improvement of Meaford harbor.

The Department of Public Works has directed the preparing of plans for the construction of an outer breakwater at Port Stanley. It is to be 1,200 ft. long, which will give the harbor an opening of 350 ft., and it will be built to the east of the present harbor entrance. It is stated that the east pier will subsequently be destroyed.

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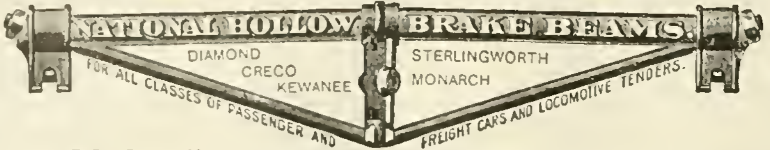
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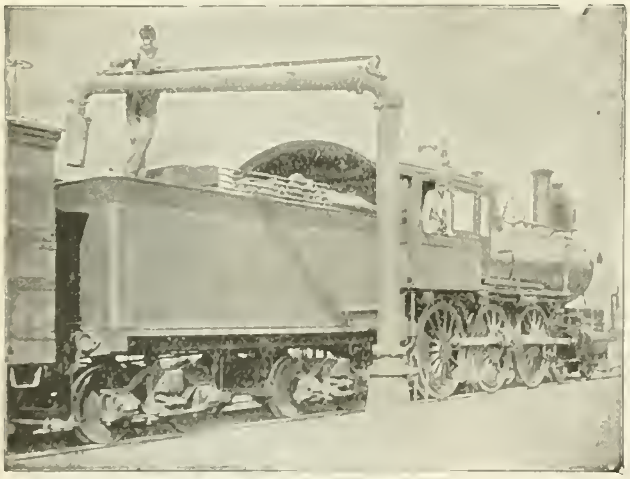

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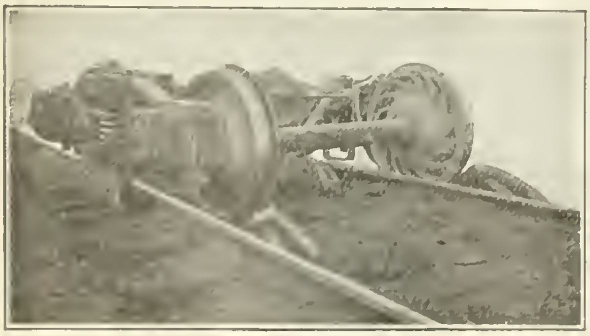

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St. Lawrence River Steamboat Co. and Thousand Islands Steamboat Co.

The property of these two companies has been acquired by a syndicate headed by E. B. Osler. President Niagara Navigation, and W. D. Matthews. President St. Lawrence and Chicago Steam Navigation Co., and including also B. W. Folger. General Manager Niagara Navigation Co. The companies were formerly controlled by Folger Bros.. Kingston, Ont., the firm consisting of the late Henry Folger and B. W. Folger. Sr. A few years ago the properties were transferred to Howard S. Folger and B. W. Folger, General Manager of the Niagara Navigation Co., both sons of the late Henry Folger. The syndicate has bought Howard S. Folger's interest, and B. W. Folger, of the N.N. Co., has put his interest in.

Both lines operate in connection with the New York Central and H.C. Rd. The St. Lawrence River Steamboat Co. has three boats, America, Pierrepont, and Jessie Bain, which run between Kingston, Ont., and Cape Vincent, N.Y., an important ferry service of some 20 miles, serving territory east and west of Kingston, and, on the U.S. side, Watertown, Syracuse, Utica, Rome and other important points. The Thousand Islands Steamboat Co. has three boats, St. Lawrence, Ramona and New Island Wanderer. A fourth boat, the Ottawa, which was burned, is to be replaced. These boats run between Clayton and Alexandria Bay, N.Y., with eight stops between, and also carry local excursions among the Thousand Islands, calling occasionally at Kingston and Gananoque, Ont.

Some changes have been made in the boards of both companies, so as to place the new ownership in control and further changes will probably be made at the annual meetings in June. Robt. Crawford, coal merchant, Kingston, is President of both companies

Howard S. Folger has retired from the management, and has been succeeded as Manager by W. J. Douglass, who was born at Troy, N.Y., June 15, 1875, and who has been employed by the New York Central Rd. since he was 20 years old, with the exception of two years spent in Cleveland in the vessel brokerage business. From 1901 to 1903 he was agent Western Transit Co.; 1903 to 1905, Superintendent Mutual Transit Co.; 1905 to 1907, General Superintendent Rutland Transit Co.; 1907 to 1909, Assistant Manager Rutland Transit Co.

The All Red Steamship Co.

The Dominion Parliament is being asked to incorporate the All Red Steamship Co., the bill having been read a first time, Feb. 1. The incorporators named are: Chaplin, Milne, Grenfell and Co., Vickers Son and Maxim, Ltd.; Perry and Co., Sir Thos. Tancred, Linton Clarke and Co., Sir Thos. Troubridge, F. J. Burt, Capt. C. E. S. Clitherow, London, Eng.; W. Beardmore and Co., Ltd.. Glasgow, Scotland; R. Stephenson and Co., Hepburn-on-Tyne, Eng.; Swan, Hunter and Wigham Richardson, Ltd.; E. L. Bentley, Newcastle-on-Tyne, Eng.; W. H. Leslie, Price Forbes and Co., Major R. P. Cobbold, W. Harris, D. H. Allan, London, Eng.; W. Fitzgerald, Dublin, Ireland; the Gloucester Wagon Co., Ltd., Gloucester, Eng.; North British Locomotive Co., Ltd., Glasgow, Scotland; J. Lithgow, Port Glasgow, Scotland; S. G. Fraser, J. Kennedy, H. McCorquodale, Hoare and Wheeler, Andrew Weir and Co., H. Haulder and Partners, Ltd.; Capt. J. A. Morrison, Gellatly, Hankey and Co., London, Eng.; Pickford and Black, H. G. Bauld, A. W Redden, R. T. MacIlreith, and J. A. Chisholm, Halifax, N.S. The provisional directors are: Sir Thos. Troubridge, N. H Skipnith, Andrew Weir, H. Haulder, H G. Bauld, W. A. Black and John Kennedy, with power to add to their number The capital stock is fixed at $1,000,000 in shares of $100 each. The head office is to be in Montreal, and the first annual meeting of shareholders is to be held on the first Wednesda yin Sept. Power is asked to own and operate steam and other vessels between Canadian ports and all ports of the British Empire and foreign countries; to build and own docks, piers, wharves, warehouse, elevators, hotels and other buildings and works, and to build branch lines of railway on its properties, provided that they do not exceed six miles in each case, and to connect them with other lines, with power to expropriate property for such work; to issue debenture stock, bonds and other securities and mortgage its property, provided that the total amount of the securities does not exceed the cost of the properties mortgaged; grant liens on subsidies, grants, etc.; to enter Ballina and Belmullet Ry. and Piers Co., into agreements with the the Collooney, in Ireland, or to acquire its property, rights and franchises, and to enter into agreements with the British, Canadian, Australian and New Zealand Governments, or with the Governments of any British colony, for the carriage of mails and for other services.

The promoters of the bill which is now before the House of Commons, have been engaged on the project for some years, and the matter has received considerable attention from the various Governments above. The original proposal provided for a quick service between a Newfoundland or Canadian port and Blacksod Bay, Ireland, with suitable rail service across Ireland, and steamboat transfer across the Irish Channel to England. The question of transfer over the Irish Channel was left open, as if a car ferry service was operated, it would necessitate the reconstruction of the Irish railways, owing to a difference in a gauge. It is anticipated that the question of Governmental aid for this project will come up for discussion at the Imperial Conference, which is to take place in London, Eng., after the coronation.

The All Red Line Steamship Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $100,000, and office at Ottawa, to build, purchase or otherwise acquire and operate steam and other vessels, harbors, wharves, docks, piers, dry docks, warehouses and other buildings, railway and steamboat terminals, etc., and to carry on the general business of carriers of passengers and freight; to amalgamate with any person or company engaged in the transportation of passengers and freight by land or water, and to acquire interest in any similar companies. The provisional directors are J. A. and O. Ritchie, J. N. Rattey, W. J. Grace, and R. M. Bobier, Ottawa.

The All Red Line, Ltd., has been incorporated under the British Columbia Companies Act. Whether there is any connection between the companies incorporated by Dominion and British Columbia letters patent and the one which is seeking incorporation by the Dominion Parliament, has not transpired.

Buoy Depot at Prince Rupert B.C.

The Marine Department has let a contract to the Pacific Coast Construction Co. for the building of a buoy depot at Prince Rupert, B.C., for $159,445. The site consists of about five acres on the southern shore of Casey Cove, on the western side of Prince Rupert harbor, about 2½ miles from the existing wharves in the centre of the city. When completed the establishment will consist of a reinforced concrete pile wharf, a yard on the same level as the wharf, and the necessary offices, dwellings, workshops, etc., with the usual plant for handling and repairing buoys, lanterns, and other aids to navigation. The accompanying plan shows the disposition of the wharf and various buildings with relation to the site. The wharf will consist of reinforced concrete piles with reinforced concrete braces. The deck beams and decking will be of wood. The buildings will all be of wood, with the exception of the buoy shed, which will be of steel frame construction. A system of yard tracking will be supplied, and it is intended to use a locomotive crane in connection with this track for handling materials. It is intended to keep on hand a supply of coal, and a portion of the wharf has been widened for storage purposes. An overhead crane will be established in the buoy shed for handling heavy buoys. A system of water supply, fire protection and drainage, suitable for the requirements of the station, has been provided for and is included in the contract price. It is expected that this depot will meet all the requirements rendered necessary by the increase in aids to navigation in the northern waters of British Columbia, and the difficulty of handling these at such a distance from departmental headquarters. The plans and specifications were prepared by the Department's Chief Engineer, Col. W. P. Anderson, M. Can. Soc. C.E.

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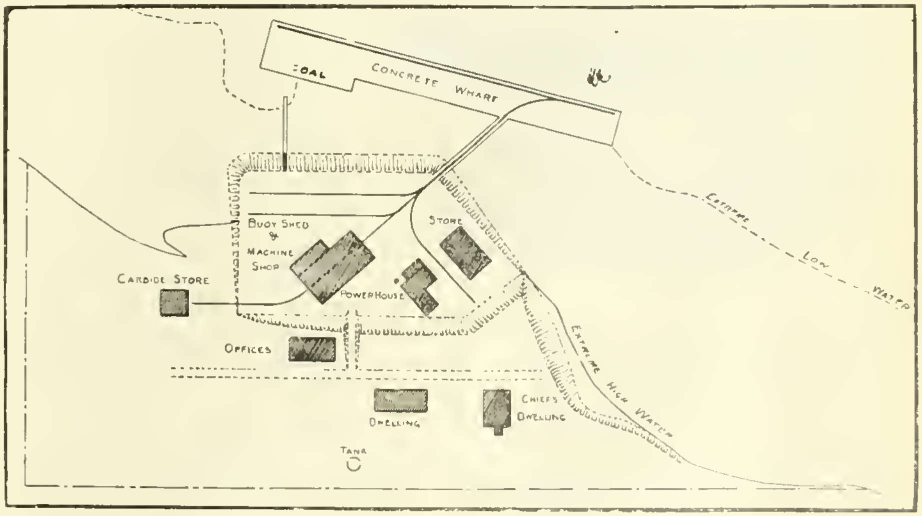
The North Vancouver ferry receipts for Jan. were $6,570.65, against $3,426 for Jan., 1910.



Buoy Depot, Prince Rupert, B.C.

JOHN S. METCALF CO., LTD.

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Wharves **Power Plants** **Freight Sheds**

We are well equipped to do heavy pile driving.

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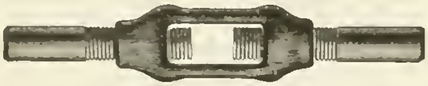

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CLEVELAND CITY FORGE & IRON CO.

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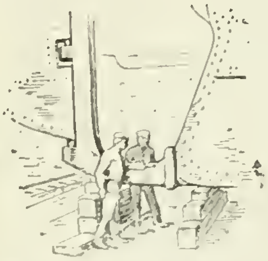

We can usually execute the repairs without removing the broken sections from their position. All our appliances are light and portable and may be brought to the job. The only outside power required is a small supply of compressed air for the operation of the preheating torch.

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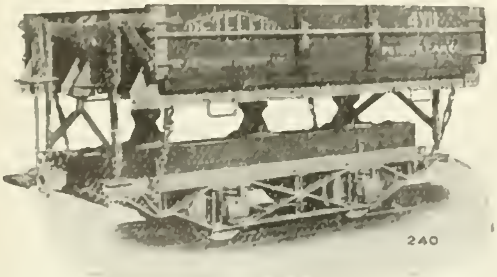

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R. and O. N. Co's Saguenay Steamboat.

The Richelieu and Ontario Navigation Co.'s steamship, which is under construction at Glasgow, Scotland, will be ready for service by June, and will cross the Atlantic under her own steam, when she will be placed on the Saguenay route. Her dimensions are, length 285 ft., breadth over all, 58 ft., with a draught of 12 ft., and she will be propelled by twin screws, driven by engines of the four cylinder triple expansion type, capable of developing 19 miles an hour. All her equipment will be of the most modern type, and she will be fitted with a telephone system between the pilot house, captain's and engineer's rooms and the steward's department. Her main deck forward will be open for the carriage of freight, and aft of this will be the second class quarters, while further aft will be the main entrance hall, in which will be located the baggage check room, purser's office, etc. In the centre of the entrance aft will be the entrance to the dining room which will extend to the stern of the vessel. Both the dining room and entrance hall will be panelled in mahogany, and the entire decorations will be of the most modern type. The main staircase will lead from the entrance hall to the main saloon which will have staterooms on both sides, all of the outside type 12 being parlor rooms with baths connecting, and all being provided with running water and open plumbing. At the forward and after ends of the main saloon will be large circular observation rooms, entirely surrounded by glass. The upper stateroom deck will be arranged in the same way, and above this will be an observation cabin. The entire vessel will be steam heated and lighted by electricity, and the life saving and fire apparatus will be of the most approved type.

◆

Lloyd's Register of Shipping.

An important change in the constitution of the governing body of this society has been decided upon, namely, to give direct representation to shipbuilders and Engineers. The society, which, was established on its present basis in 1834, has up to the the present been under the control of a committee composed of shipowners, underwriters, and merchants, elected by public bodies in London and the other great shipping ports of the United Kingdom. In the earliest days of the survey and classification of shipping, it was thought that a committee so composed was fully representative of all the interests concerned. The rapid growth of great shipbuilding yards and engineering works, forming as they have done what are practically universities of naval architecture and marine engineering, introduced, however, a new factor in the shipping world and the committee felt that the usefulness of the society would be greatly enhanced if the scientific knowledge and practical experience which had contributed so largely to the building up of these enterprises could be enlisted in its service. Accordingly, in 1890, a consultative committee was formed, elected by the principal British technical institutions, of men whose ability and attainments entitle them to be ranked among the foremost authorities on everything pertaining to the technical side of the society's work.

◆

Press reports state that the C.P.R. will establish a steamship line between the Maritime Provinces and the West Indies, with hotels at St. John, N.B., Yarmouth, N.S., Jamaica and Bermuda. For this service, it is stated, the steamships Empress of India and Empress of China, at present operating on the Pacific, will be transferred to the Atlantic.

Inland Marine Insurance.

A conference with underwriters took place in New York Feb. 3 at the offices of Clubb and Sons, underwriters, at which the Canadian Lake Protective Association was represented by Frank Plummer, President; A. A. Wright, Toronto, and F. S. Wiley, Port Arthur. L. Henderson, Montreal Transportation Co., and F. King, Counsel, were snowbound and unable to reach New York in time. Representatives of Johnson and Higgins, insurance brokers, and of F. Hermann, underwriter, were present. The Canadian Lake Protective Association's case was well presented and favorably received.

The failure of the Great Lakes Protective Association to take any measures to exercise control over the navigation of its members' boats was commented on as one of the main reasons for the formation of the Canadian Association, which latter organization aims to make the master's certificate a pledge of reasonable safety for the ship. The agreement constituting the association and the rules for masters and engineers, which include written consent to the penalty of dismissal, were explained, and it was shown that any negligence on the part of these officers would be dealt with by a committee interested in enforcing the regulations and free to act independently of the embarassing claims of the employe upon the sympathy of his employer. It was explained that through this committee a formal investigation by the Dominion Wreck Commissioner could always be secured, and that in one way or the other the necessary penalties could be imposed. The important argument advanced, however, was that the mere existence of the organization and its regulations, with the machinery for penalizing faults, would have a distinctly beneficial result, as experience had shown that where masters were given positive instructions with severe penalties attached, avoidable accidents do not occur.

The representatives of the Canadian Association asked that separate records be kept of the premiums and losses on vessels enrolled in that association, and that insurance rates be fixed for its members accordingly, without regard to any other rates given on the lakes. In this connection a further request was made that losses on vessels sailing under extended insurance should be dealt with separately, and not considered in the regular season's rates.

A request was also made for the appointment of a separate representation to look after Canadian business, so as to relieve R. Parry-Jones, the Salvage Association of London's representative at Cleveland, Ohio. The appointment might be made by the underwriters, or by Mr. Parry-Jones, but the volume and importance of the business and the necessity for close supervision of repairs to save unnecessary or improper charges against the policy, demanded the appointment of some one to attend exclusively and independently to Canadian affairs. The reasonableness of this proposition could be seen in the light of the facts that in 1899 there were only some 10 Canadian vessels trading out of Fort William and Port Arthur, while in 1910 there were over 80.

The withdrawal of the Canadian boats from the Great Lakes Protective Association caused a good deal of discussion, but it was made clear that the Canadian organization was designed primarily to fulfil the important functions of the United States organization, which that body was completely ignoring, and that Canadian vessels could not be expected to contribute towards unnecessary work. Regarding the expense of taking and advertising drafts of water, etc., the Canadian organization would be quite willing, however, to pay its pro rata share, either by contribution or by employment of additional service.

It may be that the assumption, by the owner, of some small part of the insurable risk on Canadian hulls, will be required by the underwriters, but doubtless this will not be considered at all a serious difficulty.

The whole question is now in the hands of underwriters, and Mr. Chubb is taking it up with the underwriters in London, Eng., as well. On the whole the members of the Canadian deputation have every reason to believe that their mission will prove successful, and that the Canadian Lake Protective Association will receive due recognition, and in due course begin to reap the benefits it expects.

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Sault Canals Traffic in 1910.

An analysis of the report of the Superintendent of the canals at Sault Ste Marie is quite interesting. While 12,927 vessels used the U.S. canals as against 7,972 using the Canadian canal, the Canadian canal nevertheless bore the greater part of both vessel tonnage and freight tonnage. The 7,972 vessels which used the Canadian canal had a net registered tonnage of 23,349,137 tons, while the 12,927 vessels which used the U.S. canals had a combined net registered tonnage of 26,506,986, showing that the large ships sought the Canadian waterway. The freight carried through the Canadian canal was 36,435,557 tons as against 25,927,661 tons carried through the U.S. canal. The total of 62,363,218 tons is the largest in lake history, the nearest being that of 1907, when 58,217,214 tons were carried.—Marine Review.

◆

Atlantic and Pacific Ocean Marine.

The s.s. Ottawa, of the White Star-Dominion line, formerly the Germanic, of the White Star line, is reported to have been sold to the Turkish Government for £21,000 to be used as a transport. She ran between Montreal and Liverpool in 1909, but has not been in service since.

The contract made with the Union Steamship Co., of New Zealand, for the carriage of mails between Canada and New Zealand, is for five years, monthly sailings being guaranteed. Canada contributes £37,000 and New Zealand £22,000 as subsidy.

The Thomson Line s.s. Gerona, which is approaching completion, is scheduled to leave Southampton, Eng., about May 30, on her maiden voyage, arriving at Montreal June 17. She is a twin screw vessel, equipped with Marconi wireless telegraph apparatus and fitted for passenger and freight business.

A Montreal press dispatch of Feb. 7, stated that amended plans for the new vessels which the C.P.R. will have built for its trans-Pacific service, were received there recently. The general plan, it is stated, as previously approved, was confirmed, and only a few minor changes were made. The speed of the vessels is given as 23 knots an hour, and it is reported that turbine engines will be utilized.

The C.P.R. and J. N. Boyde, owners, respectively of the steamships Montcalm and Kron Prinz Olaf, have entered cross actions for damages sustained by their vessels in collision in the St. Lawrence River, Sept. 24, 1910. The C.P.R. claims $25,000, and J. N. Boyde $15,000. The judgment of the Wreck Commissioner, Capt. L. A. Demers, after an enquiry into the affair, in which he censured the master and mate of the Kron Prinz Olaf, and fined the pilot, was given in full in our last issue.

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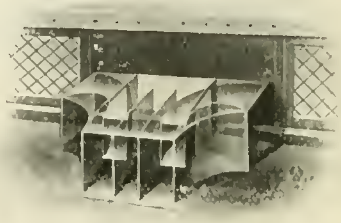

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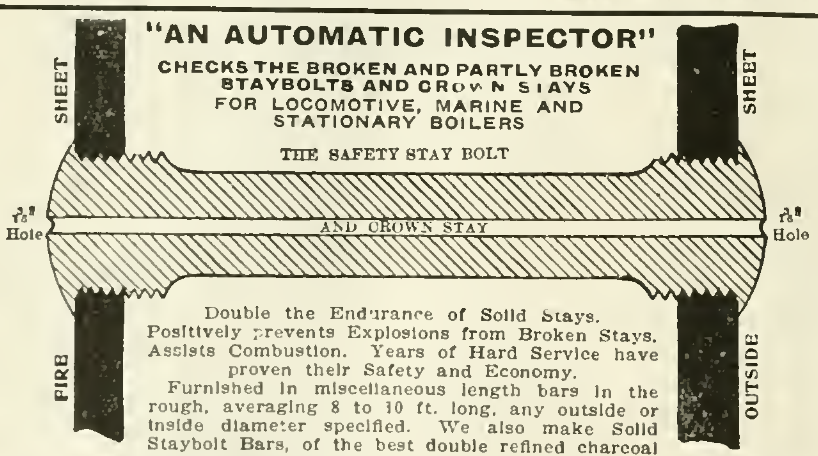

Double the Endurance of Solid Stays. Positively prevents Explosions from Broken Stays. Assists Combustion. Years of Hard Service have proven their Safety and Economy.

Furnished in miscellaneous length bars in the rough, averaging 8 to 10 ft. long, any outside or inside diameter specified. We also make Solid Staybolt Bars, of the best double refined charcoal iron. Average length of bars, 16 to 20 feet.

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Canadian Pacific Railway Company.

Dividend Notice.

At a Meeting of the Board of Directors held this day the following dividends were declared:—

On the Preference Stock two per cent. for the half year ended 31st December last.

On the Common Stock two and one-half per cent. for the quarter ended 31st December last, being at the rate of seven per cent. per annum from revenue, and three per cent. per annum from interest on proceeds of land sales and other extraneous assets.

Both dividends are payable 1st April next to shareholders of record at 3.00 p.m. on 1st March next.

Warrants will be mailed on 31st March next.

By order of the Board.

W. R. BAKER,
Secretary.

Montreal, Feb. 13, 1911.

A bill was read a first time in the House of Commons recently, providing for the payment of a subsidy not exceeding £25,000 a year for a steamship service between the Pacific coast of Canada and China and Japan, the contract to run for 10 years from April 7. The Premier explained that the subsidy was first granted about 20 years ago, when the C.P.R. entered into a contract to provide the service, with the steamers Empress of India, Empress of China and Empress of Japan. The Imperial Government joined in the subsidy, and the two governments were now in communication as to the terms of its renewal. The C.P.R. had in contemplation the placing of newer and faster steamers on the service, and it was expected that some information as to when such steamers would be available, would be given the Government before the bill was finally passed.

Maritime Provinces and Newfoundland.

The Reid Newfoundland Co.'s s.s. Home struck a rock, while entering Port aux Basques, Feb. 3. The damage was not great, and during repairs, she will be relieved by the s.s. Ethie.

The Government s.s. Montcalm, which left Quebec Feb. 5, for the usual winter trip to North Shore points and Anticosti, returned Feb. 12. Considerable difficulty was experienced on the upward trip, with floating ice.

The Government wharf at Trepassey, Nfld., has been completed, and the s.s. Portia, landed goods there, Feb. 3, for the first time. This wharf has been in an incomplete condition for several years.

The reports of traffic at Halifax, N.S., for Jan., state that there has been about three times more cargo landed, than in Jan. 1910, and appearances indicate that the increase will be maintained throughout the remainder of the winter.

Montreal press reports recently stated that the C.P.R. intended increasing its facilities at St. John, N.B., and to spend about $1,000,000 on the building of terminal property on land purchased there. The improvements mentioned included the operation of a double daily service between St. John and Digby, N.S. W. Downie, General Superintendent Atlantic Division, stated that he had no information to the effect stated.

Tenders were received Feb. 15, by the curator of the Star Line Steamship Co., Ltd., in liquidation for the purchase of all or any part of its property consisting of the s.s. Majestic, built at Toronto, in 1899, equipped with engine of 33 n.h.p. driving a screw, with dimensions, length 110 ft.; breadth 21.9 ft.; depth 5.2 ft.; tonnage, 275 gross, 156 register: the s.s. Victoria, built at St. John, N.B., in 1897, equipped with engine of 53 n.h.p. driving paddle wheels, and with dimensions, length 191.2 ft., breadth 30 ft.; depth 7.9 ft.; tonnage, 1,002 gross, 631 register, with all tackle, wharf, warehouse and buildings at Fredericton, N.B.

Province of Quebec Marine.

Ad. Tanguay has been appointed Manager Levis Ferry, Ltd., in place of the late J. F. Demers.

The plant of F. Gilbert, dredging contractor, insolvent, Montreal, consisting of the steam tug Beaver, the dredge Premier, and a number of dump scows and sundry items, has been sold by the curator.

The Kaine and Bird Transportation Co., Quebec has elected the following officers and directors for the current year: President and Managing Director, Hon. J. C. Kaine; Secretary-Treasurer, M. P. Connolly; other directors, J. Bird, C. E. Taschereau and D. C. T. Atkinson.

The Quebec Harbor Commissioners have issued plans of their proposed improvements to Louise dock, etc, including three piers to the north of the Louise dock, creating four basins for the use of vessels. The plans were prepared by St. G. Boswell, the Commission's Chief Engineer.

The Montreal Harbor Commission has purchased about 76,000 sq. ft. of land fronting to the south on the river, and to the north on Notre Dame St., for a harbor yard, repair shops and for storing supplies. Possession will be secured by May, when the work of preparation will be commenced.

The Lachine Canal traffic for 1910, was 3,178,311 tons against 2,790,056 for 1909. There was a decrease in the number of U.S. vessels using the canal, but Canadian vessels increased by about 800. The chief increases were in grain, while there were decreases in flax and flour.

The finance committee of the Quebec city council announced, Feb. 9, in connection with an enquiry by H. Russell, that exemption from taxes for 20 years, in addition to a liberal bonus, would be granted, should the company, with which he is connected, decide to build a shipbuilding plant in the port of Quebec.

The Marine Department, on the reopening of navigation will establish a gas buoy to mark the position of the dismantled and submerged pier at no. 3 curve in Lake St. Peter. The buoy will be of steel painted red, numbered 221, and will be moored in 32 ft of water. The light exhibited will be of white, automately occulted at short intervals.

The Development Co. of Canada is applying to the Quebec Legislature for incorporation, to carry on a general merchants' business, and in connection therewith to build, purchase or otherwise acquire and operate steam and other vessels, and to carry on the business of carriers by land and water. R. H. Welden, C. W. Batho and W. B. Smith, Montreal, are the incorporators.

The Louiseville Navigation Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $50,000 and office at Montreal, to carry on the business of transportation of goods and passengers by land and water; to carry on a towing, wrecking and salvage business; to own, operate and maintain steamship lines and other lines of marine transportation; to build, own and operate steam and other vessels, and to acquire from I. Yergeau, the steamboats Le Louiseville and L'Allege, by payment in fully paid up shares of the company. The provisional directors are: V. Plamondon, O. Lapierre, O. Marchand, Montreal; I. Yergeau, Pierreville, Que.; and H.L. O'Donoghue, Hudson, Que.

The amendments to the Quebec city charter which came before the Legislature, Feb. 9, among other things, provides that should the contract for the operation of the ferry between Quebec and Levis, come to an end in any way, before the date of its expiry, the city may by resolution order the calling of tenders for the sale of the exclusive privilege, or order the sale of such privilege by auction, after giving notice as required by law, and with the consent of the parties the bylaw and contract now in force respecting the ferry service, may be amended, or the parties may put an end to them, and that in future the ferry committee shall consist of eight, instead of six, members, five of whom shall be appointed by Quebec and three by Levis.

The Levis Ferry Co.'s boats were described in our last issue, illustrations of one winter boat and one summer boat being given. For the two winter boats, Plessis and Colomb, the nominal horse power of the engines of each was given as 128, which was according to the registration certificate. The attention of the Quebec city council ferry committee has been called to this, and it has been pointed out that the n.h.p. has been incorrectly stated in the registration. A. Johnston, chairman of the Steamboat Inspection, has communicated with the city council, to the effect that in the returns forwarded by the local inspector, the diameters of the cylinders on each vessels are 15⅛, 25⅛ and 42⅛ ins. diar., which under the rules, gives the nominal horse power as 87.81 and he has been instructed to withdraw the incorrect certificates and issue new ones, giving the n.h.p. as 87.81.

Ontario and the Great Lakes.

The Fort William Coal Dock Co., Ltd., has increased its capital stock from $50,000 to $200,000.

Capt. Jas. Collier, a shipbuilder and mariner on Lake Ontario for over 50 years, died at Picton, Feb. 10, aged 74.

It is reported that the Northern Navigation Co., and C.P.R. vessels operating on the Great Lakes, are to be equipped with wireless telegraph apparatus for the approaching season.

An order in council has been passed making regulations for the governance of the ferry across the Ottawa River between Pembroke, Ont., and Allumette Island, Que.

The Niagara Navigation Co., invited tenders recently for building a passenger and freight shed 300 by 45 ft. on its east dock pier 22, Toronto, to replace the one burned last year.

The application of the Kingston city council to exempt the Kingston dry dock from payment of school taxes, has been refused by the Private Bills Committee of the House of Commons.

Montgomery and Fisher, owners of the tug Saucy Jim, which was burned last fall, have ordered a new one to replace her. The vessel, which will be built in Collingwood, will be 90ft. long.

The Ontario Public Works Department is rebuilding the lock on the Magnetawan River at Magnetawan, and it is anticipated that it will be completed in time for the re-opening of navigation. The lock is 120 ft. long by 28 ft. wide, and about 12 ft. high.

Press reports from Collingwood state that arrangements are being made for the transfer of the C.P.R. vessels from Owen Sound to Victoria Harbor, during the coming season. It is stated two of the vessels will be transferred on May 1, and the others during the season.

Capt. W. O. Parkinson, well known on the Great Lakes for many years, and at one time connected with the old ferry company at Toronto, died there, Feb. 3, aged 57. He retired from active service several years ago, since when he has been in indifferent health.

Following is the board of the Mutual Steamship Co., for the current year: President, D. McGillivray, Port Colborne; Vice President, W. M. German, Welland; Managing Director, J. W. Norcross, Toronto; other directors, R. M. Wolvin, Winnipeg; W. E. Phin, Welland.

The C.P.R., which has been suffering considerable losses through the thefts from cars in transit on its car ferries across the Detroit river, recently caused the arrest of a number of the crews concerned, seven of whom were sentenced to periods of imprisonment ranging from 12 to three months, Feb. 21.

The Dominion Parliament has extended the time within which the Lake Champlain and St. Lawrence Ship Canal Co., may construct the canal authorized by chap. 107 of the Statutes of 1898, to five years from Feb. 7, and limiting to

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Cold, snappy weather does not show up escaping steam where Anchor Packing is used because "THE ANCHOR HOLDS."
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ELLIPTIC
SEMI-ELLIPTIC
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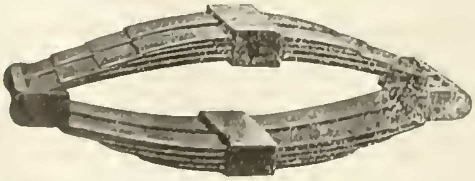

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TENDERS WANTED.

The Quebec and Saguenay Railway.

Tenders will be received up to March 10th, 1911, at noon, by the undersigned, for the construction of about 56 miles of the above railway, from Cap Tourmente to Murray Bay Wharf, divided up into sections of ten miles.

A certified check amounting to $20,000 for each ten mile section tendered for must accompany each tender.

Forms of tender may be obtained and specifications and plans examined at the office of J. F. Guay, Civil Engineer, Morin Building, Quebec; also at office of The Railway and Marine World, 70 Bond Street, Toronto.

The right is reserved by the company to reject any or all tenders

(Sgd.) J. F. GUAY.

◆

NOTICE is hereby given that the Annual Meeting of the Shareholders of the Victoria Rolling Stock and Realty Company of Ontario, Limited, will be held at the offices of Messrs. Osler & Hammond, 21 Jordan Street, Toronto, on Wednesday, March 1, 1911, at twelve o'clock noon, for the reception of the Annual Report and election of Directors for the ensuing year

By order,

G. T. CHISHOLM,
Secretary.

Toronto, February 11, 1911

two years from the same date, the time within which $50,000 must be spent on the work.

A deputation representing the Kingston city council and the Board of Trade, waited on the Minister of Public Works, Feb. 2. to urge the dredging of the lower harbor and the erection of a new bridge to replace the old Cataraqui structure, in order to make Kingston harbor more suitable for deep draught vessels.

The Department of Public Works has awarded the contract for the construction of a breakwater at Port Burwell, to M. Hogan, Westmount, Que., his tender being $234,000. He built the Port Colborne breakwater. The Port Burwell breakwater will be built to the west of the pier, and the contract calls for the work to be completed in 18 months from Jan. 30 last.

The Grimsby Beach and South Shore Navigation Co., Ltd., has been incorporated under the Ontario Companies Act, with a capital of $50,000, and office at Toronto, to build, acquire and operate steam and other vessels, and carry on a general ship owning and transportation business. The provisional directors are W. H. Irving, H. H. Davis and N. Boynes, Toronto.

Polson Iron Works, Ltd., has notified the Toronto board of control that it desires to purchase the old city yard on the west side of Frederic St., to the south of the Esplanade, to enable it to construct a floating dry dock, capable of holding the largest type of vessels sailing on Lake Ontario. The company's plans for the dry dock have been approved by the Government engineers, but nothing can be done until a site has been obtained.

After enquiry into the collision, last fall, between the U.S. tug General and the C.P.R. s.s. Athabasca, in the St. Marys River, the U.S. marine inspectors have suspended the license of the tug captain for six months, and have suggested to the Canadian authorities to investigate the conduct of the Athabasca at the time. We are officially advised that a formal investigation will be held in this matter, some time in March.

The Victoria Navigation Co., Ltd., has been incorporated under the Dominion Companies Act., with a capital of $50,000, and office at Ottawa, to own and operate steam and other vessels; to conduct salvage operations, own wharves, docks, piers, warehouses, etc., and to carry on a general navigation business. The provisional directors are, E. A. Hall, L'Orignal, Ont.: J. H. Half, R. T. Holcomb, J. Galbraith, Ottawa, Ont., and F. Elliott, Thurso, Que.

A proposal is under consideration for the construction of a dry dock and shipbuilding plant at Amherstburg, where it is stated enough shore front property has been secured and negotiations are proceeding for acquiring the necessary land. It is also stated that subscriptions have been received to the extent of $250,000. It is proposed to build at 600 ft. dry dock, with the necessary machine repair shops, etc. Among those mentioned as being interested in the proposition are A. H. Clarke, D. H. Lerry and A. Woods.

The annual meeting of Inland Lines, Ltd., was held at Hamilton, Feb. 9, when the directors' report for the past year was adopted. Following is the board for the current year· President, Jas. Playfair, Midland, Ont.; Vice President, J. P. Steedman. Hamilton, Ont.; Secretary, F. A. Magee, Hamilton, Ont.; other directors, W. J. Southam, W. G. Walton, F. H. Whitton, Hamilton; C. W. Band, Toronto; D. L. White, Jr., Midland; H. W. Richardson, Kingston; Treasurer, J. I. Hobson, Hamilton, Ont.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above tidewater for Jan., as follows:—Superior, 601.07; Michigan and Huron 579.31; Erie 570.92; Ontario 244.78 As compared with the average January levels for the past 10 years, Superior was 1.23 ft. below; Michigan and Huron 0.85 ft. below; Erie 0.78 ft. below, and Ontario 0.60 ft. below. It was anticipated that during Feb. Superior would fall 0.2 ft.; Michigan and Huron would remain stationary; Erie would fall 0.2 ft., and Ontario would rise 0.1 ft.

The Huntsville, Lake of Bays and Lake Simcoe Navigation Co's annual meeting was held at Huntsville, Feb. 4, when the report for 1910 was submitted and adopted. The balance remaining in hand after the season's operations was carried to profit and loss, no dividend being declared. The officers and directors were re-elected for the current year, as follows: President, C O. Shaw, Huntsville; Vice President, H. Foster Chaffee, Toronto; General Manager, S. H. Jacobs, Secretary and Assistant General Manager, W. J. Moore: Treasurer, J. W. McKee.

In connection with the construction of the Livingstone channel by the U.S. Government, which includes the extension of the dam in the Detroit River to the head of Bois Blanc island, in Canadian waters, a notification has been served on the U. S. Government, by the contractors, that unless an order is issued instructing them to proceed with the work, they will withdraw their men and plant. The order to cease operations, which was given last fall was the outcome of objections raised by Amherst'urg, to the extension of the proposed dam.

The Ontario and Quebec Navigation Co.'s steel passenger and freight steamboat, which is under construction, is expected to be ready for service by June 1, when she will be placed on the run from Toronto to Quebec and return, making the round trip each week, passing through the Bay of Quinte, by Thousand Islands, and running the rapids without transferring passengers. The s.s. Alexandria will continue on the route between Rochester N.Y., and Montreal and Quebec, and the steamers Brockville, Alethea, Varuna, Where Now and Madge will operate on the Bay of Quinte, as before.

The captains and chief engineers of the Inland Lines vessels, for the forthcoming season, have been appointed:

	Captain	Engineer
Donnacona	C. R. Alexander	J. Dee
Dundee	J Woolner	E. Shaw
Dundurn	R. Cooney	J. Morris
Emperor	G. W. Pearson	G. Smith
Empress of Fort William	C. R. Albinson	J. Murphy
Empress of Midland	J. W Mawdesley	A. Abbey
Glenellah	G. Mackey	A. E. D. Mackay
Midland King	W. Cunningham	J. McGregor
Midland Prince	J. Tindall	J. Pickard
Midland Queen	W. Lavigne	G. E. Wilson
Neepawah	W. W. Allan	C. Carr
Rosedale	G. Motley	F. Goodwin
Stadacona	J. Cannally	C. H. Menmuir
Strathcona	H. C Mawdesley	A J. Fisher
Wahcondah	W. E, Linton	W. McWilliams
Winona	B. Garvie	J.A.McLaughlin

Capt. W. H. Featherstonehaugh has been appointed Marine Superintendent, and E. Abbey, Superintending Engineer

A steamboat is being built at Kingston for Capt. A. Foster, mayor of Smiths Falls, for operation between Smiths Falls and Kingston. It will make three trips a week, and is expected to be in operation by May 1. The dimensions are, length 96 ft. long overall; 18 ft. beam; 6½ ft. deep. It is of the composite type throughout, with steel frame and steel shear strake. The machinery will consist of Fitzgibbon boiler with fore and aft vertical compound engine, with cylinders 9 and 18 ins. diar., by 14 ins. stroke, supplied with steam at a working pressure of 150 pounds. The condenser will be of the independent type, jet condenser and pump combined and the boiler is to be fed by the regular duplex pump. Hand fire and test pumps are included in the outfit. The cost of the boat is about $12,000. The Davis Dry Dock Co. has the contract.

Manitoba, Saskatchewan and Alberta.

Col. W. P. Anderson, Chief Engineer Marine Department, was in Selkirk, Man., recently conferring with local officials regarding proposed improvements and aids to navigation on Lake Winnipeg.

The development of navigation in Western Canada, proceeds apace. A pupil in an eastern school, in an examination, states: "Many vessels have been wrecked and sunk, in attempting to force a passage through the Rockies."

The Lake Winnipeg Shipping and Supply Co. has deposited with the Minister of Public Works, at Ottawa, plans, etc., for the construction of a dock on the bank of the Red River to extend along the water front from Water St. to Broadway Bridge, Winnipeg.

Capt. C. D. A. Barber, Manager Northern Transportation Co., Athabasca Landing, Alta., who was in Edmonton recently, is reported to have stated that the company was building a fourth vessel for its fleet, which would be ready for operation by the spring. The vessel, which would be a stern wheeler would be operated between Athabasca Landing and the Grand Rapids for passenger traffic, the Northern Light, which was used on that service last season, would be devoted entirely to the freight traffic. The new vessel, which will be named Northland Call, is being equipped with the most modern improvements.

B.C. and Pacific Coast Marine.

The Canadian Fishing Co.'s s.s. Celestial Empire, which is being generally overhauled at Esquimalt, is also having a new boiler installed, which has been brought from Great Britain.

C. H. Nicholson, Manager G.T.P. Steamship Co., was in Winnipeg and Montreal during February, consulting with the general management regarding the proposed works in Vancouver and at other points along the coast.

An order in council has been passed confirming bylaws passed by the Pilotage Commissioners for the district of Victoria and Esquimalt, respecting licenses, certificates, maintenance of boats, ports in the district and dues.

The All Red Line, Ltd., has been incorporated under the B.C. Companies Act, with a capital of $150,000, to build, purchase or otherwise acquire and operate steamships, etc., and to build graving docks, floating docks, etc., and carry on a general ship owning and shipping business.

The Lincoln Steamship Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of $150,000, to carry on the general business of ship owners, merchants, carriers by land and water, etc., and in connection therewith to own and operate steam and other vessels of every description

The Selkirk Steamship Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of $5,000, to acquire and operate the s.s. Selkirk, and also to own and operate steam and other vessels of all kinds, and to carry on the general business of ship owners and shippers.

A Victoria, B.C., dispatch says it has been officially announced that the B.C. Marine Ry. Co. will build a dry dock at Lang's Cove, Esquimalt, 900 by 100 ft., at a cost of $3,000,000, and that it will establish a shipyard capable of con-

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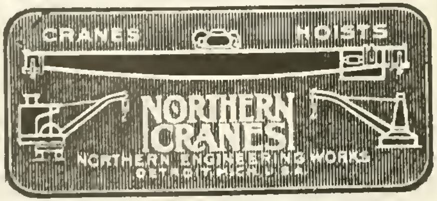

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structing destroyers and cruisers for the Canadian Navy.

The city of Vancouver is applying, under the Navigable Waters Protection Act, for approval of the plan showing the site, mode of construction and description of its proposed wharf on the foreshore of Burrard Inlet, at the mouth of Seymour Creek and the Second Narrows, in connection with the Seymour Creek water works system.

The keel of the Dominion Government's steam tug, contract for which was recently awarded to McDougall and Jenkins, has been laid at North Vancouver, and it is expected that she will be in operation by July. She will be 91½ ft. long, beam 20 ft., depth 12¾ ft.

The harbor engineer has submitted plans to the New Westminster city council for general improvements in the harbor. They cover the extension of the present wharves farther into the river, and the building of additional piers where desirable. Eventually it is hoped to have a port, including the area from the lower end of Annacis island to the Pitt River.

The s.s. Staffa, one of the first vessels operated by Mackenzie Bros., but recently being operated in freight business on the Fraser River, has been condemned. She was built in 1893 at Vancouver, her dimensions being: length, 81.5; breadth, 15.3 ft.; depth, 6 ft.; tonnage, 51 gross, 35 register, and she is equipped with engine of 6 n.h.p,, driving a screw.

The steam tug, contract for which was placed by the Dominion Government, in North Vancouver, recently, will cost about $45,000. She is intended for use in Victoria harbor, and it is anticipated that she will be ready for operation by July, when she will act as a tender for the new dredge, now on the way from Great Britain. The tug will be of steel throughout, except the pilot house, and will be classed 100 A1 at Lloyds. Her dimensions will be: length, 91½ ft. overall, 78½ ft. between perpendiculars; breadth, 20½ ft.; depth, molded 12¾ ft. She will be equipped with five water tight bulkheads, extending from the floor plates to the deck. The machinery will consist of an inverted fore and aft compound surface condensing engine, with a high pressure cylinder of 15 ins. diar., and a low pressure cylinder of 34 ins. diar. by 24 ins. stroke, developing about 500 h.p. Steam will be supplied by a Scotch marine single ended boiler, 12 ft. diar., at a pressure of 150 lbs. The air pumps, 12 ins. by 12 ins. stroke, of the latest design, will be driven from the low pressure cross head. The circulating pump will be independent, direct connected and steam driven, the main feed pump direct acting, and the engine feed pump, driven by the air pump cross head, as also will be the engine bilge pump. Steam steering gear is being installed, with steam winches. and complete electric lighting equipment.

The Purchasing Agents' Guide

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Acetylene
Commercial Acetylene Co.........Toronto.

Aerated Waters
E. L. Drewry ....Winnipeg.

Air Brakes and Fittings
Allis-Chalmers-Bullock Ltd. ....Montreal.
Canadian Westinghouse Co. Hamilton, Ont.

Ales
E. L. Drewry ....Winnipeg.

Alloys
American Vanadium Co....Pittsburg, Pa.

Angle Bars
Montreal Rolling Mills Co.......Montreal.
Nova Scotia S. & C. Co., New Glasgow, N.S.
Steel Co. of Canada, Ltd., Hamilton, Ont.

Anti Rail Creepers
The Holden Co., Ltd............Montreal.

Automobiles
Preston Car & Coach Co...Preston, Ont.

Axes
James Smart Mfg. Co.....Brockville, Ont.

Axles
Canadian Car & Foundry Co....Montreal.
James Hutton & Co. ....Montreal.
Nova Scotia S. & C. Co., New Glasgow, N.S.
Jas. W. Pyke & Co............Montreal.
Steel Co. of Canada, Ltd., Hamilton, Ont.

Babbit Metal
Tallman Brass & Metal Co., Hamilton, Ont.

Beacons
International Marine Signal Co....Ottawa.

Bearings, Side
Canadian Car & Foundry Co....Montreal.
Chicago Railway Equipment Co..Chicago.

Blankets and Bedding
The Hudson's Bay Co. ....

Boiler Checks
Nathan Manufacturing Co......New York.

Boilers
Babcock & Wilcox, Ltd.........Montreal.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Boilers, Portable
Babcock & Wilcox, Ltd.........Montreal.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Boilers, Stationary and Marine
Babcock & Wilcox, Ltd.........Montreal.
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Boiler Staybolt Iron or Steel Bars
Falls Hollow Staybolt Co..Cuyahoga Falls.

Boilers, Steam
Babcock & Wilcox, Ltd.........Montreal.
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Boilers, Water Tube
Babcock & Wilcox, Ltd.........Montreal.
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Bolsters
Canadian Car & Foundry Co....Montreal.
Canadian Ry. Equipment Co., Welland, Ont.

Bolts, Bridge
Montreal Rolling Mills Co.......Montreal.

Bolt Cutters
London Machine Tool Co., Ltd., Hamilton.

Bolts, Track
Montreal Rolling Mills Co.......Montreal.
Nova Scotia S. & C. Co., New Glasgow, N.S.

Borers, Car Wheel
John Bertram & Sons Co....Dundas, Ont.

Boring Mills
London Machine Tool Co., Ltd., Hamilton.

Braces, Cross Arm
Montreal Rolling Mills Co.......Montreal.

Brake Beams
Canadian Car & Foundry Co....Montreal.
Chicago Railway Equipment Co..Chicago.

Brake Shoes
Am. Brake Shoe & F'dry Co., Mahwah, N.J.
Canada Iron Corporation, Ltd..Montreal.
The Holden Co., Ltd............Montreal.

Brake Shoes, Locomotive Driver
Am. Brake Shoe & F'dry Co., Mahwah, N.J.
Canada Iron Corporation, Ltd..Montreal.
Railway Materials Co. ....New York.

Brasses, Car
T. McAvity & Sons ....St. John, N.B.

Bridge Numbers
Acton Burrows, Limited ....Toronto.

Bridges
Canadian Bridge Co.....Walkerville, Ont.
Dominion Bridge Co.............Montreal.

Bronze
American Vanadium Co....Pittsburg, Pa.

Buckets, Coal, Ore and Concrete
M. Beatty & Sons, Ltd....Welland, Ont.
Brown Hoisting Machinery Co., Cleveland.
Williams & Wilson, Ltd ....Montreal.

Buildings, Steel
Canadian Bridge Co.....Walkerville, Ont.
Dominion Bridge Co.............Montreal.

Bumping Posts
Dominion Equip. & Supply Co., Winnipeg.
The Holden Co., Ltd............Montreal.
McCord & Co. ....Chicago, Ill.
Whyte Railway Signal Co. ....Toronto

Buoys
International Marine Signal Co....Ottawa.

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Chapman & Walker, Ltd........Toronto.
E. F. Phillips Electrical Works.Montreal.
The Wire and Cable Co..........Montreal.

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W. H. Coddington ....Hamilton, Ont.

Car Furnishings
Guilford S. Wood..............Chicago, Ill.

Car Loaders, Box
Mussens, Ltd. ....Montreal.

Car Movers
F. H. Hopkins & Co..............Montreal.
Mussens, Ltd. ....Montreal.

Cars
Crossen Car Mfg. Co........Cobourg, Ont.
Canadian Car & Foundry Co....Montreal.
J. T. Gardner ....Chicago, Ill.
Hart-Otis Car Co., Ltd.........Montreal.
The Males Co.. .... Cincinnati. O.
Ottawa Car Co., Ltd..............Ottawa.
Pay-As-You-Enter Car Co....New York.
Preston Car and Coach Co., Ltd..Preston.
Russel Wheel & Fdry Co...Detroit, Mich.
Silliker Car Co., Ltd........Halifax, N.S.

Cars, Logging
Peteler Car Co. ....Minneapolis, Minn.
Russel Wheel & Fdry Co...Detroit, Mich.

Castings
American Vanadium Co....Pittsburg. Pa.
Canadian Car & Foundry Co....Montreal.
Crossen Car Mfg. Co........Cobourg, Ont.
John Inglis Co., Ltd. ....Toronto.
Lumen Bearing Co.....West Toronto, Ont.
Russel Wheel & Fdry Co...Detroit, Mich.
Standard Steel Works Co..Philadelphia, Pa.

Castings, Brass
Canadian Bronze Co. ....Montreal.
Canada Iron Corporation, Ltd...Montreal.
Kerr Engine Co. ....Walkerville, Ont.
Lumen Bearing Co.....West Toronto, Ont.
Tallman Brass & Metal Co., Ltd.Hamilton.

Castings, Car
Am. Brake Shoe & F'dry Co., Mahwah, N J.
Canada Iron Corporation, Ltd...Montreal.
Russel Wheel & Fdry.. Co..Detroit, Mich.

Castings, Iron
Allis-Chalmers-Bullock Ltd. ....Montreal.
Canada Iron Corporation, Ltd...Montreal.
Kerr Engine Co..........Walkerville, Ont.
Russel Wheel & Fdry.. Co..Detroit, Mich.

Castings, Iron and Steel
Am. Brake Shoe & F'dry Co., Mahwah, N.J.

Castings, Malleable
Galt Malleable Iron Co.........Galt, Ont.
Taylor & Arnold ....Montreal.

Castings, Manganese Steel
Lumen Bearing Co.....West Toronto. Ont.
Montreal Steel Works, Ltd......Montreal.

Castings, Steel
American Vanadium Co....Pittsburg, Pa.
Canada Iron Corporation, Ltd..Montreal.
W. Kennedy & Sons, Ltd., Owen So'd, Ont.
Montreal Steel Works ....Montreal.

Chains
B. J. Coghlin & Co..............Montreal.

Chisels for Pneumatic Chipping Hammers
Edgar Allen & Co., Ltd. .... Montreal.
Cleveland Punch & Shear Wks., Cleveland.

Closets, Car
Duner Co. ....Chicago, Ill.

Coal
Nova Scotia S. & C. Co., New Glasgow, N.S.

Compressors, Air
Allis-Chalmers-Bullock Ltd. ....Montreal.
The American Well Works...Aurora, Ill.
Canadian Rand Co. ....Montreal.
The Holden Co., Ltd..............Montreal.
John Inglis Co., Ltd. ....Toronto.

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Mussens, Limited ....Montreal.

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Rice Lewis & Son................Toronto.
Peteler Car Co. ......Minneapolis, Minn.
Russel Wheel & Fdry.. Co..Detroit, Mich.
Williams & Wilson, Ltd .... Montreal.

Conveyors, Coal and Ash
Babcock & Wilcox, Ltd.........Montreal.
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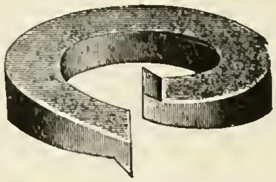

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Couplers, Car and Locomotive
Canadian Car & Foundry Co...Montreal.
McConway & Torley Co....Pittsburg, Pa.
Montreal Steel Works, Ltd.....Montreal.
Taylor & Arnold ....Montreal.

Couplers, Steam
Consolidated Car Heating Co., Albany, N.Y

Cranes
Brown Hoisting Machinery Co..Cleveland.
Northern Engineering Wks..Detroit, Mich.
Williams & Wilson, Ltd ....Montreal.

Cranes, Electric
Babcock & Wilcox ....Montreal.
Dominion Bridge Co. ....Montreal.
Mussens, Limited ....Montreal.
Northern Engineering Wks, Detroit, Mich.

Cranes, Locomotive
American Hoist & Derrick Co., St. Paul, M.
The Males Co., ... Cincinnati, O.

Cranes, Wrecking
Mussens, Limited ....Montreal.

Crowbars
B. J. Coghlin & Co.............Montreal.

Curtains and Fixtures, Car
The Holden Co., Ltd...........Montreal.
Preston Car & Coach Co...Preston, Ont.

Cuts
Acton Burrows, Limited ....Toronto.

Cylinders
American Vanadium Co....Pittsburg, Pa.

Derricks
American Hoist & Derrick Co., St. Paul, M.
M. Beatty & Sons ....Welland, Ont.
Mussens, Limited ....Montreal.

Diaphragms, Vestibule
Guilford S. Wood.............Chicago, Ill.

Dies
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co. ......Hespeler, Ont.

Ditchers
M. Beatty & Sons ....Welland, Ont.

Diving Outfits
John Date ....Montreal.
Mussens, Limited ....Montreal.

Doors, Steel Rolling
Mussens, Limited ....Montreal.

Door Signs
Acton Burrows, Limited ....Toronto.

Draft Gear
The Holden Co., Ltd...........Montreal.
McCord & Co. ....Chicago, Ill.
Standard Coupler Co.....New York City.
T. H. Symington & Co.....Baltimore, Md.

Draughtsmen's Supplies
John A. Hart & Co ....Winnipeg.

Dredges
M. Beatty & Sons ....Welland, Ont.
Polson Iron Works, Ltd.........Toronto.

Drills, Air
Canadian Rand Co...............Montreal.

Drills, Flat Twisted
Cleveland Punch & Shear Wks., Cleveland.

Drills, Radial
London Machine Tool Co., Ltd., Hamilton.

Dry Goods
The Hudson's Bay Co....................

Dump Cars, Contractors'
Dominion Equip. & Supply Co., Winnipeg.
F. H. Hopkins & Co............Montreal.
Peteler Car Co. ......Minneapolis, Minn.
Western Wheeled Scraper Co..Aurora, Ill.

Dump Cars, Hand
Meaford Wheelba'ow Co., Ltd., Meaf'd. Ont.

Dynamos
Northern Electric & Mfg. Co.....Montreal.

Dynamo and Electric Castings
Am. Brake Shoe & F'dry Co., Mahwah, N.J.

Economizers
Babcock & Wilcox, Ltd..........Montreal.

Electric Apparatus
Allis-Chalmers-Bullock Ltd. ....Montreal.
Chapman & Walker, Ltd........Toronto.
Northern Electric & Mfg. Co.....Montreal.

Electric Car Route Signs
Acton Burrows, Limited ....Toronto.
Preston Car & Coach Co...Preston, Ont.

Electric Light Plant
Allis-Chalmers-Bullock Ltd. ....Montreal.

Elevators, Grain
John S. Metcalf Co. ....Chicago, Ill.

Enameled Iron Signs
Acton Burrows, Limited ....Toronto.

Engines, Automatic
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Russel Wheel & Fdry Co..Detroit, Mich.

Engines, Corliss
Allis-Chalmers-Bullock Ltd. ....Montreal.
John Inglis Co., Ltd. ....Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Engines, Gas
Allis-Chalmers-Bullock Ltd. ....Montreal.
Williams & Wilson, Ltd ....Montreal.

Engines, Gasolene
Canadian Fairbanks Co., Ltd...Montreal.
Ontario Wind Engine & Pump Co. Toronto.

Engines, Hoisting
Allis-Chalmers-Bullock Ltd. ....Montreal.
American Hoist & Derrick Co., St. Paul. M.
M. Beatty & Sons ....Welland, Ont.
Dominion Equip. & Supply Co., Winnipeg.
John Inglis Co.. Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Russel Wheel & Fdry. Co..Detroit, Mich.
Williams & Wilson. Ltd ....Montreal.

Engines, Pumping
John Inglis Co., Ltd. ....Toronto.

Engines, Stationary and Marine
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Engines, Stationery, Appliances
Nathan Manufacturing Co......New York.

Engines, Steam
Allis-Chalmers-Bullock Ltd. ....Montreal.

Engineers, Consulting
Alfred Lovell ....Philadelphia, Pa.

Explosives
Standard Explosives, Limited ..Montreal.

Express Office Signs
Acton Burrows, Limited ....Toronto.

Fencing
Owen Sound Wire Fence Co., Ltd., O'n S'd.

Ferro-Vanadium
American Vanadium Co. ..Pittsburg, Pa.

Fire Appliances
Miller Chemical Engine Co...Chicago, Ill.

Flags
The Hudson's Bay Co....................

Flour
The Hudson's Bay Co....................

Forgings
American Vanadium Co. ..Pittsburg, Pa.
Canadian Car & Foundry Co...Montreal.
Cleveland City Forge & Iron Co., Cleveland.
Crossen Car Mfg. Co........Cobourg, Ont.
Nova Scotia S. & C. Co., New Glasgow, N.S.
Standard Steel Works Co., Philadelphia, Pa.
Steel Co. of Canada, Ltd. ..Hamilton, Ont.

Foundry Appliances
Goldschmidt Thermit Co. ....Toronto.
Ont. Wind Eng. & Pump Co., Ltd., Toronto.

Frames, Steel for Cars
Canadian Ry. Equip't Co., Welland, Ont.

Frogs
Canadian Ramapo Iron Wks.Niagara Falls.
Johnson, Wrecking Frog Co..Cleveland, O.
Peteler Car Co. ......Minneapolis, Minn.

Furnaces, Corrugated
Continental Iron Works....Brooklyn, N.Y.

Furnaces, Oil
Railway Materials Co. ....New York.

Furnaces, Shop
Railway Materials Co. ....New York.

Gaskets
The Holden Co., Ltd...........Montreal.
McCord & Co. ....Chicago, Ill.

Gates
Owen Sound Wire Fence Co., Ltd., O'n S'd.

Gates, Crossing
The N. L. Piper Ry. Supply Co...Toronto.
Whyte Railway Signal Co. ....Toronto

Gauge Cocks
Nathan Manufacturing Co......New York.

Gauges, Locomotive
Taylor & Arnold ....Montreal.
Utica Steam Gauge Co..........New York.

Gauges, Water
Nathan Manufacturing Co......New York.

Gears
American Vanadium Co. ..Pittsburg, Pa.

Generators, Electric
Northern Electric & Mfg. Co.....Montreal.

Grates, Shaking
Babcock & Wilcox, Ltd.........Montreal
Polson Iron Works, Ltd.........Toronto.

Groceries
The Hudson's Bay Co....................

Hammers, Cast Steel
American Brake Shoe & Fdry Co.Mahwah.
James Smart Mfg. Co....Brockville, Ont.

Handcars
Canadian Fairbanks Co., Ltd...Montreal.
Crossen Car Mfg. Co.......Cobourg, Ont.
Dominion Equip. & Supply Co., Winnipeg.
F. H. Hopkins & Co............Montreal.
Mussens, Limited ....Montreal.
Rice Lewis & Son................Toronto.
Whyte Railway Signal Co. ....Toronto

Hardware
The Hudson's Bay Co....................
Rice Lewis & Son................Toronto.

Hats
W. H. Coddington.........Hamilton, Ont.

Headlights
Commercial Acetylene Co.........Toronto.
The N. L. Piper Ry. Supply Co...Toronto.
Pyle National Elec. Headlight Co..Chicago.

Headlinings
Crossen Car Mfg. Co.......Cobourg, Ont.

Heaters, Feedwater
Robb Engineering Co., Ltd..Amherst, N.S.

Heaters, Oil-burning
Tate, Jones & Co. Inc. ..... Pittsburg, Pa.

Heating, Car
Canadian Gold Car H'g & L'g Co..Montreal.
Consolidated Car Heating Co., Albany, N Y.
Safety Car Heating & L'ting Co.New York
United States Light & Heat. Co.New York

Hoists, Electric
American Hoist & Derrick Co., St. Paul, M.

Hoists, Pneumatic
Taylor & Arnold ....Montreal.

Hoopers, Car, Wet or Dry
Duner Co. ....Chicago, Ill

Hose, Air Brake and Steam
Guilford S. Wood.............Chicago, Ill

Hydrants
Canadian Fairbanks Co., Ltd...Montreal
Kerr Engine Co.........Walkerville, Ont

Illustrations
Acton Burrows, Limited..........Toronto

Injectors
T. McAvity & Sons ....St. John, N.B
Nathan Manufacturing Co......New York.

Inspections
R. W. Hunt & Co...............Montreal.

Insurance, Accident
Can. Casualty & Boiler Ins. Co...Toronto.
Canadian Ry. Accident Ins. Co...Ottawa.
Imp. Guarantee & Acc. Ins. Co..Toronto.
London Guar. & Accident Co., Ltd.Toronto

Insurance, Boiler
Can. Casualty & Boiler Ins. Co...Toronto.

Interlocking Plant and Signals
Montreal Steel Works, Ltd......Montreal
Railway Signal Co. of Canada....Montreal.
Saxby & Farmer, Ltd...........Montreal.

Iron, Pig
Nova Scotia S. & C. Co., New Glasgow, N.S.

Iron Signs
Acton Burrows, Limited..........Toronto.

Iron Staybolt Bars
Falls Hollow Staybolt Co..Cuyahoga Falls.

Jacks
Canadian Fairbanks Co., Ltd...Montreal.
Dominion Equip. & Supply Co., Winnipeg.
H. & E. Lifting Jack Co..Waterville, Que.
F. H. Hopkins & Co., Ltd.....Montreal.
Montreal Steel Works, Ltd......Montreal.
Mussens, Limited ....Montreal.
A. O. Norton ....Coaticook, Que.
James Smart Mfg. Co....Brockville, Ont.
Whyte Railway Signal Co. ....Toronto
Williams & Wilson, Ltd ....Montreal.

Japans
The Dougal Varnish Co., Ltd...Montreal.

Journal Bearings
Canadian Bronze Co. ....Montreal.
Crossen Car Mfg. Co. .....Cobourg, Ont.
Kerr Engine Co. ....Walkerville, Ont.
Jas. W. Pyke & Co. ....Montreal.

Journal Boxes
The Holden Co., Ltd...........Montreal.
McCord & Co. ....Chicago, Ill.

Lager Beer, &c.
E. L. Drewry ....Winnipeg.

Lagging and Covering, Locomotive
Taylor & Arnold ....Montreal.

Lamps, Arc
Northern Electric & Mfg. Co.....Montreal.

Lamps, Gas
Commercial Acetylene Co.........Toronto.

Lamps, Incandescent
Canadian Westinghouse Co..Hamilton, Ont.

Lamps and Lanterns
The Hudson's Bay Co....................
The Hiram L. Piper Co..........Montreal.
The N. L. Piper Ry. Supply Co..Toronto.

Lamps, Switch
The N. L. Piper Ry. Supply Co..Toronto.

Lathes
John Bertram & Sons Co.....Dundas, Ont.
Williams & Wilson, Ltd ....Montreal.

Lighting, Buoy
Blaugas Co. of Canada. Ltd.....Montreal
International Marine Signal Co. .. Ottawa.
Safety Car Htg. & Ltg. Co.. ....New York

Lighting, Car
Blaugas Co. of Canada. Ltd.....Montreal
Canadian Gold Car H'g & L'g Co.Montreal.
Commercial Acetylene Co.........Toronto.
Safety Car Heating & L'ting Co.New York.
United States Light & Heat. Co.New York

Lighting, Signal
Commercial Acetylene Co.........Toronto.

Lights, Contractors' and Wrecking
F. H. Hopkins & Co., Ltd.....Montreal.
Mussens, Limited ....Montreal

Locomotives, Compressed Air
Baldwin Locomotive Works..Philadelphia.
Canadian Locomotive Co..Kingston, Ont.
International Marine Signal Co...Ottawa.
Montreal Locomotive W'ks (Ltd.).Montreal.

Locomotives, Contractors'
Dominion Equip. & Supply Co., Winnipeg.

Locomotives, Electric
Baldwin Locomotive Works..Philadelphia.
Montreal Locomotive W'ks (Ltd.).Montreal.

Locomotives, Logging
Baldwin Locomotive Works..Philadelphia.
Canadian Locomotive Co..Kingston, Ont.

Locomotives, Rack
Baldwin Locomotive Works...Philadelphia.
Canadian Locomotive Co..Kingston, Ont.
Montreal Locomotive Works.....Montreal.

Locomotives, Steam
Baldwin Locomotive Works...Philadelphia
Canadian Fairbanks Co., Ltd...Montreal.
Canadian Locomotive Co. ..Kingston, Ont.
J. T. Gardner ....Chicago, Ill.
The Males Co.. .... Cincinnati, O.
Montreal Locomotive Works.....Montreal.
Vulcan Iron Works .....Wilkesbarre, Pa

Lorries, Tracklaying
Crossen Car Mfg. Co.......Cobourg, Ont.
F. H. Hopkins & Co............Montreal.

Lubricators
McCord & Co. ....Chicago, Ill.
Nathan Manufacturing Co......New York
Taylor & Arnold ....Montreal.

- **Lumber**
  - Imperial Timber & Trading Co., Vancouver.
  - Parry Sound Lumber Co. ....Toronto.
- **Machines and Plant, Contractors'**
  - American Hoist & Derrick Co., St. Paul, M.
  - M. Beatty & Sons ....Welland, Ont.
  - Canadian Fairbanks Co., Ltd...Montreal.
  - J. T. Gardner ....Chicago, Ill.
  - F. H. Hopkins & Co. ....Montreal.
  - Mussens, Limited ....Montreal.
- **Machines and Tools, Prospecting**
  - The American Well Works...Aurora, Ill.
- **Machines and Tools, Well Drilling**
  - The American Well Works...Aurora, Ill.
- **Machines, Boring and Turning**
  - John Bertram & Sons Co.....Dundas, Ont.
- **Machines, Car Shop**
  - John Bertram & Sons Co., Ltd.Dundas, Ont.
  - Greenlee Bros. & Co. ....Chicago, Ill.
- **Machines, Cement**
  - James W. Pyke & Co. ....Montreal.
- **Machines, Drilling**
  - John Bertram & Sons Co. ..Dundas, Ont.
- **Machines, Earth and Stone Handling**
  - Western Wheeled Scraper Co..Aurora, Ill.
- **Machines, Hoisting**
  - American Hoist & Derrick Co. St. Paul, M.
  - Brown Hoisting Machinery Co..Cleveland.
- **Machines, Logging**
  - Russel Wheel & Fdry. Co..Detroit, Mich.
- **Machines, Milling**
  - John Bertram & Sons Co. ..Dundas, Ont.
- **Machines, Planing and Shaping**
  - John Bertram & Sons Co. ..Dundas, Ont.
  - Cleveland Punch & Shear Wks., Cleveland.
- **Machines, Radial Drilling**
  - John Bertram & Sons Co. ..Dundas, Ont.
- **Machines, Rivetting**
  - Long & Allstatter Co. .... Hamilton, Ohio.
- **Machines, Slotting**
  - John Bertram & Sons Co. ..Dundas, Ont.
- **Machines, Straightening**
  - Cleveland Punch & Shear Wks.Cleveland.
- **Machines, Tire Welding**
  - Long & Allstatter Co. .... Hamilton, Ohio.
- **Machines, Track**
  - Greenlee Bros. & Co. ....Chicago, Ill.
- **Machines, Tracklaying**
  - F. H. Hopkins & Co. ....Montreal.
- **Machines, Wood and Iron Working**
  - Canadian Fairbanks Co., Ltd...Montreal.
  - Williams & Wilson, Ltd ....Montreal.
- **Machine Tools**
  - John Bertram & Sons Co. ..Dundas, Ont.
  - Pratt & Whitney Co. ....Dundas, Ont.
- **Manhole Frames and Covers**
  - American Brake Shoe & F'dry Co.Mahwah.
  - Canada Iron Corporation, Ltd...Montreal.
- **Marine Repairs**
  - Goldschmidt Thermit Co. ....Toronto.
- **Marine Supplies**
  - Rice Lewis & Son................Toronto.
- **Metal, Babbit**
  - Tallman Brass & Metal Co., Hamilton. Ont.
- **Metals**
  - Goldschmidt Thermit Co. ....Toronto.
- **Metal Work, Structural**
  - Canadian Bridge Co.....Walkerville, Ont.
  - Dominion Bridge Co.............Montreal.
  - Montreal Locomotive Works.....Montreal.
  - Jas. W. Pyke & Co. ....Montreal.
- **Milepost Numbers**
  - Actun Burrows, Limited..........Toronto.
- **Motors**
  - Canadian Fairbanks Co., Ltd...Montreal.
  - McCord & Co. ....Chicago, Ill.
- **Motors, Electric**
  - Allis-Chalmers-Bullock Ltd. ....Montreal.
  - Canadian Crocker-Wheeler Co. ..Montreal.
  - Chapman & Walker, Ltd........Toronto.
  - Northern Electric & Mfg. Co.....Montreal.
- **Motor Generator Sets**
  - Allis-Chalmers-Bullock Ltd. ....Montreal.
  - Chapman & Walker, Ltd.........Toronto.
- **Motors, Turntable**
  - Taylor & Arnold ....Montreal.
- **Nickel**
  - The Orford Copper Co. ....New York.
- **Nickel for Nickel Steel**
  - The Orford Copper Co. ....New York.
- **Numbers**
  - Acton Burrows, Limited ....Toronto.
- **Nut Locks**
  - Positive Lock Washer Co. ..Newark, N.J.
- **Nuts, Clevis**
  - Cleveland City Forge & Iron Co.Cleveland.
- **Nuts, Square and Hexagon**
  - Montreal Rolling Mills Co.......Montreal.
- **Oakum**
  - The Hudson's Bay Co......................
- **Office Fittings**
  - Can. Office & Sch'l Furn. Co....Preston.
- **Office Signs**
  - Acton Burrows, Limited ....Toronto.
- **Oil Cups**
  - Nathan Manufacturing Co......New York.
- **Oils**
  - Galena Signal Oil Co..Franklin & Toronto.
- **Packing**
  - Anchor Packing Co. of Can., Ltd.,.Montreal
  - Greene, Tweed & Co. ....New York.
  - The N. L. Piper Ry. Supply Co...Toronto.
- **Paints**
  - R. F. Johnston Paint Co, Cincinnati, Ohio.
- **Pile Drivers, Railway**
  - F. H. Hopkins & Co. ....Montreal.
  - Mussens, Limited ....Montreal.
- **Pinch Bars**
  - The N. L. Piper Ry. Supply Co..Toronto.
- **Pipe, Culvert, Cast Iron**
  - Gartshore-Thompson Pipe Co...Hamilton.
- **Pipe, Gas, Cast Iron**
  - Gartshore-Thompson Pipe Co...Hamilton.
- **Pipe, Sewer, Cast Iron**
  - Gartshore-Thompson Pipe Co...Hamilton.
- **Pipe Stocks**
  - Butterfield & Co. ....Rock Island, Que.
  - A. B. Jardine & Co........Hespeler, Ont.
- **Pipe, Water (Cast Iron)**
  - Gartshore-Thompson Pipe Co...Hamilton.
- **Planers**
  - John Bertram & Sons Co. ..Dundas, Ont.
- **Platforms, Steel**
  - Standard Coupler Co. ....New York City.
- **Ploughs, Contractors'**
  - Meaford Wheelba'ow Co., Ltd., Meaf'd, Ont.
  - Mussens, Limited ....Montreal.
- **Porter**
  - E. L Drewry ....Winnipeg.
- **Preservative for Hose**
  - Guilford S. Wood..............Chicago, Ill.
- **Printing**
  - Southam Press ....Toronto.
- **Propellor Wheels**
  - W. Kennedy & Sons, Ltd., Owen So'd, Ont.
- **Pumps**
  - Canadian Fairbanks Co., Ltd...Montreal.
  - S. F. Bowser & Co., Ltd........Toronto
  - Ontario Wind Engine & Pump Co..Toronto
  - James Smart Mfg. Co....Brockville, Ont.
- **Pumps, Centrifugal**
  - The American Well Works...Aurora, Ill.
  - M. Beatty & Sons ....Welland, Ont.
  - John Inglis Co., Ltd. ....Toronto.
- **Pumps, Deep Well, Steam and Power**
  - The American Well Works....Aurora, Ill.
- **Pumps, Fire Pressure**
  - The American Well Works....Aurora, Ill.
- **Pumps, Irrigating**
  - The American Well Works....Aurora, Ill.
- **Pumps, Reclamation**
  - The American Well Works....Aurora, Ill.
- **Pumps, Sprinkler Systems**
  - The American Well Works....Aurora, Ill.
- **Pumps, Underwriters' Fire**
  - The American Well Works....Aurora, Ill
- **Punches and Shears**
  - Cleveland Punch & Shear-Wks., Cleveland.
  - Long & Allstatter Co. .... Hamilton, Ohio.
  - Williams & Wilson, Ltd ....Montreal.
- **Rail Benders, Roller**
  - Dominion Equip. & Supply Co., Winnipeg.
  - F. H. Hopkins & Co. ....Montreal.
  - Montreal Steel Works ....Montreal.
  - Whyte Railway Signal Co. ....Toronto
- **Rail Drilling Machines**
  - A. B. Jardine & Co. ....Hespeler, Ont.
  - Whyte Railway Signal Co. ....Toronto
- **Rails, new**
  - Dominion Iron & Steel Co....Sydney, N.S.
  - Drummond, McCall & Co.......Montreal.
  - J. T. Gardner ....Chicago, Ill.
  - J. J. Gartshore ....Toronto.
  - F. H. Hopkins & Co. ....Montreal.
  - Peteler Car Co. ......Minneapolis, Minn.
- **Rails, for relaying**
  - F. H. Hopkins & Co. ....Montreal.
  - J. J. Gartshore ....Toronto.
  - Mussens, Limited ....Montreal.
  - Provincial Steel Co., Ltd. .. Cobourg, Ont.
  - Jas. W. Pyke & Co. ....Montreal.
- **Rail Joints**
  - Goldschmidt Thermit Co. ......Toronto.
  - The Rail Joint Co. of Canada...Montreal.
  - Whyte Railway Signal Co. ....Toronto
- **Rails, Re-rolled**
  - Provincial Steel Co., Ltd. .. Cobourg, Ont
- **Railway Supplies**
  - Canadian Fairbanks Co., Ltd..Montreal.
  - T. McAvity & Sons ....St. John, N.B.
  - Burton W. Mudge & Co......Chicago, Ill.
  - The Hiram L. Piper Co........Montreal.
  - The N. L. Piper Ry. Supply Co..Toronto.
  - Rice Lewis & Son................Toronto.
  - Russel Wheel & Fdry. Co..Detroit, Mich.
  - Whyte Railway Signal Co. ....Toronto
  - Williams & Wilson, Ltd ....Montreal.
- **Reamers**
  - Butterfield & Co.......Rock Island, Que.
  - Cleveland Punch & Shear Wks.Cleveland.
  - A. B. Jardine & Co. ......Hespeler, Ont.
- **Replacers, Car and Locomotive**
  - Alexander Car Replacer Mfg. Co.Scranton.
  - Dominion Equip. & Supply Co., Winnipeg.
  - The Holden Co., Ltd............Montreal.
  - F. H. Hopkins & Co. ....Montreal.
  - Johnson, Wrecking Frog Co..Cleveland, O.
  - Whyte Railway Signal Co. ....Toronto
- **Rivets, Boiler, Bridge and Structural**
  - Montreal Rolling Mills Co.......Montreal.

The G. and S. W. Rwy., Albert Harbor Goods Station, Greenock, N.B.
"B. & W." 30 Tons Electric Travelling Goliath Crane, 70 Feet Span

BABCOCK & WILCOX
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Water Tube Steam Boilers
7,800,000 h.p. Land & } in use or
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Traders Bank Building

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THE
Railway and Marine World
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Devoted to Steam and Electric Railway, Marine, Grain Elevator, Express, Telegraph,
Telephone and Contractors' interests

Old Series, No. 240.
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For Subscription Rates,
See page 337.

TRANSITION CURVES.

*By Henry K. Wicksteed B. A. Sc., **M.** Can. Soc. C. E., Chief Engineer of Surveys, Mackenzie, Mann and Co. Ltd.*

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Mr. Wicksteed has recently written an introduction to the transition curve for a new edition of instructions to assistant and resident engineers Canadian Northern Ontario Ry., which is being got out. At our request he has kindly placed the matter at our disposal, and in transmitting it to us has written as follows:—

"We have tables and diagrams in our present little volume and most of the men have some idea of how to use and apply them, but in talking to them I find that not one in ten of them understands the underlying principles, the whys and the wherefores of the transition curve, and how he may work out the formulas himself, and on occasion do without the tables altogether. When one of them makes a mistake it is apt to be a very glaring and conspicuous one, and such as he would not have made if he had understood the raison d'etre of the curve, and in any case such an understanding is calculated to broaden his ideas and vastly increase his interest in his work and his efficiency.

"Mr. Howard's article in your February issue will, I think, do much to create an interest in the subject, but, even he assumes a considerable initial knowledge on the part of the reader and does not start from the beginning. I have endeavored to do so, and as we wish to make our little volume as useful as possible, I think we cannot do better than to invite your co-operation and ask through your columns for criticism and suggestions as to how we may best make the subject as clear and as simple as possible.

"It has been a hobby with me for nearly twenty years back, and I laid down then, and have since seen proved, the principle that 'the exact mathematical form of the curve used was of little consequence,' but that 'the form which would come into general use was that which could be most readily run on the ground with the least use of tables and formulæ.' That the curve which is the easiest to manipulate is also the most perfect theoretically, is a fortunate accident, but it is an accident nevertheless, and had it not happened so, we should have probably chosen some less perfect one on account of its greater simplicity.

"Just as the earlier railway engineers used the parabolic curve because the ordinates were easier to calculate than those of the circle, and they had no other method than that of ordinates to work with, when some inventive mind brought in the method of deflections, the circular curve immediately took its place, because easier to manipulate, and the parabola disappeared. Aside from the fact of its being a most useful, in fact, as we have come to believe, essential factor in railway alignment, the cubic parabola or quadratic curve is a very beautiful geometrical study in itself, and well worthy of a mathematician's attention."

In accordance with Mr. Wicksteed's suggestion, we will be pleased to receive criticisms or comments on it for publication in our columns. The paper follows:—

Henry K. Wicksteed, B.A.Sc., M.Can.Soc.C.E.,
Chief Engineer of Surveys Mackenzie Mann & Co. Ltd.

The object of the transition curve is to accomplish the super-elevation of the outside rail uniformly and gradually so that the elevation shall, at any and every point, be adapted to the curvature at that point. Inasmuch as the centrifugal force which the elevation is intended to offset is inversely proportional to the radius of the curve, it follows that if the rise of the outside rail over the inner is to be uniform throughout the transition, the radius of the curvature must diminish uniformly and regularly. In other words, the curve should be one of "uniform acceleration."

If the final curve into which we transide is a 5°, for example, and we divide the transition into five equal parts, the curvature at the ends of the several divisions should be 1°, 2°, 3°, 4° and 5° respectively. This has always been admitted, but it was not until the late A. M. Wellington investigated the properties of the ideal curve that it was deemed practicable to meet these requirements exactly and a number of more or less cumbersome substitutes were in use, so cumbersome and difficult of practical application that few engineers attempted to use or even understand them, and either nothing was done at all or a mere arbitrary allowance was made by offsetting the curve inwards so as to allow room for the flattening at the ends, the form which the flattening took being dependent altogether upon the artistic sense and eye of the section foreman.

Refer to figure 1.—Let A-B be a circular curve terminating at A in the tangent F-A. C is a parallel tangent, and C-B is the transition curve, and is such that it is bisected in length by the perpendicular A-G, and A-G is in its turn bisected by it. This is somewhat obvious and scarcely needs demonstration.

Another more remarkable property, which is not obvious, but is quite susceptible of demonstration, is that the angle B.D.E., representing the total angle of the transition, is always three times B.C.E., which is the tangential angle corresponding to the point B, at which D.B. is tangential to the curve. It follows that C.B.D.= B.D.E.—B.C.D. = 3 B.C.D.—B.C.D. =2 B.C.D.

Now, assuming as in our first suppositious case, that the constant curve A-B is 5°. By hypothesis our curve is uniformly accelerating from 0° to 5° at B, and the mean curvature must be 2° 30′. If we make C.B. 150 ft., then the total deflection B.D.E. must be 3° 45′, and the tangential angle B.C.E. ⅓ of this, or 1° 15′. Double the final curvature at B. to 10°, and B.C. proportionately to 300 ft., and we get B.D.E.=15° and B.C.E. =5°, or four times what we had in the first instance. In other words, the tangential angle to any point is proportional to the square of the distance of that point from the beginning or origin of the curve.

It will be further seen that as the curve accelerates uniformly the proper transition is got, not by scheming a separate curve for each degree or pitch of central circular curve, but by cutting off a standard transition at the proper point corresponding to the degree of the central curve. If we divide this standard into a number of equal chords, and designate the chord points P, P_1, P_2, P_3, etc., the transition for a 4° curve will be the same as that for a 10°, but we shall stop it in the one case at P_4, and run an ordinary 4° circular curve from

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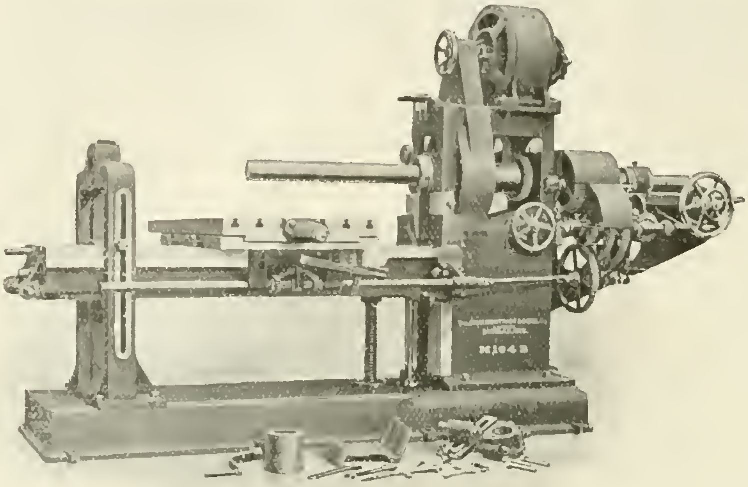

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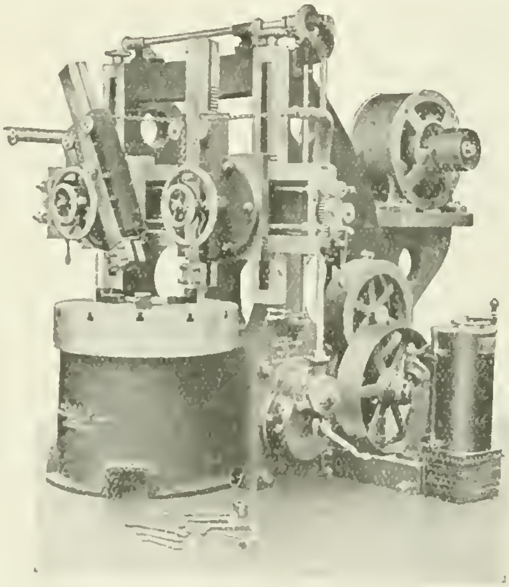

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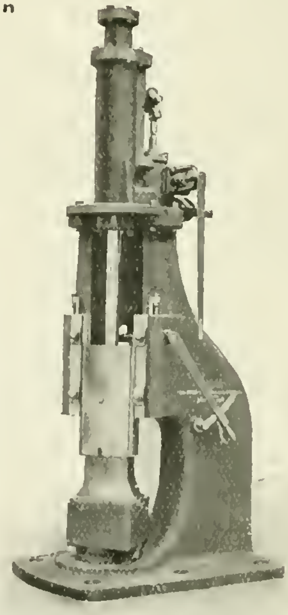

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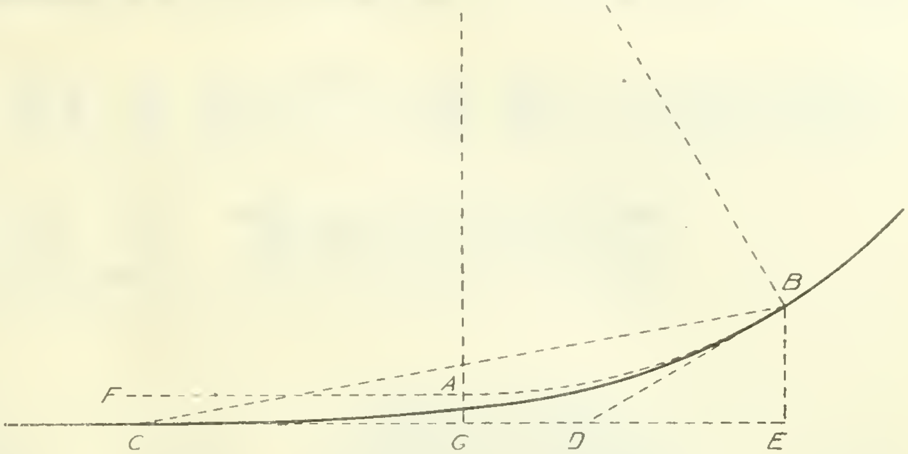
this point on, while in the other we shall continue it to P_{10}.

Now, as to the proper chord length. It has been found by experiment that in order to avoid any ill effects from an abrupt change in the position of the car body, from upright to inclined, the elevation of the outside rail should not gain on that of the inside more than about ¾ of an inch per second. At 60 miles an hour a train will travel 90 ft. (88 ft. exactly) in this time, and with our ordinary rule for elevating at ½ inch per degree of curvature, ¾ inch would correspond to a 1° 30′ curve. Proportionately, the distance for a 1° curve would be 60 ft., and this would be our chord length for a 60 mile speed. But this speed is not a safe one on curves of more than 3° or thereabouts. And as the longer chord length and resulting transition throws the curve inside its tangents much more than the short, consequently lessening its efficiency in avoiding an obstacle, it is desirable and quite permissible to use a shorter chord length in connection with the sharper curves and a corresponding less elevation of outer rail.

Following out this reasoning the writer suggested some years ago that inasmuch as the centrifugal force varied as to the square of the speed, and the permissible speed varied about in the inverse ratio of the degree of curvature, the proper formula for elevation should be one involving the square root of the degree of curvature, and that if E. represented the elevation in inches and D. the degrees of curvature, then the simple formula $E. = \sqrt{D}$ would give results not far from the best practice on curves between 1° and 10°. Engineering News commented very favorably on the suggestion, and it is believed to be in common use.

In view of these considerations, but in order to avoid unnecessary complication, three standard chord lengths, 60′, 45′ and 30′ will be used, the first for curves up to 3° or 4°, the second to 7°, and the third from 7° to 10°. Main line curves sharper than 10° are seldom used, and when they are resorted to are necessarily run over at very low speeds, and considerations other than centrifugal force, properly so called, make it desirable that the super-elevation should be still further reduced, hence, while it is still desirable to insert a transition of some kind, it is permissible to make it very short indeed. Our rule would give for a 16° curve, for instance, 4 ins. of elevation, while the older rule of ½ in. per degree would give 8 inches. This last is quite inadmissible, and the first more than will be found in good practice, and for the following reasons:—

Super-elevation counteracts the dynamical centrifugal force due to velocity, but there is a tendency to thrust against and override the outside rail of the curve which, while it acts in the same direction, is quite independent of the centrifugal force, and is due to the obliquity of the car axles to the radius of the curve. At low speeds and on very sharp curves it is very much the most important component of the two, and no moderate amount of super-elevation will counteract it to any considerable extent, but rather the reverse, for the wheel is held on the track by contact of the outside flange against the head of the rail, and is constantly trying to climb up over it, and only prevented from doing so by the weight of the car upon its journal. Decrease this weight by tilting the car inwards until we throw all the weight on the inside rail, and the outside wheel will inevitably climb over and the car be derailed. It follows that on a sharp curve with excessive elevation it is safer to move at a speed sufficient to generate sufficient centrifugal force to equalize the weight on the two wheels, than it is to crawl around it, and actual experience proves the truth of this apparent paradox.



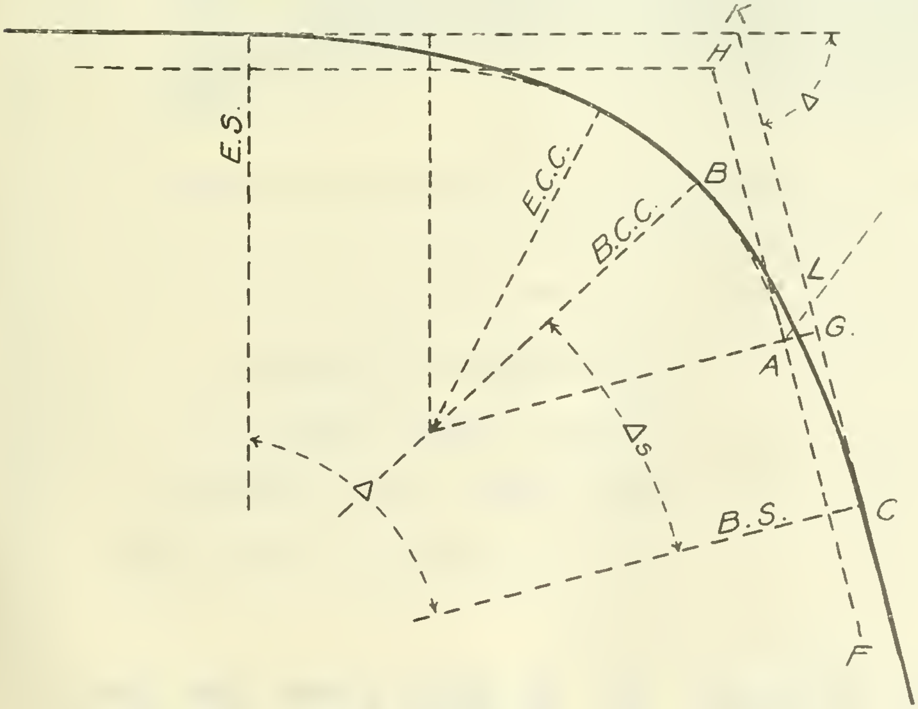
Transition Curves, Fig. 1.

To return to our transition curve. We have established a 60 ft. chord for curves up to 3°, and for this curvature we shall have three chords terminating at points P_1, P_2, P_3.

Refer to Figure 2.—The mean curvature is 1° 30′, and the total length 180 ft., giving a total deflection 2° 42′ or 162′ and a tangential angle for P_3 of $\frac{162}{3}$ or 54′. As it has been shown that the tangential angle to any point is proportional to the square of the distance of that point from the beginning of the transition curve, then the corresponding angles for the intermediate points P_1 and P_2 will be $(\frac{1}{3})^2$ or 1-9 and $(\frac{2}{3})^2$ or 4-9 respectively of the tangential angle at P_3, thus giving an angle of 6′ at P_1 and 24^1 at P_2. We have then for the 60 ft. chord transition the series of tangential angles:—

$$6 \times 1^2 = 6'; \quad 6' \times 2^2 = 24'; \quad 6' \times 3^2 = 54'.$$

To run the curve by the transit we set up on the initial point P. and turn off these successive angles from the tangent produced. Arrived at P_3, the end of the transition for a 3° curve, we put in a hub. Setting up over it we sight back at P. and turn off for the tangent at P_3 not 0° 54′, but double this or 1°, 48′ from which tangent we run in the 3° circular curve in the ordinary way. Arrived at the other end we simply reverse the process, or we may proceed as follows, still referring to fig. 2 At P_3 the 3° curve produced would swing inside the transition and leave it at exactly the same rate that the transition left the tangent at P. Our angles from the tan-



Transition Curves, Notation Diagram.

Recapitulation of Symbols and Formulas.

Offset of Main Curve = O = A.G.
Length of Spiral = S = B C.
Total Deflexion Angle of Spiral = Δs.
Total Deflection Ang e = Δ
Chord Length = c.
Deflexion Angle to 1st Chord Point — d. = $\frac{c}{10}$
Deflexion Angle to any Chord Point dn = $\frac{c}{10} \times n^2$
Degree of Constant Curve = D.
Sub Tangent of Constant Curve = T. = A.H.
Sub Tangent of Spiralled Curve = T_S = K.C.
Correction for Sub Tangent — O tan. ½ Δ = G.L.

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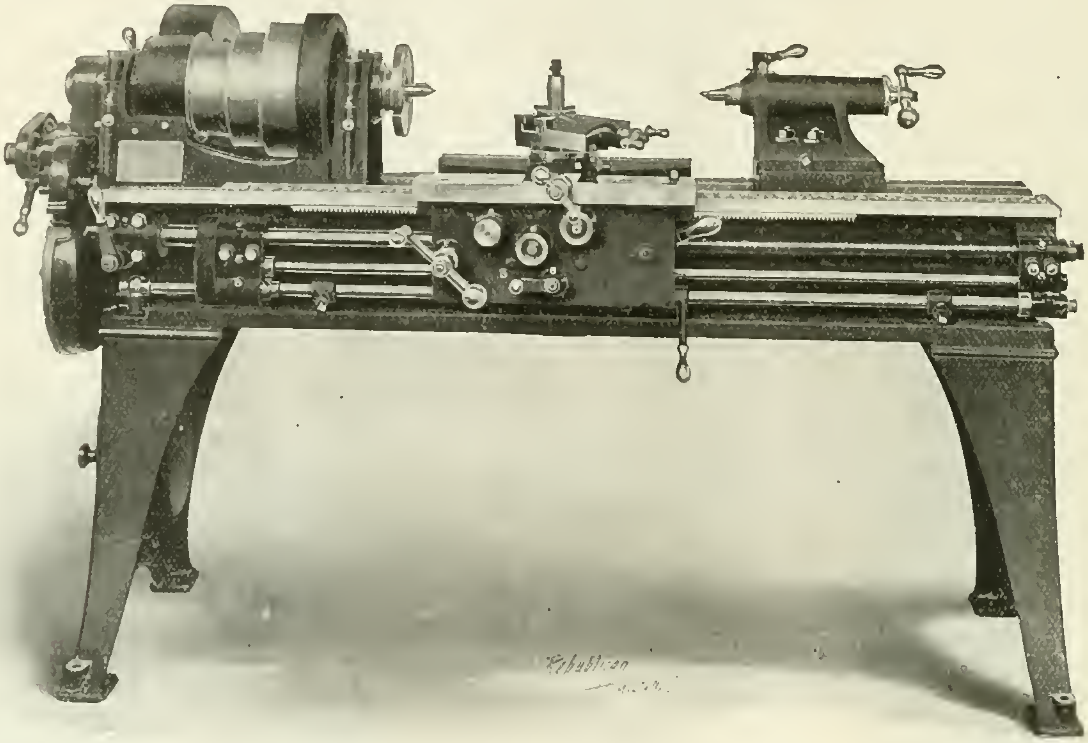

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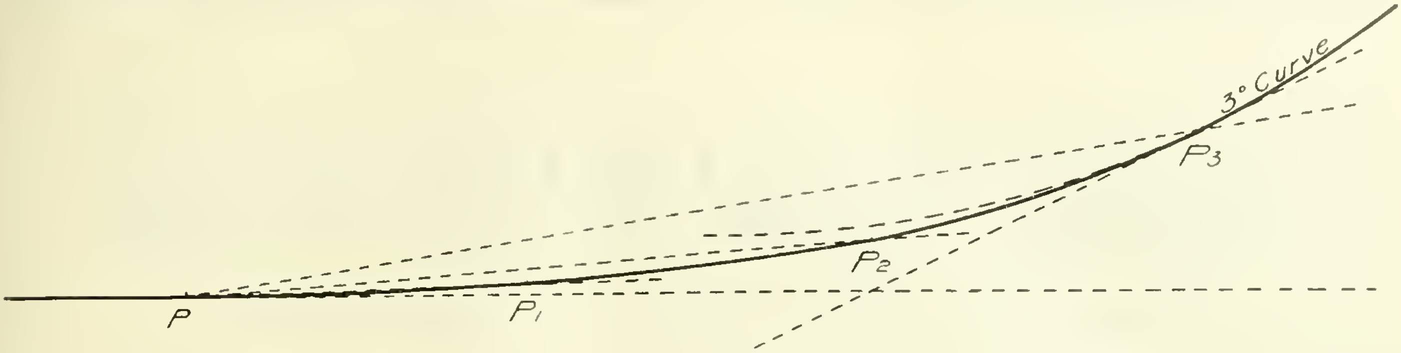


Transition Curves, Fig. 2.

gent at P_3 to P_2, P_1 and P are therefore those for the corresponding distances on a 3° curve minus the three initial spiral angles—

	P_2	P_1	P
Curve angles	0°54′	1°48′	2°42′
Spiral "	0°06′	0°24′	0°54′
Diff.	0°48′	1°24′	1°48′

By a similar train of reasoning we find the tangential angles for the 45 ft. chord to be—

4½′, 18′, 40½′, 1°.12′
1°.52½′, 2°.42′, 3°.40½′ &c.

And for the 30 ft. chord—

3′, 12′, 27′, 48′,
1°.15′, 1°.48′, 2°.27′,
3°.12′ &c.

We may express the above in a general formula in which C is the chord length, d. the tangential angle for the first chord, and N. the number of chord point. Then d (in minutes) $= \frac{C}{10}$ or generally the deflection angle for any chord point $d_n = \frac{C \times n^2}{10}$

This property of the curve in question of having its tangential angles proportional to the square of the distance has suggested that it be called the quadratic curve as distinguished from the circle where the angles are proportional to the distances themselves and which is the "simple curve."

A moment's consideration will show that if the angles are proportional to the squares the offsets from the initial tangent to the ends of several chords must be proportional to the cubes of the distance and this has led to the curve being styled the cubic parabola. As a matter of fact this property of the curve holds good only for arcs of small total angle and so long as the sines of the tangential angles are practically equal to the angles themselves, but within the limits of the ordinary transition curve, the curves are identical and the formulas may be used interchangeably just as in the case of the circle and the parabola.

This property gives us another method of laying down the curve on the ground in special cases by offsets from the initial tangent and also of calculating quickly the amount by which the tangent of the original circular curve will be displaced by the insertion of the transition ends. This displacement is the distance A—G in our original diagram (fig. 1).

By hypothesis A.G. is bisected by the transition, which in its turn is bisected by A. G.; C. E. is therefore twice C. G. and the offset B. E. 8 times (2^3) that at G. or 4 times A. G.

Suppose the central circular curve D to be 4°, the chord length C to be 45 ft., then the chord C.B. will be 180 ft., the tangential angle for B. will be $\frac{C}{10} \times 4^2 =$ 4.5×16=72′ or 1° 12′. The offset B.E. will be 180 ft. × Sin 1° 12′=180×.0209= 3.762 ft. and the displacement or offset A.G. which we will call $0 = \frac{B.E.}{4} = 0.94$ ft

We may put this in the form of a general formula, thus ("d" being the deflection angle to the first chord point):

$$0 = \frac{\text{Sin d. } D^2 \times D \times C}{4}$$

It has been pointed out that d. is essentially a small angle seldom exceeding 0° .06′ and d. D^2. the tangential angle for the long chord. seldom exceeds 5°, which it would reach when C is 30 ft. and D. is 10°. Consequently for practical purposes and field operations. w may assume the sine of the angle to be equal to the angle itself expressed in circular measure. The circular measure of an angle of d minutes is $\frac{d}{3438}$ (3438 being the number of minutes in the angular unit) and the formula given above becomes $0 = \frac{d.\ D^3\ C}{3834 \times 4}$. Memorizing this number will enable us to dispose with a table of sines, it is perhaps even simpler to remember the reciprocal of 3438, which is the circular measure of an angle of 0° 01′, and will be found in Chamber's tables as .00029. The formula in this case takes the form:—

$$0 = \frac{.00029 \times d \times D^3 \times C.}{4}$$

It should be noted carefully that while d the tangential angle for the first chord is expressed in minutes, D, the degree of central circular curve, is in degrees and decimals of a degree.

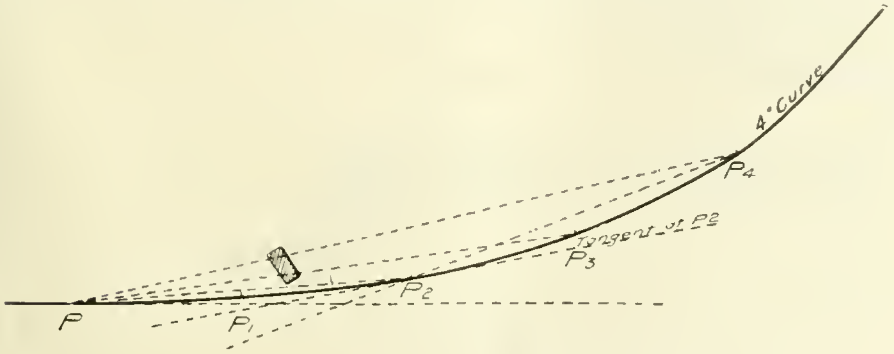
It will be seen from the foregoing that the offset for a 4° curve with 45 ft. chords is only 0.94 ft., which is quite insignificant on ordinary ground, but suppose the central curve D is doubled to 8°, the offset is then 8 times as much, or 7.5 ft., which on a steep side hill is very important indeed, but if we reduce C to 30 ft. d becomes 3′ and O=3.35 ft. It will be seen at once how much more freely we may indulge in long chords when dealing with flat curves. And in the preceeding discussion it has been shown that owing to the high speeds, which may be indulged in with the flatter curves it is there that the long transitions are most desirable.

In actual laying down of the transition or spiral on paper and subsequently on the ground, it will generally be sufficient to locate the B.S. or the beginning of the spiral further back by a distance equal to half the length of the spiral itself, in other words, the subtangent of the whole curve is longer than that of the unspiralled circular curve by this amount; this, however, is not mathematically correct, and in the comparatively rare cases where the two tangents are fixed exactly, and especially where the central angle is large and the displacement O considerable, it is necessary to add a correction which an ordinary trigonometrical construction will show amounts to—0 tan ½ Δ where Δ represents the angle of intersection between the initial and final tangents or the total deflection of the curve, including the spirals at either ends. The total distance from apex to beginning of spiral will then be

$$T_s = T + \tfrac{1}{2}S + O \tan \tfrac{1}{2} \Delta$$

The angles to the successive chord points to be turned off by an instrument set up at B.S. will be readily computed from the foregoing, but suppose we cannot see the B.C.C. or beginning of constant curvature, and have to set up at an intermediate point, as an example refer to figure 3.

Let us assume a 60 ft. chord spiral to a 4° curve; the spiral S. is 240 ft. and the total tangential angle to the B.C.C., which will be at P_4, will be $6_3 \times 16$=1° 36′, but owing to an obstacle we cannot see so far and have to put in a hub at P_2 and sighting back at the B.S (P) we turn 48′ to the tangent of the spiral P_2: the curvature at this point is 2°, and the spiral from this point forward leaves the 2° curve at exactly the same rate as it left the initial tangent at P. If the 2° curve be continued the angle to P_3 and P_4 would be 48+36=1° 24′ and 48+72=2° 00′. With the spiral continued they will be 48+36+6=1° 30′ and



Transition Curves, Fig. 3.

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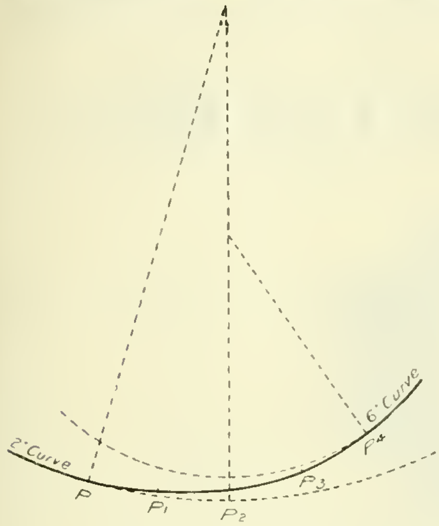


Transition Curves, Fig. 4.

48+72+24=2° 24'. Arriving at and setting up at P4 and sighting back at P2, the angle to the tangent at P4 (where the curvature is 4°) will be that for 120 ft. of a 4° curve less the spiral deflection for two chords, or 2° 24'—24'= 2° 00', and from this we run in our circular curve in the ordinary way.

As these additions and calculations, although simple in themselves, are apt to confuse a novice, it will be well for him to keep his final deflections at each point on a separate column, so that he may add them up and check them with the proper total deflections at any point. In this case we have turned off

at P 0° 24'
at P2 2° 24'
at P4 2° 00'
Total..4° 48'

If we had sighted through from P to P4 we should have deflected

at P 1° 36'
at P_1 3° 12'
Total..4° 48'

Which shows that our figuring is correct.

Arrived at the E.C.C., or end of constant curve, the process is identical. We turn off from the tangent of the circular curve the angle corresponding to 240 ft. of a 4° curve, less the tangential angle for 4 chords of the spiral; 4° 48'—1° 36'=3° 12', and at the E.S. or end of spiral 1° 36' to the final tangent, which gives us a total of 4° 48', as before.

Refer to figure 4.—Spirals between two arms of a compound curve are treated precisely the same way, and the reasoning is exactly the same. In the case of a 2° running into a 6° for instance, we subtract the one "D" from the other, leaving 4°, and run in four chords of say 60 ft. The angles are the same as before, except that as we start from a 2° instead of a tangent, we must add the equivalent angles for the 2° curve, and the series becomes for P_1 6'+36=0° 42'; for P_2, 24+1° 12'=1° 36'; for P_3, 54'+1° 48'=2° 42', and for P_4, 1° 36'+2° 24'=4° 00'. At P_4 we are on a 6° curve, so that we turn off from our back sight on P, 7° 12'-1° 36'=5° 36^3 to our tangent at P_4.

Checking up, our final deflections are

at P 4° 00'
at P_4 5° 36'
Total ..9° 36'

As our mean curvature between the two points is $\frac{2+6}{2}=4^\circ$, and the distance is 240 ft., our deflection should be 9° 36', which proves our work, as before.

Refer to figure 5.—The transition between two reverse curves can be treated in the same way, calling the angles to R+ and those to L—, and taking the algebraic difference between them. A 4° R merging into a 4° L would be equivalent to an 8° curve and require 8 chords..

The deflections will be for 60 ft. chords:—

To P_1 1° 12'— 6'=1° .06'
To P_2 2° 24'—0° .24'=2° .00'
To P_3 3° 36'—0° .54'=2° .42'
To P_6 7° 12'—3° .36'=3° .36'
To P_5 6° 00'—2° .30'=3° .30'
Point of reversal } To P_4 4° 48'—1° .36'=3° .12'
To P_7 8° 24'—4° .54'=3° .30'
To P_8 9° 36'—6° .24'=3° .12'

In this case it will be noticed that there is the same deflection to P4 and to P8, which means that the long chord of 480 ft. from P to P8 will pass through P4, the point of reversal, which it should obviously do, and this checks our arithmetic. These angles are all positive, or to right.

Setting up at P8 we reverse the process and turn 3° 12' to left, which puts us on a parallel tangent and is again obviously correct.

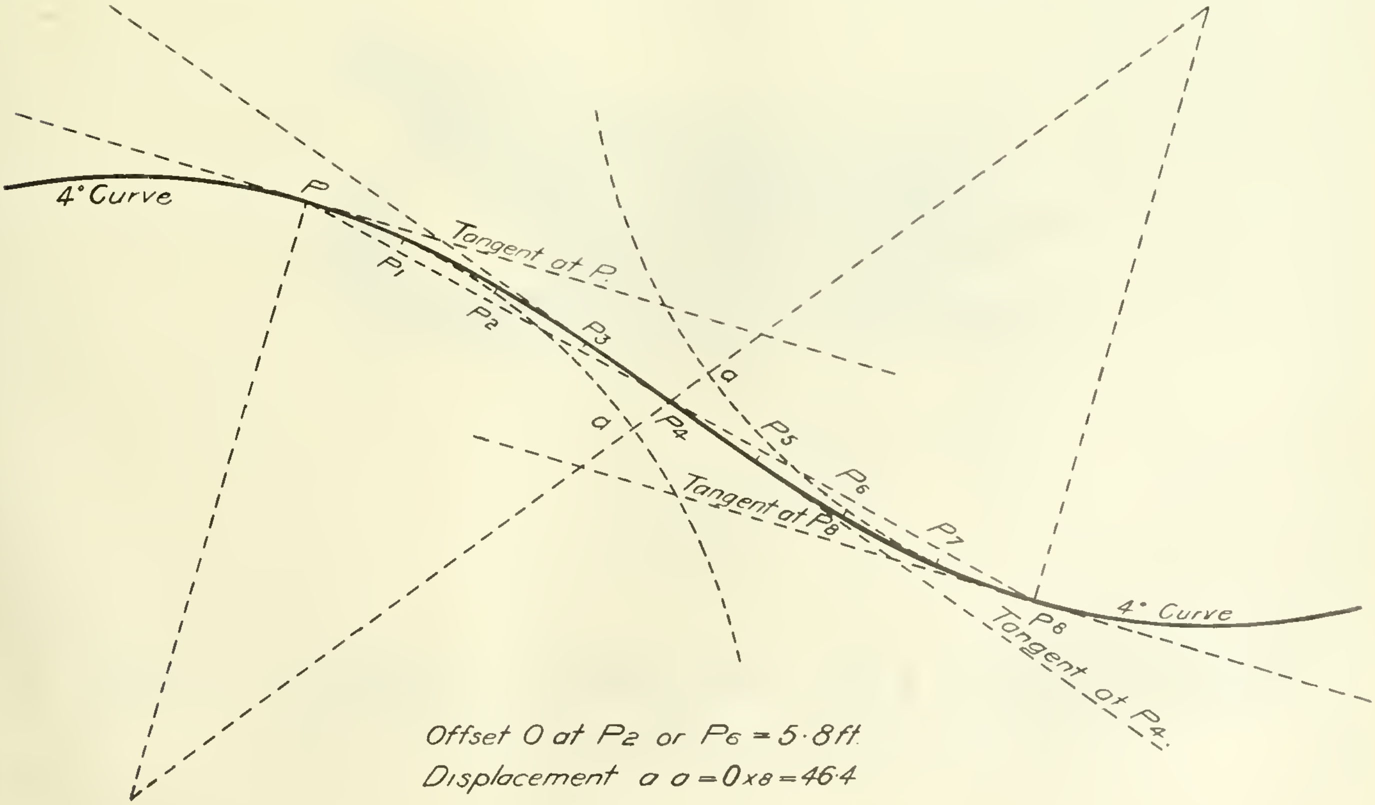
We have dealt in the preceding with a standard, or rather a series of standard chord lengths. It is sometimes convenient to depart a little from the standard. Suppose, for instance, we have schemed a long curve over rough ground to connect two existing tangents, but the end of the curve does not hit out just where it was intended to, but runs into a parallel tangent some feet away—we have no reason to suspect had work, and we have fitted the ground as we intended. It is simply a case of subtangents being difficult to chain accurately on very rough ground, or perhaps we have merely scaled them from the paper plan and cannot expect precision. Using a simple circular curve we should have no alternative but to go back to the B.C. and run the whole thing over again, or else "fudge" the end to make it come in. The transition curve offers us a very neat way of adjusting such a discrepancy by merely altering the chord length.

We evolved above the formulæ:—

$$0=\frac{d.D^3 C.}{4\times 3438} \text{ and } d.=\frac{C}{10}$$

Substituting the above value of d we get

$0=\frac{C^2\ D^3}{137520}$ or if D be a constant, 0 varies as the square of C or C as the square



Transition Curves, Fig. 5.

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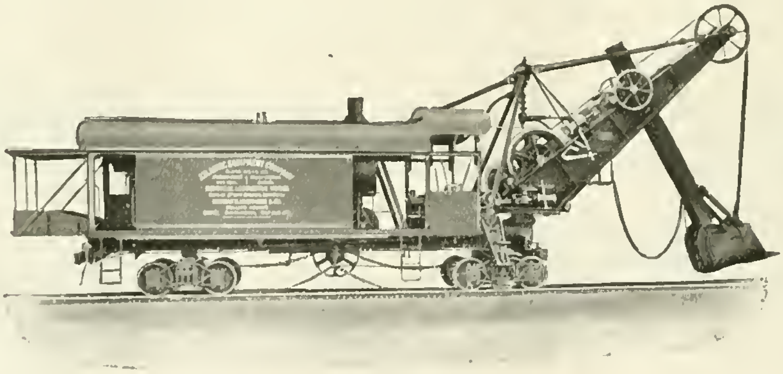

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root of 0—if the curve we have been running in was a 4° and the intended chord length was 60 ft.—0 would have been $\frac{3600\times64}{137520} = 1.67'$. Suppose it comes out 4 ft. Since C varies as the square root of O we have

$$C_1 : C :: \sqrt{4} : \sqrt{1.67}$$

$$C_1 = \frac{2\ C}{1.3} = \frac{120}{1.3} = 92.3 \text{ ft.}$$

By taking a chord length of 92 ft. then instead of 60 ft., we shall be able to correct the error and bring the curve out as it was intended to come in the first place.

Intercolonial Ry. and G. T. R. Arbitration.

The Minister of Railways in reply to questions in the House of Commons, recently said, a board of arbitrators was appointed under an agreement of Feb. 1, 1898, between the Intercolonial Ry. and the G.T.R., for the award and determination of questions arising under the agreement in June 1904. The questions before the arbitrators had reference to the issue of bills of lading, rating of freight, diversion of traffic, and disputed accounts.

The several matters were submitted for arbitration under the provisions of the agreement, either at the initiation of the Crown or of the G.T.R. and disposed of by the arbitrators, some in favor of the Crown, and others adversely. They were practically questions of interpretation of the provisions of agreement as applying to matters from time to time arising in connection with the operation of the respective railways, subject to the agreement. Other questions submitted were not disposed of by the board of arbitrators, owing to the death of the then chairman, the late A. C. Killam, and are now for the consideration of the board of arbitrators as at present constituted. The Intercolonial Ry. has paid the G.T.R. under the awards, already made, $49,737.97.

Recent British Columbia Legislation

The following acts having to do with transportation interests were passed at the recent session of the B.C. Legislature:—

Canadian North Eastern Ry.—New title of Portland Canal Short Line Ry.; extending time for construction, and authorizing building of additional lines.

Crow's Nest and Northern Ry.—Extending time for construction.

Department of Railways.—Authorizing creation of provincial department of railways.

Great Northern Ry. — Confirming agreement re False Creek, Vancouver.

Greenwood-Phoenix Tramway Co.—Incorporation.

Grouse Mountain Scenic Incline Ry. —Incorporation.

Mid-Provincial and Nechaco Ry.—Incorporation.

Naas and Skeena Rivers Ry.—Incorporation.

Northern Vancouver Island Ry.—Incorporation.

Pacific Coast Coal Mines Co.—To reduce capital, and authorizing issue of debentures.

Peace and Naas River Ry.—Incorporation.

Railway Camps.—To regulate and inspect railway construction and other camps.

Railways.—Consolidation and amendment of acts relating to.

Tramways.—Amending Tramways Inspection Act.

Temiskaming and Northern Ontario Ry.

Hon. A. J. Matheson, Treasurer of Ontario, in presenting the accounts for the year ended Oct. 31, 1910, in the Ontario Legislature recently referred to the revenue and cost of the T. and N. O. R. He said the revenue was estimated at $625,000, enough to pay the sinking fund and interest on the debt. The Government received $420,000; the line actually earned $436,000, but the Commissioners retained $16,000 in order to carry them along. While the adoption of compressed air in the Cobalt mines caused a decrease in the consumption of coal 53,000 tons being carried over the line, as against 105,000 tons in the previous year, the real factor causing the decrease in earnings was the large amount paid for maintenance of way. The total gross earnings were larger than in 1908-09, notwithstanding the decrease of nearly $30,000 on coal, but $164,000 more was expended on maintenance of way, and employes' wages were increased to practically the same standard as on the C.P.R. and G.T.R. The total increase on maintenance was $178,000, while the decreases were $14,000, leaving a net increase of $164,000. The result is that there is a good and safe roadbed, which was borne testimony to by the fact that while 670,000 passengers were carried, not one was killed. In this connection, he thought too much attention was sometimes paid by the Dominion Board of Railway Commissioners to reducing freight rates. The first care, he thought, of that and other similar boards, ought to be to see that every railway was maintaining its road bed in proper order. The safety of the people, the freedom from accidents, is a great factor that ought to be established.

From the Superintendent of the Grand Trunk Railway Car Department.

J. Coleman, Superintendent Car Department, Grand Trunk Railway, Montreal, writes to the Railway and Marine World as follows:—

"I look forward with a great deal of pleasure to receiving your monthly publication. I am sure it is highly appreciated by everybody who has the opportunity to read it."

The total expenditure charged to maintenance was $376,000, against $212,000 in the previous year. This increase was caused largely by the following items: ballast, $11,000; ties, $46,000; rails $12,000; roadway and track, $77,000; bridges, trestles and culverts, $12,000. All these increases have been charged to ordinary revenue. In addition, there had been advanced to the Commissioners $785,000 which had been expended upon buildings, putting in steel trestles instead of temporary bridges, straightening tracks, and various betterments of that sort.

The principal charge during the current year will be the building of the Porcupine extension, of 30 or 40 miles, under the authority of the Act passed last year. This will be a light railway, and is expected to cost $15,000 a mile. It will be sufficient to handle the traffic of the district, without being much of a burden on the province. Already a very large traffic for that country is going and coming by way of Kelso, from which place the extension will run in to Porcupine. The Chairman of the Commission hopes that the line will be complete by the end of June.

He had no doubt that the whole of the T. & N. O. R. would in a year or two pay interest and sinking fund on the cost. Negotiations were going on with the G.T.R., in regard to which he could not go into details, but he could say that the G.T.R. expected to send a very large traffic over the line.

The total cost of the line to date represented by money advanced by the Government is $16,123,338.69.

Minimum Car Load Weight on Evaporated Milk.

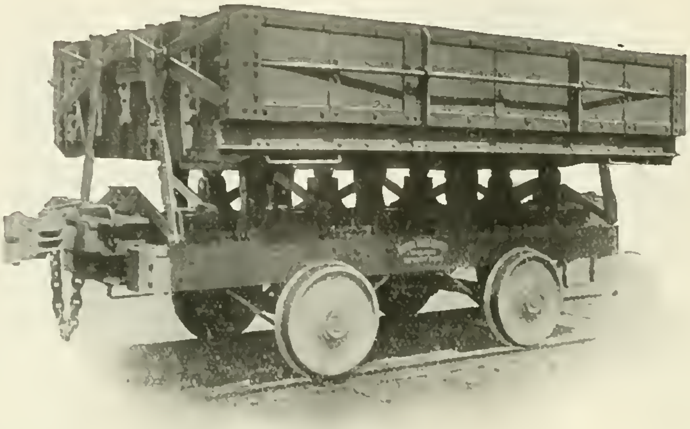
In the case of the Canadian Condensing Co., Ltd., vs. the C.P.R., Chief Railway Commissioner Mabee gave the following judgment Jan. 7, which was concurred in by Assistant Chief Commissioner Scott and Commissioner McLean:

The applicants allege that on Oct. 14, 1910, they loaded at Chesterville, Ont., a car of evaporated milk, destined to Vancouver. The following is an excerpt from their letter:—"Being under the impression the minimum carload weight was 30,000 lbs., we loaded 30,350 lbs., took our bill of lading to the C.P.R. agent marked 'prepaid,' who figured up the freight and we paid him $288.33. We heard nothing more of the matter until about the middle of November we had a debit note from the consignees, Little Bros., for $91.67, paid additional freight on car received Oct. 27. Enquiring into the matter, we ascertained that the minimum weight had been advanced to 40,000 lbs., and we made a claim on the C.P.R. for a refund of the $91.67, feeling that they had a perfect right to entertain the claim, since the error was clearly one of their agent's, and not ours."

The applicants no doubt feel that they have been injured to the extent of $91.67, alleging, as they do, that the car was shipped on a laid down price, and in fixing that price the freight was figured on the basis of the 30,000 lbs. minimum, and that the error, be whose it may, has put them to loss to the extent of $91.67. Now the facts are that the tariff rate in carload lots from Chesterville to Vancouver on evaporated cream is $1.75 per 100 lbs., classification minimum of 24,000 lbs. This would have made the charge upon the shipment in question $420. There is, however, a special commodity tariff showing a toll of 95 cents per 100 lbs. on a minimum of 40,000 lbs. This commodity rate, based on the 40,000 lbs. minimum, has been in force since Dec., 1909, so that the applicants are in error in saying that the minimum had been advanced to 40,000 lbs. On the contrary, it had been in effect at least nine months before the shipment moved. Of course, the railway agent at Chesterville was in error in accepting prepayment at 95c per 100 lbs. on the actual weight loaded. However, if the shipment had been permitted to move at this rate, it would have been a variation from the published tariff which is declared to be unlawful and illegal. Likewise, if the railway company was compelled to refund the applicants the $91.67, the same result would follow. This case is an illustration that occasionally an individual hardship follows by reason of the law permitting no departure from the published tariff.

Getting back, however, to the root of the matter, the applicants committed the initial error by permitting "the impression the minimum carload weight was 30,000 lbs." to prevail. Had they not acted under a mere impression, but had looked up the tariff which the law compels to be kept published at the Chesterville station, they would at once have ascertained the true facts, and the error would not have followed. To permit a refund of this $91.67 might work discrimination in favor of the applicants, as it may be that other shipments have moved from Ontario points upon the basis of the lawfully published tariffs. No redress can be given to the applicants.

Russel Heavy Duty Dump Cars



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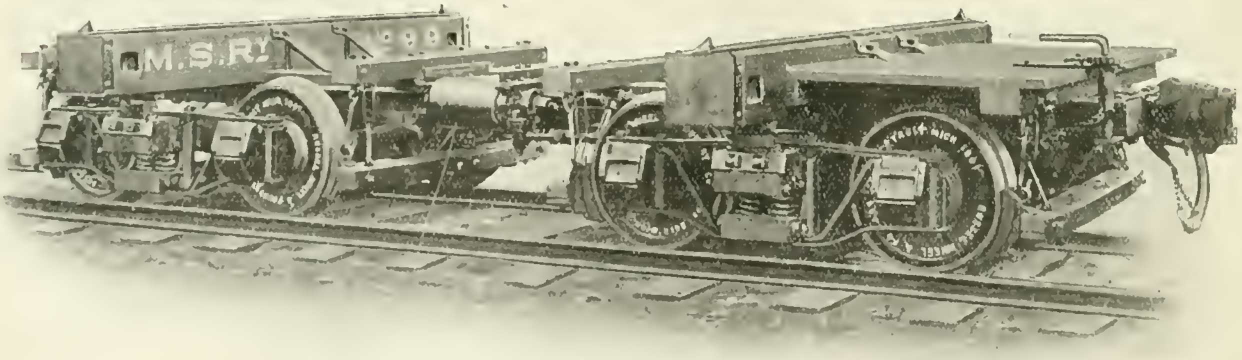

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G. T. P. R. Maintenance of Way Employes' Pay.

The Board of Conciliation and Investigation which was appointed by the Minister of Labor in connection with matters in dispute between the Grand Trunk Pacific Ry. and its maintenance of way employes, consisted of J. W. Dawsey, of Melville, Sask., appointed on the company's recommendation; W. T. J. Lee, of Toronto, appointed on the employes' recommendation, and Judge McGibbon, of Brampton, Ont., as Chairman, appointed on the first recommendation of the other two members. The Board met at Winnipeg and went over the line to Edmonton, and afterwards met in Toronto. The Board was unanimous in its finding, except the question of wages, for which two schedules were submitted, one by Mr. Lee, representing the employes, which was concurred in by the Chairman and one by Mr. Dawsey, representing the company. The Labor Department was subsequently informed that the report of the Board was satisfactory to the employes. Following is the principal portion of the report:—

The members of the Board have been able to agree upon all the articles of the following schedule except the rates of pay.

The following rules will govern the employes of the G.T.P.R., as set out further in sec. one thereof.

When additional positions of a like class are created compensation will be fixed in conformity with that of similar positions as shown by this schedule.

This schedule will become and be effective as of Dec. 1, 1910, and will not be changed unless on 60 days notice, by either party given between May 1, and Nov. 1, of any year.

These rules will not take away any privileges that are now in effect with employes.

The schedule of rates marked A. attached hereto are the rates offered by the representative of the Company, and which he considers fair. The schedule of rates marked B., attached hereto are the rates which the representative of the employes believes should exist and be paid by the Company, and which he considers fair. The Chairman concurs in the position and rates as recommended by the representative of the men, feeling that from the evidence adduced before the Board that there should be an increase in the rates recommended by the Company's representative.

Sec. 1.—By permanent maintenance-of-way employes is meant employes who take their orders from the Road Masters and Bridge and Building Masters, and who have been in the maintenance-of-way service continuously for nine months or more, or who have had nine months cumulative service during the two years immediately preceding, and same will hereinafter be referred to as employes. Laborers in extra gangs, unless those practically engaged all the year round will not be ranked as permanent employes.

Sec. 2.—Ten hours shall constitute a day's work, excepting for track and bridge watchmen, signal men (except when employed as telegraph operators), pump men and pump repairers. When required to work in excess of these hours, time will be allowed for such excess at the rate of time and a half. Time and a half will be allowed on Sundays, Christmas Day and New Year's Day. Employes called for duty after having been relieved at 6 p.m., shall receive a minimum of four hours, and shall not be required to suspend work in schedule working hours to equalize overtime.

(a) Twelve hours will constitute a day's work for bridge watchmen, signal men, pump men and pump repairers. When required to work more than 12 hours, straight time will be allowed.

(b) In emergencies, employes will not be required to work more than 24 hours continuously without a rest of eight hours.

(c) Employes detained when travelling on orders of the Company after regular working hours will be allowed straight time except when provided with boarding and sleeping cars.

(d) Foremen will be allowed straight time for wet days, provided they remain on duty.

(e) When the Company's interests do not suffer thereby, employes will be allowed, at their request, to quit work on Saturday during the summer months at 12 noon. If required to work after these hours, overtime will not begin until 6 p.m.

(f) Employes transferred by the Company to construction work will not lose their seniority standing as employes.

Sec. 3.—Employes will be promoted hereafter on their respective superintendents' division, in order of seniority, provided they are qualified. All employes shall be advised of vacancies or of any new appointments that may occur in the department in which they are employed, and their applications, if presented within ten days, will be considered. Employes may be transferred from one division to another for extra gang work, or on the opening of new lines, or when the necessary qualified men for maintenance-of-way work are not obtainable on the division.

(a) Employes refusing promotion become junior to employes accepting such promotion.

(b) An employe who is transferred to another department at his own request, or is transferred from the bridge and building department to the road master's department, or vice versa will lose his seniority standing, but an employe transferred without his consent shall have the right of appeal.

(c) Employes leaving the service of the Company when their services are required, in the event of re-employment will rank as new men.

(d) A list of all employes will be prepared for each superintendent's division, and such list will show seniority standing of each employe. The list will be revised from time to time to agree with length of service and promotions made and a copy will be furnished representatives of employes. They will be open for correction on proper representation by the employe to the head of his department.

(e) In the event of reduction in the number of men employed, those longest in service shall have preference of employment.

(f) The position of track and bridge watchmen and signal men at crossings not interlocked are not subject to the general rules for promotion, being intended to take care of men who become unfit for other service.

Sec. 4.—No employe shall be suspended (except for investigation), or discharged, until his case has been investigated and he has been proven guilty of the offence charged, the decision in such case to be arrived at within 10 days from date of suspension. If an employe be found blameless, he will be reinstated and paid at schedule wages for time lost, and will be reimbursed reasonable expenses, if away from home in such case. If detained more than ten days at Company's instance, awaiting decision, he will be paid schedule wages for all time lost in excess of ten days regardless of decision reached. An employe may have the assistance of another employe during investigation, should he so desire. A written statement setting forth the result of the investigation and the reasons therefor, will, if requested, be furnished by the Company to the employe or employes affected.

(a) Should an employe at any time consider himself unjustly treated for any cause whatsoever, he shall be entitled to a fair and impartial investigation within thirty days from date of complaint by him to his superior officer, and a decision shall be given him in writing within ten days thereafter.

Sec. 5.—Leave of absence and free transportation will be granted to employes who are witnesses and members of duly appointed committees for the adjustment of matters in dispute between the Company and the employes within ten days after request in writing has been made on the proper officer.

Sec. 6.—Employes taken off their regular sections temporarily to work on snow or tie trains, or other work, will be compensated for the boarding and lodging expenses they necessarily incur.

(a) Bridge and building employes taken from their place of residence or boarding outfits will be compensated for the extra expense they necessarily incur, not to exceed $1 a day.

(b) Section foremen or any other foremen taken from their gang for any reason for one or more days will be relieved of the duties of foremen during their absence, and the relieving foreman will be paid the rate of the foreman he relieves during the absence of the regular foreman, and be held responsible during the absence of the regular foreman.

(c) That a regular section foreman having his gang increased to over 20 men for 14 days or over shall receive extra gang foreman's rates.

Sec. 7.—Employes required to attend and light semaphore and switch lamps will receive schedule rate of section men. When lamps are located at more than half a mile from the station, they will be attended to in regular working hours. Employes required to walk track or attend lamps on Sunday will be paid at the regular rate and one-quarter for the time so engaged. A suitable place will be provided for tending to all lamps.

Sec. 8.—The company will keep the section house in good repair; the cost of repairs other than ordinary wear and tear will be charged to occupants. Regular section houses shall be for the use of section foremen and their families only.

(a) Where water is transported for use of section gang, good water will be provided. Where water is not supplied by the company it will be procured on the company's time.

(b) Employes shall not be required to do scavenger work, except such as pertains to their quarters and at such stations as cannot otherwise be taken care of.

(c) The Company will provide suitable houses for pumpmen; until such houses are provided pumpmen shall receive $5 extra per month.

Sec. 9.—The employes will be granted leave of absence when consistent with the carrying on of their work and be given transportation in accordance with the current pass regulations.

(a) As far as practicable, employes will be afforded the opportunity of visiting their place of residence, and furnished transportation when requested from proper authority, and when it will not interfere with the company's business.

(b) Employes will be granted free transportation and leave of absence to attend their meetings, but such free transportation will not extend over more than 300 miles, and leave of absence will not exceed two days, and will only be granted when it will not interfere with the service and when the Company will not be put to any expense thereby.

Sec. 10.—All bridges and building employes in the service of the Company at the date of this schedule becoming effective shall rank as permanent employes.

SHEDULE A.—RATES OF PAY.

Trackmen.

Sect. foreman at all points	$75.00	per month
Asst. sect. foreman in yards	2.55	per day
Sect. men in all first and second class yards	1.75	"
Sect. men at all other points	1.70	"
Foreman of extra gangs...$2.55-	3.55	"
1st asst., foreman, extra gangs	2.65	"

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MANUFACTURERS OF

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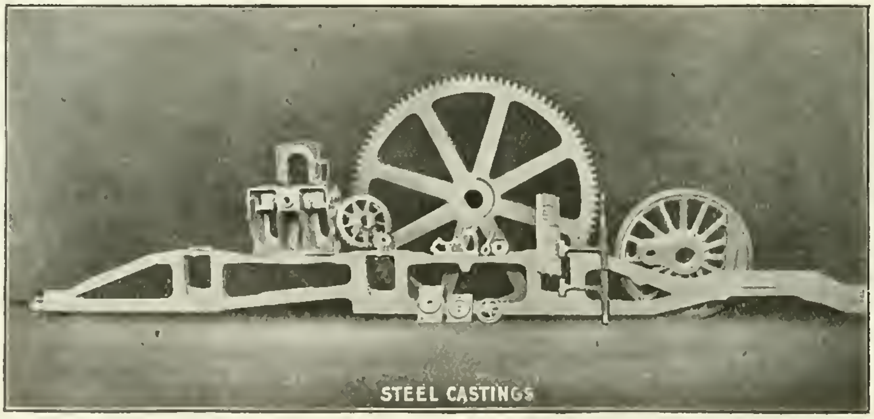

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2nd asst. foreman, extra gangs.	2.55 "
Snow plough foreman and flanger foreman when called for duty.	.33 per hour
Employes working in snow plough or flanger when called for duty	.17½ per hour
Signal men at level crossings ..	1.50 per day
Bridge and building men:	
Yard and shop foreman	$3.50-$3.55 per day
Asst. yard foremen	2.75 per day
Foremen carpenters	.40 per hour
Carpenters	.25-.35 per hour
Bridgemen	2.25-$2.90 per day
B. & B. laborers	1.75 per day
Bridge watchmen	55.00 per month
Foremen painters	3.50-4.00 per day
Painters	2.50-3.00 per day
Pump repairers	85.00-100.00 mo.
Pumpmen (1, 2 or 3 pumps)	50.00-65.00 "
Single pumps where two men are employed	50.00 per month

Note:—Foremen charged no rent, and fuel with stoves for all purposes furnished free when occupying combination stations.

Schedule B.—Rates of Pay.

Trackmen:	
Sect. foremen at Westfort, Transcona, Edmonton & Melville	$3.20 per day
Sect. foremen at Rivers, Watrous, Biggar & Wainwright..	3.00 "
Sect. foremen at all other points	2.88 "
Asst. sect. foremen in yards...	2.88 "
Sect. men in all first and second class yards	2.00 "
Sect. men at all other points ..	1.90 "
Foremen of extra gang	3.55-3.95 per day
1st asst. foremen extra gangs..	2.85 "
2nd asst. foremen, extra gangs.	2.75 "
Snow plough foremen and flanger foremen when called for duty	.43 per hour expenses additional.
Employes working in snow plough or flanger when called for duty	.25 per hour expenses additional.
Signal men at level crossings..	1.65 per day
Bridge and building men:	
Yard and shop foremen	$4.15 per day
Asst. yard foremen	3.15 "
Foremen carpenters	4.00 "
Carpenters	3.00-3.50 per day
Bridgemen	2.40-3.00 per day
B. & B. laborers	2.05 per day
Bridge watchmen	60.00 per month
Foremen painters	4.00 per day
Painters	2.75-3.15 per day
Pump repairers	93.00 per month and expenses while away from headquarters, not to exceed $1.00 per day
Pumpmen (1 pump)	$55.00 per month
Pumpmen (2 pumps)	65.00 "
Pumpmen (3 pumps)	72.50 "
Single pumpa where two men are employed	60.00 "

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Railway Taxation in Ontario.—A resolution of the Ontario Legislature, passed Mar. 1, provides for the payment by railway companies of a tax of $60 for each mile of single track line, $40 for each mile of second track, and $20 for each mile of additional tracks, in territory without municipal organization, provided that for lines forming a system not exceeding 150 miles from terminus to terminus, the tax shall be $15 a mile for one track, and $5 a mile for each additional track, and on lines less than 30 miles long the tax shall be $10 a mile for a single track and $5 a mile for any additional track. The resolution is being given effect to in an act.

Steam Railway Track Laid in 1910.—In the details of track laid by the G.T. Pacific Ry. in our last issue, it was stated that 36 miles had been laid between mileage 17 and Canora, Sask., instead of 38 miles. The total given, 335 miles, is correct, so that the error in no way affects the totals given in the various tables.

R. S. Richardson, formerly Assistant Superintendent Canadian Northern Quebec Railway at Joliette, Que., who has been appointed by MacDonnell and O'Brien as Superintendent of operation of the portion of the National Transcontinental Ry., of which they are contractors, writes: "I have always enjoyed reading the Railway and Marine World."

C. P. R. Land Taxation in Alberta.

Following is a summary of Lord Macnaghten's judgment delivered in London, Eng., in the appeal of the Alberta Government, against the judgment of the Alberta Supreme Court, respecting the taxation of C.P.R. lands in the province:

The two actions which have given rise to these appeals were brought to enforce two separate claims by the province of Alberta to tax certain lands belonging to the C.P.R. Co. The lands in question formed part of the land subsidy earned by the company in the construction of its railway. In 1881, when the construction contract was ratified by the Dominion Parliament, the district in which the lands are situated was part of the Northwest Territories. The province of Alberta, which was carved out of the Territories, was not established until 1905. Though the questions involved in the two actions are quite distinct, they both turn on the wording of clause 16 of the construction contract, which says in part that the company's lands in the Territories, until they are either sold or occupied, shall be free from taxation by the Dominion or by any province hereafter to be established or by any municipal corporation therein for 20 years after the grant thereof from the Crown. In the appeal the question turns upon the meaning of the word "sold," as used in that clause. It seems that in Sept., 1902. the company agreed to sell three sections of land which had been conveyed to the company by letters patent, July 20, 1901. The price of one of the sections was $1,644, and of each of the others $1,920 On signing the agreements $320 was paid by the purchaser in respect of each section. The remainder was to be paid in five annual instalments at dates specified. In each case time was made of the essence of the contract. Beside the three sums of $320 paid on the execution of three agreements nothing was ever paid by the purchaser towards the purchase money, and on Nov. 1, 1905. the company declared the three agreements null and void.

It is admitted that the lands have never been occupied within the meaning of clause 16. The contention on the part of the province is that although there was no sale in fact, and although each of the three agreements for sale was duly voided and annulled in pursuance of authority contained in the agreement itself, yet the lands have been sold within the meaning of that expression in the construction contract So strange a contention does not seem to require a serious answer. But an answer may be given in the language of Chief Justice Ritchie, who disposed of the point when it was raised in 1891 before the Supreme Court. He said:—"There must have been a completed sale. and the property must have passed out of the C.P.R. and vested in the purchaser before it could become liable to taxation."

The action which gave rise to the other appeal was brought by the Alberta Minister of Public Works to determine the date from which the period of exemption mentioned in the latter part of clause 16 is to be reckoned. In the case of the lands of the company in the Northwest Territories. which have not been sold or occupied, the period of exemption is defined as 20 years after the grant from the Crown. The proper meaning of the expression, grant from the Crown, in the case of a land grant is a conveyance by letters patent, and although. of course, Crown lands may be transferred to a subject by Act of Parliament, such a transfer would not ordinarily or properly be described as a grant from the Crown.

The respondent's contention is that in the case of lands proposed to be taxed the period of exemption must be reckoned from the date of the letters patent conveying those lands to the company. The earliest patent in the present case is dated April 6, 1903. The appellant's contention is that the period of exemption runs not from the date of the conveyance of the lands now proposed to be taxed, but from June 18, 1884, the date on which the survey of these lands was approved by the Surveyor General of Canada, and the lands were thus identified as part of the subsidy in land to which the company was entitled. It was one of the conditions of the construction contract that grants in respect of the land subsidy should be made in alternate sections of 640 acres extending back 24 miles on each side of the railway—the company receiving the sections bearing uneven numbers. It was, however, provided that if any of such sections consisted in a material degree of land not fairly fit for settlement, the company should not be bound to receive them as part of such grant. This provision led to prolonged discussion and negotiation between the company and the Government. Some lands which the company at first rejected were afterwards accepted, and some that were at first accepted were rejected afterwards. The result was that in a considerable number of cases the destination of lands appropriated to the land subsidy was not definitely fixed until long after the date when the survey was approved in the Surveyor General's office. As counsel for respondent pointed out, there would have been much complication and confusion if the construction contended for by the appellant had been adopted.

In point of fact, however whenever the question has been argued in the Canadian courts the ordinary and proper signification of the expression "grant from the Crown" has been adopted. The leading case is the case of North Cypress vs. C.P.R. In deference to the decision of the Supreme Court of Canada in that case, formal judgments were only delivered by the trial judge, and by the judges in the Alberta Supreme Court, from which the second appeal is brought. It was argued that if the expression "grant from the Crown" was to have its proper and ordinary signification it would be in the power of the railway company, by delaying to accept Crown grants or even by simply abstaining from pressing for such grants, to defer their liability to taxation for an indefinite period. It must, however. be remembered that at the time when the construction contract was made lands in the Northwest Territories were the property of the Dominion, and that any delay in perfecting Crown grants would be the fault of Dominion officers. The circumstance that but for the contract the lands would now be liable to taxation for provincial purposes cannot alter the rights of the railway company. nor does that fact of itself necessarily lead to delay in perfecting the grants. The whole contract was subjected to a very close and critical examination. but their Lordships are satisfied that there is no reason for departing from the ordinary and proper signification of the expression, grant from the Crown. Their Lordships are therefore of opinion that in the case of lands not sold or occupied the period of exemption from taxation mentioned in clause 16 of the construction contract runs in each case from the date of the letters patent conveying the lands to the railway company, and will therefore advise His Majesty that both appeals should be dismissed In accordance with an agreement between the parties, there will be no order as to the costs of the appeal.—Canadian Gazette.

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Mrs. W. R. Baker, wife of the Secretary C.P.R., is visiting in Europe, where she expects to spend some months.

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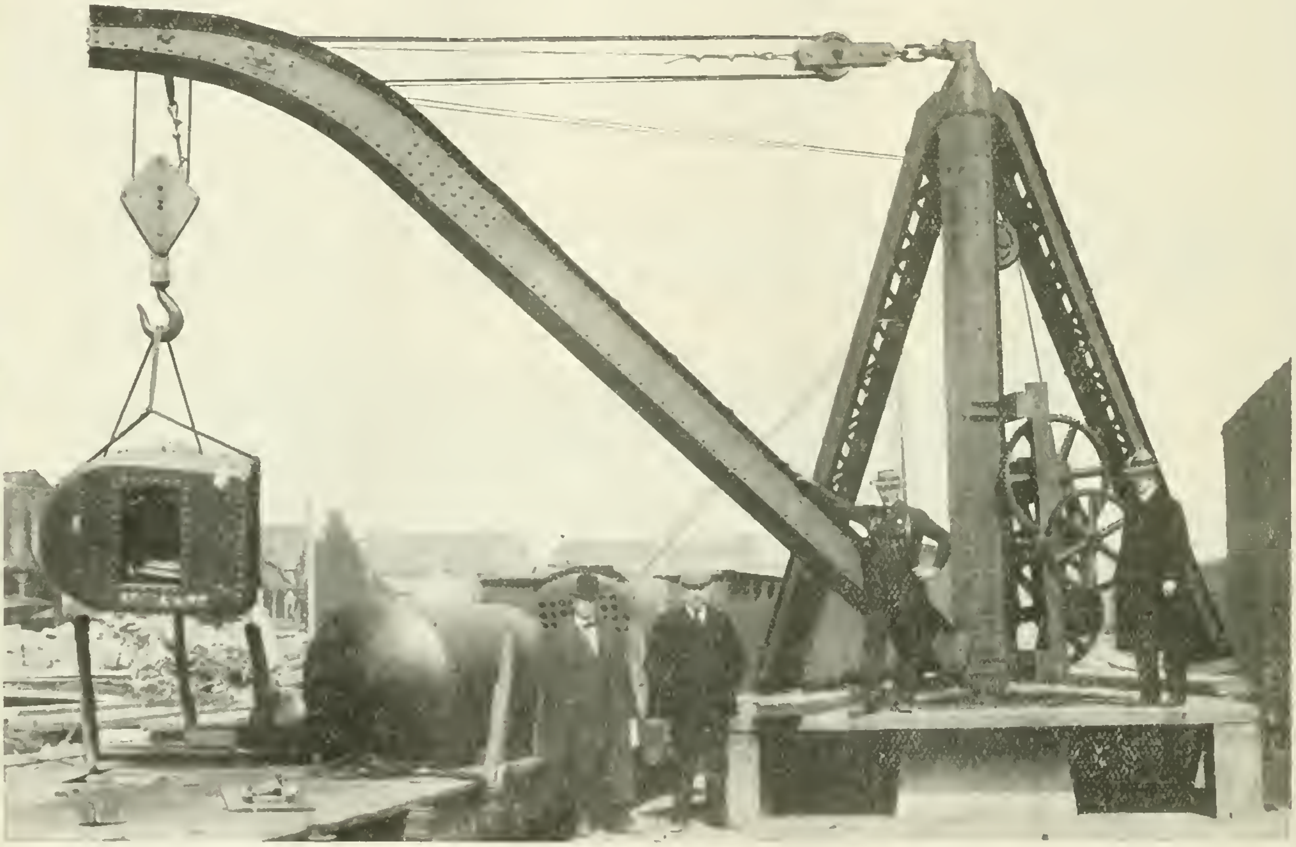

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Can. Soc. C. E. Officers.

Three mistakes occurred in the list of officers of the Canadian Society of Civil Engineers in our last issue.

J. G. Sullivan, Assistant Chief Engineer C.P.R., Winnipeg, was included in the list of councillors. He is one of the vice presidents, holding office for three years.

J. H. Kennedy, Chief Engineer Vancouver, Victoria and Eastern Ry., Keremeos, B.C., was included in the list of councillors, instead of J. C. Kennedy, Vancouver, B.C.

H. M. Jaquays, M.A., M. Sc., Montreal, was omitted from the list of councillors.

Following are the standing committees:—Finance, J. M. Shanly, Chairman; C. N. Monsarrat, G. H. Duggan, W. J. Francis, E. Marceau, Treasurer. Library, and House. L. A. Herdt, Chairman; Jas. White, F. P. Shearwood, R. S. Lea, J. M. R. Fairbairn.

Following are the officers of some of the sections from June 1911, to June 1912:—General, P. Johnson, Chairman; H. M. Mackay, Vice Chairman. Electrical, L. A. Herdt, Chairman; R. M. Wilson, Vice Chairman. Mechanical, H. H. Vaughan, Chairman; W. J. Francis, Vice Chairman.

The society's branches are as follows:

Quebec: P. E. Parent, Chairman; S. S. Oliver, Secretary. Headquarters, City Hall, Quebec.

Ottawa: A. A. Dion, Chairman; H. V. Brayley, Secretary,. Headquarters, 177 Sparks St., Ottawa.

Kingston officers not yet appointed.

Toronto: H. E. T. Haultain, Chairman; A. C. D. Blanchard, Secretary. Headquarters, Engineers' Club, King St. West, Toronto.

Winnipeg: C. H. Dancer, Chairman; E. E. Brydone-Jack, Secretary. Headquarters, University of Manitoba, Winnipeg.

Vancouver: G. H. Webster, Chairman; H. K. Dutcher, Secretary. Headquarters McGill University College, Vancouver.

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American Association of General Baggage Agents.

At the annual meeting in San Antonio, Texas, recently, the following officers were elected:—President, F. H. Jones, G.B.A. St. Louis Southwestern Ry., Texarkana, Tex..: Vice President, B. Quick, G. B. A., Missouri Pacific Ry., St. Louis, Mo.; Secretary-Treasurer, J. E. Quick, G.B.A., Grand Trunk Ry., Toronto; Executive Committee, G. F. Lee, G.B.A., Rock Island Lines, Chicago, chairman;G. L. Alley, G.B.A., Oregon Short Line Rd., Salt Lake, Utah; C. J. Wiggins, G.B.A., Boston & Maine System, Boston, Mass.

The fundamental rules of the Association as revised were adopted.

The most important action taken was that of determining the maximum weight of corpses and their caskets to be handled by the baggagemen This aggregate maximum weight was determined at 500 lbs.

A committee of 11 to be appointed by the chairman, was assigned the task of drafting standard blanks, checks, and tickets for baggage. To this same committee was also referred the subjects of irregularities in the settlement of concealed losses, a special form of tickets for corpses, extra tickets for checking baggage, showing the condition of baggage on transfer bills to and from transfer companies and connecting lines, and disposition of uncollectable c.o.d. charges.

The matter of fumigating immigrants' baggage was left to the action of the health authorities of the different places where the immigrants arrive.

The matter of forwarding baggage on telegraphic request, regardless of transportation, was disposed of by the adoption of a form of telegram to be used in such connection.

The Association resolved to continue the practice of transfer companies receiving and checking through baggage handled by such transfer companies.

A method for dispatching to its proper destination improperly routed baggage was adopted.

In reference to the transmission through New York City of corpses checked to points beyond, the Association concluded to transmit them on the original death certificate instead of delaying shipment to obtain certificate in New York.

The practice of giving prepaid certificates was abrogated.

The requirement for showing form and number of ticket on inter-line checks was discussed at length and the provision to that end was lost when put to a vote.

The matter of showing weather conditions on waybills was also discussed and it was resolved to have the bills show such conditions.

A change in the form of c.o.d. checks was adopted, by which it was supposed that collections of that kind will be more feasible.

◆

April Birthdays.

Many happy returns of the day to—

F. T. Anderson, Car Service Agent C.P.R. Western Lines, Calgary, Alta., born at Lambeth, Ont., April 1, 1878.

W. H. Ardley, General Auditor G.T.R. Montreal, born at London, Eng., Apr. 24, 1858.

J. A. Armstrong, Chief Train Dispatcher C.P.R., Ottawa, born at South Durham, Que., April 6, 1863.

F. J. Balch, General Freight and Passenger Agent Ottawa and New York Ry., Ottawa, born at Massena, N.Y., April 15, 1870.

Jas. Black, Freight Claim Agent, Saskatchewan Division C.P.R., Moose Jaw, born near Seaforth, Ont., Apr. 19, 1858.

C. G. Bowker, Assistant Superintendent G.T.R. Middle Division, London, Ont. born at Medford. N.J., Apr. 21, 1871.

G. Cobb, Chief Dispatcher, Reid Newfoundland Co., St. John's, Nfld., born at Coupar Angus, Scotland, Apr. 21, 1885.

W. A. Dube, Superintendent District 1, Intercolonial Ry., Levis Que., born at St. John's, Que., Apr. 21, 1864.

A. E. Edmonds, District Passenger Agent C.P.R., Detroit, Mich., born at Woodstock, Ont., April 8, 1866.

J. H. Flock, K.C., Honorary Counsel Canadian Ticket Agents' Association, London, Ont., born at Toronto, April 6, 1834.

B. W. Folger, Manager Niagara Navigation Co., Toronto, born at Kingston, Ont., April 8, 1872.

B. C. Gesner, Moncton N. B., formerly Air Brake Inspector I.C.R., now travelling representative Galena Signal Oil Co., born at Cornwallis, N.S., April 23, 1859.

J. Murray Gibbon, Advertising Agent C.P.R., London, Eng., born at Udewella, Ceylon, April 12, 1875.

V. A. Harshaw, Superintendent District 2, Atlantic Division C.P.R., Woodstock, N.B., born at Mono, Ont., April 26, 1865.

J. M. Horn, District Freight Agent, Canadian Northern Ry.. Edmonton, Alta., born at Allanton Mills, Lanarkshire, Scotland, April 12, 1880.

B. S. Jenkins, General Superintendent C.P.R. Telegraphs, Winnipeg, born April 8, 1859.

J. Kyle, Assistant Master Mechanic Canadian Northern Ry.. Edmonton, Alta., born at Toronto, April 11, 1877.

D. McNicoll, Vice President C.P.R., Montreal, born at Arhroath. Scotland, April 7, 1852.

P. Mooney, General Freight and Passenger Agent Halifax and Southwestern Ry., Halifax, N.S., born at St. Catherines, Que., April 19, 1871.

G. D. Perry, General Manager Great North Western Telegraph Co., Toronto, born at Whitby, Ont., Apr. 19, 1858.

R. S. Richardson, Superintendent Macdonnell & O'Brien, contractors National Transcontinental Ry., La Tuque, Que., born at Napanee, Ont., April 9, 1865.

W. A. Ritchie, District Superintendent Pullman Co., Montreal, born at Edinburgh, Scotland, April 13, 1854.

E. W. Smith, Superintendent Dining and Parlor Car Service G.T.R., Toronto, born at North Bridge, Mass., April 21, 1869.

W. S. Tilston, Chief of Montreal Board of Trade Transportation Bureau, born at Manchester, Eng., April 14, 1877.

W. Wainwright, Second Vice President G.T.R., Montreal, born at Manchester, Eng., April 30, 1840.

W. Woollatt, Walkerville, Ont., ex-General Superintendent Buffalo Division Pere Marquette Rd., born at Weedon, Hertfordshire, Eng., April 2, 1855.

◆

Victoria Rolling Stock and Realty Co. of Ontario Ltd.

Following are extracts from the report for the year ended Feb. 15, presented at the annual meeting in Toronto, March 1:

During the year the company has not issued any new debentures, and outstanding debentures against leases have been reduced by $215,000. All payments maturing during the year have been promptly met. The profit on the year's business, after charging up directors' fees and expense account is $28,062.81, out of which a dividend of 6% per annum on the paid up capital stock has been paid, amounting to $14,400.00, leaving $13,662.81 carried forward to profit and loss account, which now stands at $34,412.02.

Assets.

Obligations on leases	$1,227,008 33
Debentures held by company and accrued interest	158,359 72
Cash in bank	79,710 64
Call loans	100,000 00
	$1,565,078 69

Liabilities.

Capital stock subscribed	$600,000 00	
Capital stock paid up		$ 240,000 00
Debentures outstanding		1,280,000 00
Interest accrued on same		10,666 67
Balance at credit of profit and loss		34,412 02
		$1,565,078 69

Profit and Loss Account.

Balance at credit Feb. 15, 1910	$ 20,749 21
Rents received and accrued on leases, interest on advances and debentures held by company	87,560 90
	$108,310 11
Interest paid and accrued on debentures	$ 56,833 00
Expense account	1,365 09
Directors' fees last year	1,300 00
Dividend account	14,400 00
Balance carried forward	34,412 02
	$108,310 11
Original cost of rolling stock held under existing leases	$2,939,370 00
Amount paid in on account by railway companies in addition to interest	1,659,370 00
	$1,280,000 00
Total amount of company's debentures outstanding	$1,280,000 00

The board for the current year is as follows:—President, E. B. Osler; Vice President, W. D. Matthews; Managing Director, R. A. Smith; other directors, D. Coulson, F. G. Osler, D. R. Wilkie, Hon. J. S. Hendrie.

◆

W. E. Fowler, formerly Master Car Builder, C.P.R., who is now living an outdoor life in California, writes: "I hope The Railway and Marine World may continue to be the success it has been in the past."

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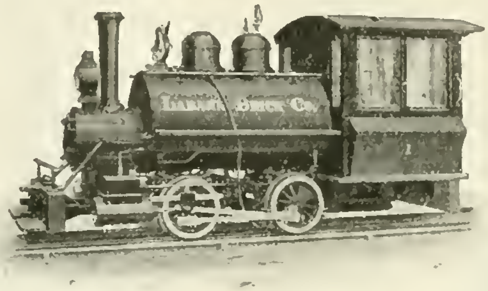

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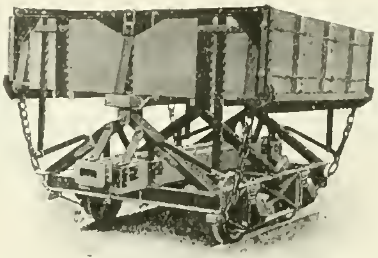

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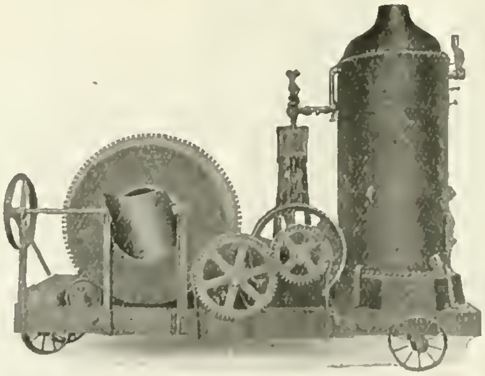
Concrete
Mixers



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Fuel Economy.

By T. Duff Smith, Fuel Agent Grand Trunk Pacific Railway.

Some years ago it was thought that the coal fields of the U.S. were inexhaustible, but the cry today is for conservation and great efforts are being put forth by our neighbors on the south to economize fuel as much as possible. In Canada we can hardly estimate our resources in the way of fuel, as new fields are being opened up every year, but, although we have such large visible supplies, we have no right or reason to waste fuel to the extent we are now doing.

We find from latest statistics that during the year ended June 30, 1910, our Canadian railways used 6,252,054 tons of coal valued at $18,570,393, to which must be added the cost of transportation to point of consumption, handling to tenders, inspection and general supervision, so that we may safely estimate the cost of our annual coal bill at over $25,000,000. Next to labor, fuel is the greatest individual item of expense to a railway, averaging about 10% of the total expense.

I believe that the fuel proposition has been very much neglected. Whenever it becomes necessary to effect economies the first men called on to make a reduction are those in charge of maintenance, both mechanical and permanent way. We stop repairing cars and engines, reduce shop forces, stop putting in new ties, discontinue construction, but the fuel bill goes right along. The management of the average railway is never much surprised when the fuel bill jumps up a few thousand dollars, they look at it as a sort of "guess" proposition. My own experience is, that the more you learn about the fuel question the deeper you go into it, the more you discover how little you really know and how much there is to learn.

How can we further fuel economy? There are several ways, and I will touch briefly on those which have struck me as practicable. The coal producer is a factor in our economy. The railway official who does not recognize that fact is remiss in his duty to the company that employs him. Every railway passes in some section, through coal fields, and therefore by helping operators to develop the mines it reaps returns upon the commercial coal shipped, and as all coal is not of suitable size and character for commercial use, the railway could or should assist the operator to dispose of this coal by finding a use for it, I would question the wisdom of getting any great reduction in selling price by an organized attack, but would consider it better all around economy to pay him a living price and so foster an increased output, the benefit of which would be felt in increased traffic returns.

Here, in my opinion, is the place where all our endeavors are required. We all know that engineers will often resort to the excuse that "poor" coal was responsible for a delay, believing that it is the simplest method of preventing trouble for themselves or shielding other parties. Engine troubles occur more frequently during the busy season, because they are of more importance at that time, and are, therefore, noted more carefully. Good coal will frequently overcome leaky valves, leaky flues, leaky packing rings and other mechanical defects, but this does not relieve the motive power department from its responsibility to keep the engine in good repair, for had these defects not existed less fuel would have been consumed on the run. The man who uses the words "poor coal" should be in a position to define to you openly and frankly what constitutes "poor coal." The impurity in the coal is detrimental to the burning and will deteriorate the relative value of results, but that does not change the coal. It may be high grade coal, it may be low grade coal, and the difference, in my opinion, is that good coal contains the highest per cent. of carbon, the lesser per cent. of sulphur and the lowest per cent. of ash. Poor coal is the coal that contains the lower per cent. of carbon, the higher per cent. of sulphur, and also the higher per cent. of ash, and those two things are divided into classes by themselves and can only be determined by the actual work of each grade of coal, as no two grades of coal are supposed to perform the same identical work under the same conditions. Therefore, it rests with the motive power department and especially with road foremen of engines to see that their firemen use their fuel intelligently and economically, and this is the kernel of the whole question of fuel economy.

Allow me to quote a few remarks made by a road foreman of engines:—"In speaking of educating men how to use coal, it is the aim of every person here to do the very best he can for those we represent in general. It is a fact that good steam pressure on a locomotive is always very satisfactory to the men that handle the train, as well as to the management. but it is also a fact that we waste much high priced coal. Good coal costs more money than poor coal, and we are more apt to waste high priced coal by way of popping engines, etc., than we would by way of a poorer grade of coal, and while it is a question of economy today, is it not a fact that we could burn, possibly by putting our best efforts into it, a cheaper grade of coal and get almost as good results as we would with high priced coal? Now, if that is a fact, that we can do it, it seems to me that we should be willing to do it so far as lies in our power. Popping engines, we are told, are a great loss, and surely there are many things about our engines that if we had good coal we would be careless about. Pop valves may not get proper attention, it does not make any difference, the engine is making her time, she has made her run, she is making plenty of steam and of course we are buying the highest grade of coal. Might we not make some of our neighbors in the shops a little bit indifferent, a little bit careless. On the other hand, I believe the best results would be obtained by not being too particular as to the grades of coal, and if the management at all times would understand the kind of coal that we were using and in the event that we got into trouble, in trying to help along in a general way, it would be simple enough for us to say very little about it. Now, it is a fact that an engine will usually go over the road after the train has started, and suppose an engine carries 200 lbs of steam, it is not necessary that that engine should maintain 200 lbs of steam from one end of the road to the other. We would probably get just as good results from that engine with 190 lbs. steam, there are times when we would not need even that, and by having a medium grade of coal we would be all out with our sleeves rolled up and we would go through in time just the same.'

FROM A MEMBER OF THE GOVERNMENT RAILWAYS MANAGING BOARD.

F. P. Brady, Member Government Railways Managing Board and General Superintendent Intercolonial Railway and Prince Edward Island Railway, writes from Moncton, N.B.

"I admire very much the Railway and Marine World on account of the remarkable correctness of the information and statistics it publishes, and anticipate its receipt with pleasure."

So much for economy in quality. Now how are we to obtain results from engineers and firemen. The road foreman should see that the engineers and firemen understand their duties and follow the instructions given them in regard to the proper method of handling and firing their locomotives. He must also endeavor to have the locomotives kept in condition to give the best and most economical service.

The master mechanic should keep the locomotives in good condition for the service they perform, that they steam freely, that the injectors are of the proper size so that the boiler can be fed continuously, and that there are no burnt or broken grates for coal to fall through into the ash pan, that coal is not wasted at the terminals by hostlers, fireknockers or fire builders, and that they do not allow a locomotive to leave a terminal with a fire having clinkers, either caused by a badly cleaned fire or by engine waiting a long time after the fire was built before starting on a trip.

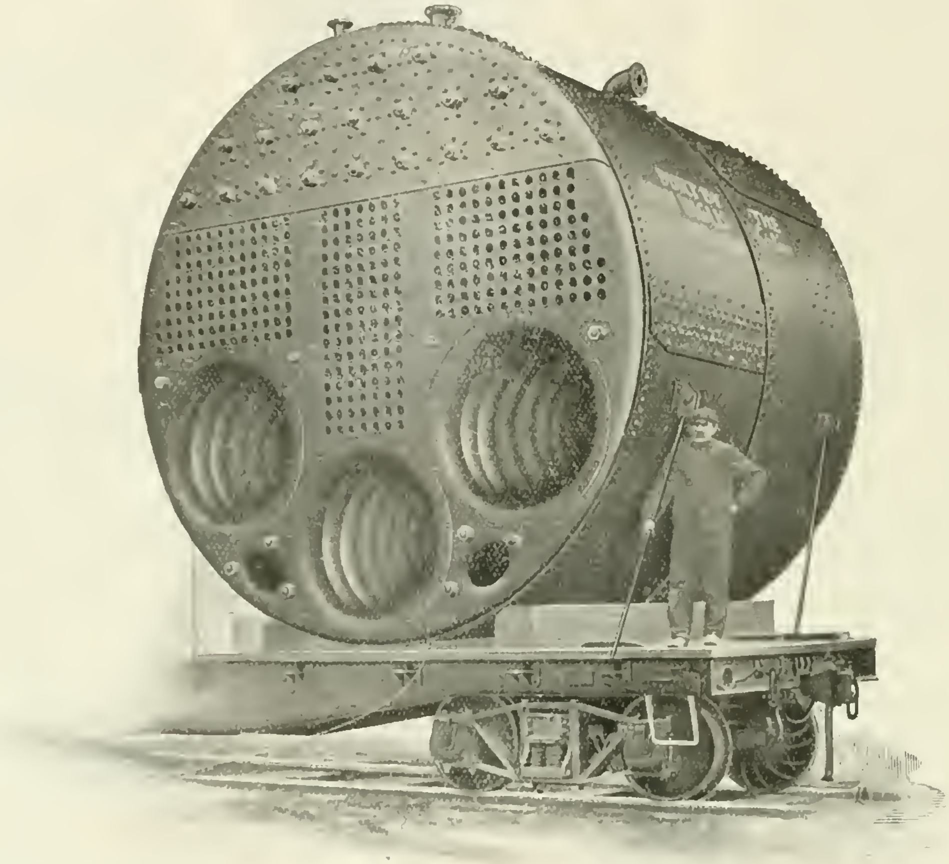
The superintendent should see that the locomotives in through freight service are loaded as far as possible to the economical limit and not beyond it. He should have the tonnage reduced when unfavorable weather conditions require it and increased when favorable weather conditions allow it. Failure to do this causes a great waste of fuel.

The dispatchers should endeavor to keep trains moving with as little delay as possible and not allow those that on account of having work to do or from other causes cannot make as good time as others, delay those behind them. I think dispatchers should be required to take as much interest in fuel economy as any other officials. On some roads this is done.

A performance sheet should be compiled monthly and a copy posted in each roundhouse. This should show the number of engine-miles made per ton of coal and the number of tons used per 1,000 ton-mile. The fact is that a road foreman who does not have any information to work on, cannot work intelligently. With this information he is in a position to compare results, he can dig out the men on the different districts that are in similar service, and if there is a big variation he is in a position to locate the man that is making the poor performance. If he could come down to the refinement of ton-miles per hour, we would get a closer and better performance, which we all hope to do, but if we are going to get the maximum amount of value out of our road foremen we will have to give them information to work on and the more information we give them, and the better information, the better and more valuable men they will be. The trouble is that we do not spend money enough to give our road foremen information to work on. If you get out a performance sheet and compare it monthly, the engineer also will take an interest in it, and if he has an engine that is not in condition, he will make an effort to get that engine put in condition, he will make a complaint to the roundhouse foreman or master mechanic and he will get those repairs made, otherwise he lets them go as long as he is able to make time. The performance sheet rouses the fireman's interest and as no man naturally prefers to have the worst performance, a healthy rivalry is promoted.

There is a general tendency, especially with western coal, for firemen to fire too heavily to get enough air to the fire. Then to admit air they go to extremes in shaking the grates, shaking live fire into the ashbox which is cleaned at intervals along the road and we have all seen in walking the tracks, how in this way the company's money is used for ballast.

BOILERS



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Coal is too expensive an article to use in place of gravel for ballasting.

Leaky tubes are another source of waste of fuel. Another thing which I believe demands attention along these lines is the care and attention given the inside of the boilers. An engine uses a great deal of water every day in service, and in so doing leaves the mud and scale-making properties affixed to the flues, and in fact all parts of the boiler occupied by the water, and, while we consider they are washed out, there is left that solid coating on the flue and elsewhere that will not come off. In a very short time the formation of this scale begins to thicken and acts as a non-conductor of the heat to the water and the gases pass through the flue having left but small portion of their heat to the water as there was an insulator between it and the water, hence a most decided waste of fuel.

Some U. S. Government statistics relative to boiler scale may be of interest:—"To produce 100 h.p. for 3,000 working hours, with clean flues and boiler, it would cost $1,269, with coal at $1.50 a ton. Scale 1-16 in. thick, same length of time, $1,459; ¼ in. thick, $2,030; ½ in. thick, $3,172.50."

Further economy may be made by utilizing the deposits of lignite we have in the west. We are not allowed, even if we cared, to use this class of coal for locomotive purposes, but there is a great quantity, which could be used and thus save the higher priced coal. During the whole of this winter I have been using lignite for heating all our station buildings on the prairie with satisfactory results.

I have briefly and in a rambling manner outlined a few of the ways in which we can economize and further thought along these lines will suggest others. If we wish for results it must be by a long pull, a strong pull and a pull together, every man, from general manager to the man at the coal chute, must be made to feel a personal interest, and it should be the aim of every fuel agent to create this interest by starting with his own department and getting into close touch with the mechanical officials, who are the actual consumers of the largest portion of his fuel. It means team work all along the fuel line, and if this is done in the proper spirit, I have no hesitation in saying that you will get the desired results.

The foregoing paper was read before the Western Canada Railway Club, in Winnipeg recently.

In the discussion which followed, W. H. Rosevear said that on the G.T.R., which he was connected with some years ago, a performance sheet was got out, and this created a sort of rivalry amongst the engineers and firemen, to bring out the very best results possible. A great many schemes had been tried in connection with this. Bonuses had been given the engineers and firemen for the best results, not only for fuel economy but also for oil economy. This worked very well, but it fostered a feeling among the different crews that was not conducive to the very best results. It was found that a freight train would be standing on a siding, and a passenger train would pull in. The driver of the passenger train would make it his business to pull in his train so that the two engines would be opposite each other, and when the crew of the freight train was busy the fireman would help himself to the oil and also get as many lumps of coal as possible. But the getting out of performance sheets, and giving credit marks to the crews which brought out the best results, worked out very satisfactorily indeed.

J. Hillis said that some months ago another paper on fuel economy was read before the Club which he thought gave the actual results as something like 10% going to actual fuel. To an outsider it seemed waste to throw away 90% at the very commencement. There seems to be a large field for economy just there.

In answer to questions Mr. Smith said the possibility of buying coal on the basis of chemical analysis had been considered. The U.S. Government was buying its coal on supply analysis, but the difficulty seemed to be in arriving at the standard of analysis. They make 100 samples and have each one analysed and then make a fair average. Some U.S. railways were working along similar lines, but the question of buying coal absolutely on analysis was not yet down to a set standard.

A. H. Eager having stated that the C.P.R. used a certain quantity of briquettes, Mr. Smith said there was not a briquetting plant in the west, but briquettes would be a great help. It was a subject that would have to be dealt with soon. He thought briquetted coal would be the thing of the future. Mr. Eager added that when in the C.P.R. service at Calgary he had considerable experience with briquettes. It was found that while they were injurious to the eyes, owing to the dust, during hot weather, still a certain quantity, say one-third, mixed with a poor grade of coal for locomotive purposes, gave satisfactory results. A poor grade of Crows Nest coal mixed with one-third of briquet gave better results. He thought that in the west and in B.C., where the coal is soft and fine, mixing with briquettes would be a very economical way of using it, on the smaller engines at least. Mr. Smith said that some of the largest engines running out of St. Louis, Mo., were using, and most of the European continental railways were using, briquettes—in Germany and France, at all events. There is a large quantity of lignite in this country, but he did not think the construction of the locomotives was adapted for this class of coal. The Board of Railway Commissioners will only allow its use three months in the year and that is during the busy and cold season when it is impossible to use it.

A. C. Frith referred to tests made in Washington State. They got on an engine specially constructed for burning lignite, and tested it against a standard engine burning bituminous coal, and the result was very much in favor of the lignite. In connection with the question of throwing fire, there were fewer sparks from the lignite coal than from the bituminous. Of course, the boiler and the smoke box had been specially arranged for the purpose. He thought this experiment showed that lignite could be burned without the excessive throwing of sparks, and he had no doubt that if this could be demonstrated to the Board of Railway Commissioners the restrictions on its use might be removed.

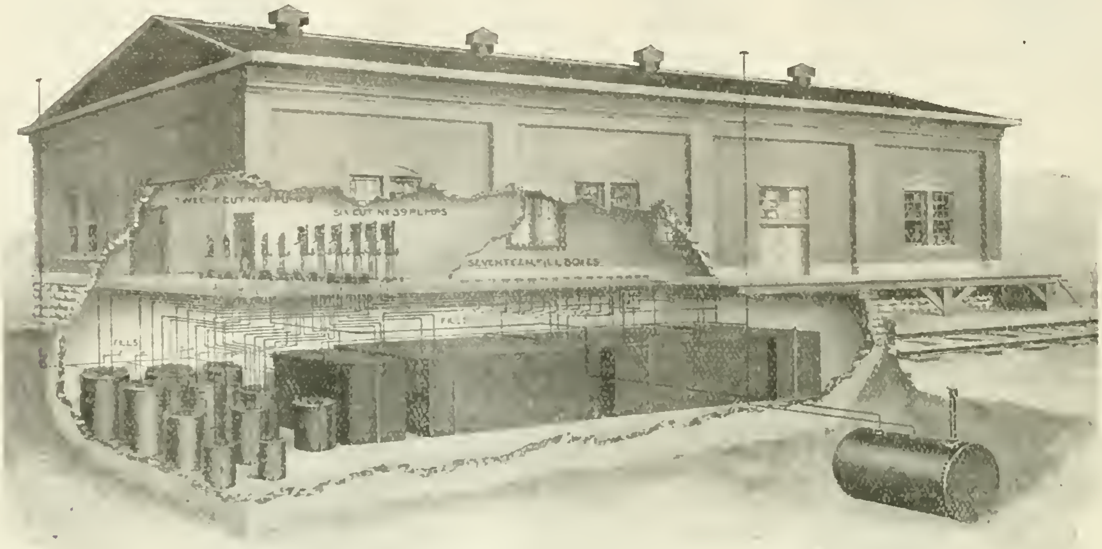
R. R. Neild pointed out that a great deal had been said about the commercial value of coal, but very little about the economy. As mentioned by Mr. Smith, a great deal could be done by the fireman, and also in seeing that the boiler is kept in proper condition. Every road running in the west passes through bad water districts, and all knew the formation of scale in the boilers during the time they are running through those districts. Eventually the economy which might be effected by the purification of the water may be very material. At the present time, of course, there was a great deal of expense in fuel, in running through these bad water districts, because, where scale has formed on the boiler more fuel is required. It was to be hoped, however, that there were no boilers in use with half an inch of scale. If firemen could be trained also in the method of firing coal, a great deal could be saved in that way. A great deal can be learned by firemen, in studying the engines which they are on, and also the class of power they use on the various divisions, and the most economical class of power to be put on the different divisions. The class of power that would be most economical in bad water districts and in good water districts could be watched. He thought that was where the economy would come in and not in the commercial value of the coal altogether.

A. H. Eager referred to Mr. Smith's suggestion that the chief dispatcher should be held responsible. He thought the superintendent of the division should be held equally responsible for fuel economy, as he was the man in charge. He had often been asked to turn out power, whether it was in condition or not. Until the time arrived when the superintendent was held responsible, the desired economy would not be got. When a superintendent asked a man in the locomotive department for an engine, it had to be furnished, if possible. When there was a rush of traffic, engines were often required when they were not in good repair, the result being a waste of fuel, as well as other things that the railways have to spend good money for. Mr. Smith had referred to engines left standing out of doors. There was not a road running west of Fort William that could house 50% of its engines, yet the mechanical department was asked to economize on fuel.

T. Duff Smith said he thought that would come under the team work. If they have not got the roundhouses in which to put the locomotives they should get them. He had seen the same thing. He had seen the dispatcher ask for an engine to be ready at a certain time, and then it would stand five or six hours without being used. If the dispatcher was fully conversant with the circumstances this would not be necessary; so that it came down to the old thing, it had to be team work from the very beginning.

A. H. Eager, Superintendent Shops Canadian Northern Ry., said that at Winnipeg they had last fall a 20 stall roundhouse, and made applications for 19 additional stalls. When they got into the cold weather they figured that they lost $150 a day for the want of the 19 stalls. At Rainy River they had 10 stalls for 50 engines. At Calgary the same conditions prevailed.

Mr. Young, of the C.P.R. Chemists Department, said that of course, one of the chief substances in water which caused scale was carbonate of lime. This was held in the water by carbonic acid gas, and when the water was evaporated the carbonate of lime was deposited in the form of soft mud. There was not so much difficulty arising from that however, as when the engine was washed out the mud was easily removed. There were other substances in water which cause scale; these are sulphate of lime and magnesia and sometimes chloride of magnesia. The chemist removes these substances by a process known as softening, in which the chemical agents used were lime and soda. There was a diversity of opinion as to the advantages of softening water. On the C.P.R. some engineers said that water softening was no good, and that they got better results before the softening was started. The reason of this was that the softening was not general. Soft water might be taken at one station, and when hard water was obtained at the next station reaction set in. He said it undoubtedly produced economy, perhaps not only in the economy of coal, but in the economy of the boiler, because there was not so much pitting and corroding of the boilers. Less coal would be required to generate heat from a boiler, the tubes of which were not coated with scale. If the scale forming constituents of water were removed by softening previously to putting the water in the boiler, they would not be deposited in the tubes, etc.



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A. C. Frith said there was one direction in which economy might be effected, viz., in the question of design of the locomotive, and of late years a great deal had been done in that direction. The railways had been making efforts in that direction to get increased efficiency out of materials at hand, and in that way considerable improvements had been made in the design of locomotives in the direction of fuel economy. Some 15 years ago there was a great movement towards the use of compound engines, which gave very much increased fuel economy over that obtained with simple engines. More recently still there had been further improvements made by superheater engines, which had been found to give better results than with the compound engines, so that the designers were helping in the matter of fuel economy. With the engines of today they got more of the heat value of the fuel used than they did some years ago.

A. W. G. Clark said it appeared to him that Mr. Smith had hit at every other department but his own. The question of fuel economy begins at the mine itself. If you turn out 100% locomotives you are justified in expecting 100% work out of them. On the other hand, if you do not turn out 100% power you cannot look for that percentage of work. Now, if coal is supplied that runs from 20 to 25% ash, you cannot expect a fireman to do as well as he could with a better grade of coal. While no doubt the throwing of the blame to "bad coal" is sometimes resorted to as an excuse, his experience had been that in many cases it was justifiable. He thought there was a big field for a saving there. As he understood, the fuel department was also in charge of the contractors at the different terminals, and hence of the storing and distribution of coal, it was their duty to see that the coal was piled properly, for instance, not so high that a loss will be effected through spontaneous combustion, and that tenders are not coaled so high that the excess will spill over. He thought all these things added together should effect a saving.

T. Duff Smith said he recognized that they should buy the best quality of coal as far as the money lasted, but if the management cut down the expenditure to a certain figure they had to cut their coat according to the cloth. He believed that every railway should have its own inspector at the mine, so that he could see they were getting coal and not slate and rock. As far as buying the coal was concerned, every man had to stand by what his management said.

A. H. Eager said: "I think from what experience I have had there is one branch of fuel economy that is neglected more than any other—that is, the education of the firemen. We hire a man; he is put in the roundhouse as a wiper, and the first thing he knows he is put out on a locomotive some night, and he is a fireman. Sometimes he turns out a good man, but more often he is a misfit. Mr. Smith spoke about a road foreman. I speak more strongly for a travelling fireman, which is one of the best investments the companies could make. I used to go out on the engines myself, but I could not get down and handle the scoop to show the new fireman. I think that is a point that should be brought before the management of the railways, i.e., the education of the firemen. I have in mind a man running out of Calgary who can fire a 1100 or C 2 class engine, run 180 miles, and never shake his grates nor clean out the ash pan. It is just because he knows how"

A member said: The coal dock has not been touched upon. You can go to any coal dock in Winnipeg and you will find a large quantity of coal in big lumps. You don't get the benefit of that coal when it goes in in big lumps. You can also go round these coal docks, and you will find in this coal they are getting, (you have got to watch the box cars for it), there is a quantity of sand. The first man responsible for economy is the fuel agent. Let him see that he gets a decent quality of coal. With reference to putting a country lad on the engines. Mr. Eager says he wipes in the roundhouse about three months; then he is put on an engine, and if he gets over the road it is all right. They throw as much coal into the firebox as they can get in. There is more coal being burned on locomotives today than there is any need for. The dispatcher issues an order for an engine, and you have got to turn it out. Very likely the man in the roundhouse knows that the engine should not be turned out. You cannot expect an engine to go over the road and be economical, if it is not in a fit condition to go.

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Canadian Northern Ry. Earnings, Etc.

Gross earnings, working expenses and net profits from July 1,, 1910, with increases over, or decreases from, those of 1909.10 :

	Earnings.	Expenses.	Net. Earnings	Net Increase.
July	$1,225,100	$876,900	$348,200	118,600
Aug.	1,093,000	830,000	263,000	58,600
Sept.	1,279,000	898,700	381,200	69,700
Oct.	1,627,800	1,047,300	580,500	99,800
Nov.	1,565,400	1,006,500	558,900	11,500
Dec.	1,255,400	896,200	359,200	24,800
Jan.	822,600	720,900	101,700	20,800
	$8,869,200	$6,276,500	$2,592,700	$362,200
Inc.	$1,287,600	$925,400	$362,200	....

Approximate earnings for Feb., $802,800, and for two weeks ended Mar. 14, $487,300, against $698,900, and $385,700, for same periods 1910.

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C.P.R. Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases over 1909-10, from July 1, 1910 :

	Earnings.	Expenses.	Net Profits.	Net Increase or Decrease.
July	$8,869,214.32	5,384,594.73	3,484,619.50.	1,004,748.86+
Aug.	9,255,331.67	5,563,659.34	3,691,672.33	727,614.46+
Sept.	9,315,213.67	5,403,614.03	3,911,599.64	479,710.47+
Oct.	10,229,370.77	5,724,210.25	4,505,160.52	118,863.33+
Nov.	9,413,238.22	5,676,115.96	3,737,122.26	44,784.31+
Dec.	8,705,283.99	5,418,750.10	3,286,533.87	171,110.79−
Jan.	5,740,206.34	5,084,088.47	656,117.87	660,478.52−
	$61,527,858.98	$38,255,032.88	$23,272,826.10	$1,886,353.70+
Inc.	$5,497,920.66	$3,611,566.96	$1,886,353.70	....

Approximate earnings for Feb., $6,180,000, and for two weeks ended Mar. 14, $3,625,000 against $5,813,000 and $3,212,000, for same period 1910.

At Feb. 28 the mileage operated was increased to 10,407.

Duluth, South Shore and Atlantic Ry.—Operating revenue for Jan., $200,508.73; expenses, $176,874.52; net revenue, $23,634.21, against $211,326.74 operating revenue; $165,778.20 expenses; $45,548.54 net revenue for Jan., 1910. Aggregate operating revenue for seven months ended Jan. 31, $1,935,456.45; expenses, $1,310,070.92; net revenue, $625,385.53, against $1,931,069.45 aggregate operating revenue; $1,314,960.87 expenses; $616,108.58 net revenue for same period 1909-10. Approximate gross earnings for Feb., $183,766, and for two weeks ended Mar. 14, $103,251, against $219,473 and $119,346 for same periods 1910.

Mineral Range Rd.—Operating revenue for Jan., $62,780.64; expenses $57,081.30; net revenue, $5,699.34, against $69,176.20 operating revenue; $61,767.71 expenses; $7,408.49 net revenue for Jan., 1910. Aggregate operating revenue for seven months ended Jan. 31, $442,656.16; expenses, $443,746.50; net revenue, $8,909.66, against $508,462.22 aggregate operating revenue; $428,410.96 expenses; $80,042.26 net revenue for same period 1909-10. Approximate gross earnings for Feb., $63,309, and for two weeks ended Mar. 14, $30,391, against $64,148, and $31,436 for same periods 1910.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—Operating revenue for Jan., $901,445.02; expenses and taxes, $730,758.62; operating income, $170,686.40, against $1,213,323.38 operating revenue; $694,082.28 expenses and taxes; $519,241.10 operating income for Jan., 1910. Aggregate operating income for seven months ended Jan. 31, $8,060,917.04; expenses and taxes, $5,296,994.99; operating income, $2,763,922.05, against $9,805,527.02 aggregate operating revenue; $5,254,995.49 expenses and taxes; $4,550,531.53 operating income for same period 1909-10. Approximate earnings for Feb., $1,469,776, and for two weeks ended Mar. 14, $750,882, against $1,479,199, and $804,577 for same periods 1910.

Chicago Division.—Operating revenue for Jan., $712,029.75; expenses and taxes, $599,507.77; operating income, $112,521.98, against $725,049.14 operating revenue; $533,270.07 expenses and taxes; $189,779.07 operating income for Jan., 1910. Aggregate operating revenue for seven months ended Jan. 31, $5,404,068.13; expenses and taxes, $4,132,615.21; operating income, $1,271,452.92, against $5,000,509.28 aggregate operating revenue; $3,527,314.50 expenses and taxes; $1,473,194.78 operating income for same period 1909-10.

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Grand Trunk Ry. Earnings, Expenses, Etc.

The following figures show the earnings of the G.T.R., C.A.R., G.T Western Ry. and D.G.H. and M. Ry. separately, for Jan., as compared with Jan., 1910:—

Grand Trunk Railway.

	1911.	1910.
Earnings	$2,502,600	$2,385,700
Expenses	2,105,000	2,063,000
Net earnings	$ 397,600	$ 322,700

Canada Atlantic Railway.

	1911.	1910.
Earnings	$ 158,600	$ 142,900
Expenses	130,000	129,900
Net earnings	$ 28,600	$ 13,000

Grand Trunk Western Railway.

	1911.	1910.
Earnings	$ 550,800	$ 465,500
Expenses	433,500	381,200
Net earnings	$ 117,300	$ 84,300

Detroit, Grand Haven & Milwaukee Railway

	1911.	1910.
Earnings	$ 169,1[illegible]	$ 158,700
Expenses	148,400	134,600
Net earnings	$ 20,700	$ 24,100

Approximate earnings for Feb., $3,103,166, and for two weeks ended Mar. 14, $1,672,085, against $2,965,729, and $1,601,797 for same periods 1910.

Traffic Receipts of the System.

Aggregate receipts from Jan. 1 to Feb. 28:—

	1911..	1910.
Grand Trunk Ry.	£ 992,346	£ 952,123
Canada Atlantic Ry.	57,585	53,253
G.T. Western Ry.	215,440	190,437
D.G.H. & M. Ry.	67,041	61,458
Totals	£1,332,412	£1,257,271

◆

The Manitoba Legislature and Railway Bills.—The Railway Committee of the Manitoba Legislature called attention, Mar. 9, to the great difficulty which it had in dealing with the various railway bills before it, "owing to the most varied and extraordinary powers asked for in all the applications, nearly all the regulations and rules applying to such railway bills never having been enforced. Committee recommended that all the requirements of the rules of the House respecting this class of bill be strictly adhered to, and that the general Railway Act of the province be so amended as to cover the usual and ordinary requirements of railway companies, that is to say, railways and tramways. The committee also recommended that the model bill attached to the rules of the House be used for all railway companies' applications, and that no departure be permitted from the rules of House in future." The report was received, to be considered at a later date.

During Jan. 20 employes were killed, and 29 were injured in the course of their work in connection with Canadian railways. Of the fatalities, seven were due to premature explosions of dynamite, five were due to crushing, five to being run over, and three to collisions, while of the other accidents, 13 were due to collisions, five to derailments, three each to being run over and to explosions of coal oil, and one each to striking object in passing, to being struck by engine, to being struck by coal in passing tender, to a fall and to a premature explosion of dynamite.

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Ross-Meehan F'dry Co.,	Chattanooga, Tenn.
Du Bois F'dry Co.,	Cold Springs, N.Y.

Vanadium Cast Steel

CRUCIBLE:	
Sivyer Steel Casting Co.,	Milwaukee, Wis.
Riverside Steel Casting Co.,	Newark, N.J.
Crucible Steel Casting Co.,	Lansdowne, Pa.
Damascus C. S. Cast. Co.,	New Brighton, Pa.
Lebanon Steel Casting Co.,	Lebanon, Pa.
Michigan C. S. Cast. Co.,	Detroit, Mich.
West Steel Casting Co.,	Cleveland, Ohio.
OPEN HEARTH:	
Union Steel Casting Co.,	Pittsburgh, Pa.
Mesta Machine Co.,	Pittsburgh, Pa.
Mackintosh-Hemphill Co.,	Pittsburgh, Pa.
Penn Steel Cast. & M. Co.,	Chester, Pa.
American Steel F'dries Co.,	Chicago, Ill.
Pittsburgh Steel Foundries,	Pittsburgh, Pa.
Montreal Steel Co.,	Montreal, Can.
Pratt & Letchworth,	Buffalo, N.Y.

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Crucible Steel Co. of America,	Pittsburgh, Pa.
Colonial Steel Co.,	Pittsburgh, Pa.
Vanadium-Alloys Steel Co.,	Latrobe, Pa.
Heller Bros. Co.,	Newark, N.J.
Vulcan Crucible Steel Co.,	Aliquippa, Pa.
Cyclops Steel Co.,	Titusville, Pa.
Halcomb Steel Co.,	Syracuse, N.Y.

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Crank Shafts, Axles, Piston Rods, etc.

Erie Forge Company,	Erie, Pa.
Carnegie Steel Co.,	Pittsburgh, Pa.
Mesta Machine Co.,	Pittsburgh, Pa.
L. L. Driggs & Co.,	New York, N.Y.
American Locomotive Co.,	New York, N.Y.

Drop Forgings

(Gears, etc.)

Driggs Seabury Ord. Corp.,	Sharon, Pa.
L. L. Driggs & Co.,	New York, N.Y.
Transue-Williams Co.,	Alliance, Ohio.
Wyman-Gordon Co.,	Worcester, Mass.
Crescent Drop Forge Co.,	Hulton, Pa.
Baker Drop Forge Co.,	Jackson, Mich.
Warner Gear Co.,	Muncie, Ind.
J. H. Williams & Co.,	Brooklyn, N.Y.

Vanadium Automobile Cylinders

Capitol Foundry Co.,	Hartford, Conn.
W. P. Taylor Co.,	Buffalo, N.Y.
Manufacturers F'dry Co.,	Waterbury, Conn.
Du Bois Foundry Co.,	Cold Springs, N.Y.

Vanadium Miscellaneous Shapes

Midvale Steel Co.,	Philadelphia, Pa.
Carnegie Steel Co.,	Pittsburgh, Pa.
Crucible Steel Co.,	Pittsburgh, Pa.
Colonial Steel Co.,	Pittsburgh, Pa.
Vanadium-Alloys Steel Co.,	Latrobe, Pa.
Halcomb Steel Co.,	Syracuse, N.Y.
Vulcan Crucible Steel Co.,	Aliquippa, Pa.
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Discussion on Report on Ties by Can. Soc. C. E. Committee.

The report of the committee on ties presented at the Canadian Society of Civil Engineers' annual meeting in Winnipeg recently, as published in our last issue, with additional matter in connection with the question which we exclusively secured, has excited considerable interest among railway engineers and other officials of the construction and maintenance departments. As pointed out in that issue, the letter from the Chairman of the committee transmitting the report, stated that W. B. Mackenzie, Chief Engineer, and T. C. Burpee, Engineer of Maintenance of Way, Intercolonial Ry., dissented from the part of the report about the use of 10½ ft. ties. Their letters of dissent were not submitted with the report and as we deemed it of great importance to give both sides of the question, we obtained copies of the letters from them and published the same.

We also gave a complete report of the remarks made on the question at the meeting by the Chairman of the committee, D. MacPherson, who wrote us that he was very incorrectly reported in the other reports of the discussion he had seen. Our report, therefore, we believe, is the only complete and correct one of the whole matter that has been published. We have since received the following letters in answer to requests for opinions on the question.

J. G. SULLIVAN, Assistant Chief Engineer, C.P.R. Western Lines, writes from Winnipeg: "I note from the reports that my name was given as approving of 10½ ft. ties. I may say that I dissented from this portion of the report in letters to Mr. MacPherson. I do not think the 10½ ft. tie either an economically or scientifically designed tie."

In accordance with our usual practice, we communicated the contents of Mr. Sullivan's letter to Mr. MacPherson, who has written us in reply as follows:—"I attach you copies of the correspondence between Mr. Sullivan and myself with regard to tie committee's report, from which you will see that, although he did at first object to the 10½ ft. ties, the only reason he gave for the objection was the cost, and that he finally said he would gladly subscribe to the report (which contained the recommendation about 10½ ft. ties), provided I would introduce the word 'if' in the paragraph referring to the cost of preservative treatment of ties."

As the correspondence referred to contains a lot of important information, we give it in full further on. Mr. Sullivan, at the outset, opposed the portion of the report favoring 10½ ft. ties, to which later he added that the principal objection was the extra cost. A careful reading of the correspondence will show that he did not withdraw his objection. The subsequent correspondence between him and Mr. MacPherson was devoted practically entirely to the preservative treatment of ties, in connection with which he agreed to the report as changed. We do not think he intended to approve the portion of the report relating to 10½ ties, and although Mr. MacPherson was undoubtedly justified in affixing Mr. Sullivan's name to the report, we think the latter did not intend to assent to the portion of the report dealing with the length of ties.

G. A. MOUNTAIN, Past President and Honorary Councillor of the Society and Chief Engineer Board of Railway Commissioners, writes from Ottawa: "When I was Chief Engineer of the Canada Atlantic Ry., I made a lot of tests for length of ties, and I am of the opinion that for a high class main line such as the Grand Trunk, Canadian Pacific, and Grand Trunk Pacific Rys., where heavy engines are used, and the rails from 80 to 100 lbs. that an 8 ft. tie is too short, and I would recommend that a 9 ft. tie, 7 ins. square, be used in these cases. On a secondary line, say a line somewhat equal to the old Grand Trunk line passing through Guelph and the Sarnia tunnel, which I claim to be a secondary line, and where rails are laid varying from 65 to 80 lbs., I think that the tie should be 8½ ft. long, 6½ ins. square. Then for branch lines where rails from 56 to 65 lbs. are used, I would hold the 8 ft. ties 6 ins. square. This gives, in my opinion, a better distribution of load, and is a decided improvement on the present practice. Where there is much creeping particularly in swamps, I would use ties from 10 to 12 ft. long, depending on the softness of the swamp or muskeg. No creeping device that I have ever seen, and I have seen most of them, can compare with a long tie in resisting creeping track. I would add to these long ties, for track creeping, the clamp that goes on the base of the rail and catches hold of the tie. I am not of the opinion that it is good policy to bore a hole in the rail to put on an anti-creeping device."

C. M. ODELL, Resident Engineer, Sydney and Louisburg Ry., writes from Glace Bay, N.S.: "We are using ties of regulation specifications, 8 ft. long, 6 ins. face at the small end. These we are usin gon a road which as you know, carries very heavy traffic, some of our locomotives carrying 80 tons on a 15 ft. wheel base. Our road is laid with 80 lb. A.S.C.E. rails, and the ties are mostly hemlock, spaced 20 ins. centres. At the time the I.R.C. changed to a 9 ft. tie, we followed suit, mainly for the reason that manufacturers were then making 9 ft. ties, but I was never able to perceive any great benefit to the roadbed from the change, and we cheerfully returned to the 8 ft. ties. I would oppose any increase in length of ties, on account of the increase in cost, which I believe would be out of all proportion to the increased size of the tie, as not only would the tie getter have to go farther afield to find timber of sufficient size, but a stick of timber which would make two ties 8 ft. would make but one if the length were appreciably increased. For these reasons I would think it better, if necessary, to space the ties closer than to increase the length. We use tie plates on all curves on our main line. As an instance of the rapid increase in cost of ties, I may say that in 1894 I bought ties 8 ft. long, with 8 ins. face at the small end, delivered on right of way at 14c. each. To-day ties of same length, with 6 ins. face at small end, cost us 42c delivered on right of way. I am very glad to see so much interest being taken in this discussion, as the tie question is becoming a serious problem all over this continent."

T. J. KENNEDY, President Superior Construction Co., which is building 46 miles of the Manitoulin and North Shore Ry. from Crean Hill to Whitefish, Ont., who was until recently for many years General Superintendent of the Algoma Central and Hudson Bay Ry., and prior to that in the C.P.R. engineer and maintenance of way service, writes us from Espanola, Ont.:—"You ask for an expression of opinion on the use of a 10½ ft. tie instead of that now used which is eight feet. I beg to say that W. B. Mackenzie, Chief Engineer of the I.C.R., has so clearly outlined in his opinion, as given in your March issue, my own views in the matter that I find it hard to add anything to what he has said. I may, however, say that what is more required than anything else, in my opinion, to decrease cost of maintenance and increase life of ties is good ballast. Anyone at all familiar with the conditions as they now are on our Canadian lines will confirm the fact that the great weakness in our roadbed is caused by poor ballast, not 8 ft. ties."

S. B. CLEMENT, Chief Engineer, Temiskaming and Northern Ontario Ry., writes from North Bay, Ont.:—"In the report of the committee on ties, as presented at the recent meeting of the Canadian Society of Civil Engineers at Winnipeg, the use of 10½ ft. ties is strongly advocated. It is stated that 8½ ft. ties cannot be fully tamped at the centre for fear of breaking the ties, but that if 10½ ft. ties were used the ties could be fully tamped throughout their entire length. It is true that, if an 8½ ft. tie were fully tamped under its entire length, the maximum B Mt. would be at the centre of the tie, and that by lightly tamping the centre the B Mt. at the centre may be reduced until it is equal to or less than the B Mt. under the rails, but this light tamping of the centre is not only a protection to the tie itself, but it makes an easier riding track by increasing the stability of the track and preventing centre binding. The resultants of the pressures on each side of the centre of the tie fall within the rails. By lightly tamping the centre, these resultant pressures are kept closer to the rail and the stability is increased.

"A simple calculation will show that when the length of the tie is $5^1 (1+\frac{1}{\sqrt{2}}) = 8.54'$, and the tie is uniformly supported throughout its length, the B Mt. at the centre equals the B Mt. under the rails. When the tie is 10½ ft. long, as suggested by the committee, the B Mt. under the rails greatly exceeds the B Mt. at the centre of the tie.

"The committee on rails, in its calculation, assumes an axle load of 50,000 lbs. and allows 100% for impact, and also assumes that the rails, acting as continuous girders, distribute the axle load between three ties, the centre tie being an unstable support. With an axle over the centre tie, it is probable that only one-half of the axle load is transmitted to the adjacent ties and the centre tie carries one-half of the load, or 50,000 lbs., including impact.

"With a 7 ins. x 9 ins. x 8½ ft. tie and the above load, it is found that:

"The bearing area of tie on ballast equals 918 sq. in.

"Unit pressure on ballast equals 54.5 lbs. per sq. in.

"Max. fibre stress in tie equals 1,470 lbs. per sq. in.

"With a 7 ins. x 9 ins. x 10½ ft. tie:

"Bearing of tie on ballast equals 1,134 sq. in.

"Unit pressure on ballast equals 44.1 lbs. per sq. in.

"Max. fibre stress in tie equals 2,935 lbs. per sq. in.

"The fibre stress of 1,470 lbs. per sq. in. in the 8½ ft. tie is approximately one-third of the ultimate strength of the timbers ordinarily used for ties, giving the lowest factor of safety it is advisable to use. If the maximum fibre stress in the 10½ ft. ties is not to exceed the above amount, it will be necessary to use ties 9.8 ins. thick, or the nearest commercial size, viz., 10 ins.

"The committee assumes that the same ballast section can be used for 10½ ft. ties as is used for 8½ ft. ties. This assumption is not entirely justified, as the track requires a shoulder of ballast at the end of the tie to give it lateral stability, and without this shoulder the ballast under the ends of the tie will not carry the same pressure as the ballast under the centre of the tie. It is more probable that the use of 10½ ft. ties would necessitate the widening of cuts and embankments.

"The committee suggests a minimum spacing of 20 ins. centre to centre of ties, which is the equivalent to 20 ties per 33 ft. rail. When ties have a 9 ins. face there will be 11 ins. between the ties. Applying Thos. H. Johnson's formula (Proceedings A.R.E. & M.W.A., vol. 7, pg. 104), it is found that 35 ins.

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of gravel ballast or 17½ ins.. of stone ballast will be necessary to produce a uniform distribution of pressure over the surface of the roadbed. With but 12 ins. of gravel ballast under ties with 9 ins. face, spaced 20 ins. centre to centre, all the bearing area of the roadbed will not be utilized, and there will be a tendency for the ballast immediately under the ties to sink in the roadbed, forcing the material of which the roadbed is composed up between the ties. It will not be economical to widen the roadbed. as will be necessary for use with longer ties, until all the available bearing area of our present roadbed is fully utilized. We have seen that 10½ ft. ties require to be 10 ins. thick, and if they can be properly tamped when spaced 20 ins. centre to centre, ties 7 ins. thick can be tamped when 18 ins. centre to centre, or 22 ties per rail.

"To summarize, I believe the following conclusions are justified:—

"1. Increasing the length of ties beyond 8½ ft. to prevent breaking at the centre is unnecessary.

"2. A tie 10½ ft. long should be 10 ins. thick to be of the same strength as an 8½ ft. tie 7 ins. thick. A 7 ins. x 10 ins. x 10½ ft. tie contains 73.5 FBM. while the 7 ins. x 7 ins. x 8½ ft. tie of equivalent strength contains but 41.6 FBM.

"3. The 10½ ft. ties will require a wider spacing and wider roadbed and a greater width of ballast than the 8½ ft. ties.

"4. The 8½ ft. ties, with the permissable closer spacing and with the narrower but deeper bed of ballast will give the desired result more cheaply and satisfactorily than the 10½ ft. ties.

"5. As two 9 ft. ties can be sawn from an 18 ft. piece of timber, and as timber is not generally cut, except in the even feet. a 9 ft. tie can be obtained quite as cheaply and as readily as an 8½ ft. tie. I believe that the adoption of 9 ft. as the standard length of ties is advisable, but that at present there is no necessity for adopting a length in excess of 9 ft."

H. K. WICKSTEED, Chief Engineer of Surveys, Mackenzie, Mann and Co., Ltd., writes from Toronto:—"You ask for my opinion on the proposal to increase the standard length tie from 8 to 10½ ft. While I am quite of opinion that a longer tie is desirable and that the arguments adduced by the committee are in the main sound and good, the increase of 30% seems to me rather a radical change, and I think that there is a good deal to be said on the opposite side, and that 9 ft. would be a sufficient departure from existing practice for initial experimenting. If results were satisfactory a further increase might be tried. In any case the tie must of necessity be at least proportionately increased in thickness."

T. HICKEY, Roadmaster Michigan Central Rd., writes from St. Thomas, Ont.: "I have, with a great deal of interest, read the report of the Canadian Society of Civil Engineers' committee on ties, in your March issue. The length recommended by the committee, 10½ ft. is in my opinion, too great, and too much of a radical change in the length of track ties for general use. I fear that many of the 10½ ft. ties would break at point of rail bearing. My experience is that our 8 ft. ties, which are being used at present, break less than the 9 ft. ties, which we used some years ago; 75 per cent. of the breakages took place at the rail bearing. I think the best dimensions for track ties are 8½ ft. long 7 ins. thick, and 9 ins. wide."

F. CHISHOLM, Roadmaster, Halifax & Southwestern Ry., Bridgewater, N.S., writes:—"I have had considerable experience with the 9 ft. ties and some 14 years experience with the 8 ft. ties, and I find that the 9 ft. ties break very much more readily. I would suggest that if any change is made in the dimensions of ties, they should be made 7 ins. thick instead of 6 ins., which I believe is in general use at present in this province. On account of the heavier rolling stock, I think the thicker ties would give very much more satisfactory service. I would not approve of a longer tie than that in use at present, except in a boggy piece of road where they would make the track much firmer and lessen the tendency to roll."

E. BRAZEAU, Roadmaster G.T.R., writes from Richmond, Que.: "In my opinion 8 ft. ties are giving more satisfaction than 10½ ft. ties would, in this part of the country especially, on account of the frost. For instance, during the present spring the track is working very badly under the 8 ft. ties and I am of the opinion that the frost would work more under the 10½ ft. ties, having more surface to work under, thus making the track worse. The 10½ ft. ties would take up a great deal more ballast than the 8 ft. ties do and also almost all the cuts on the single track at least would have to be widened to allow for a ditch. In yards where there are lots of tracks with 14 ft. centres, they would be of no use at all and besides would take a lot more labor to put them in and take them out.

In handling the ties from station to station, at present, we put four tiers of 8 ft. ties per car and with the 10½ ft. ties we could only put three tiers, thus losing one car on every four. To my knowledge, the C.P.R. made a practical test of ties 9 ft. long between Montreal and Vaudreuil, but they did not give satisfaction so they cut them all to the 8 ft. length. I entirely agree with the views of Mr. W. B. Mackenzie, Chief Engineer of the I.C.R. as published in your March issue."

S. J. FAUGHT, Supervisor Temiskaming & Northern Ontario Ry., writes from Englehart, Ont.: "I have read with much interest the matter in The Railway and Marine World for March respecting the proposal to increase the length of ties. I certainly agree that we should have longer ties in our roadbed. It is a well-known fact to all practical maintenance of way men that our ties and roadbed have not improved in comparison with the increase in weight of rolling stock during the past 25 years. The fact that we are still using the same 8 ft. tie goes to prove this. Of course, we are placing our ties closer, trying to overcome the difficulty with but slight success. When it is taken into consideration that our engines have not only increased over 100% in weight but more than 25% in width, also the cars, it is quite evident they are top heavy on the track on 8 ft. ties. No one knows as well as the roadmaster and the section foreman, the difficulty there is in keeping track in surface and line, especially in northern latitudes where the frost heaves and twists the track in all manner of shapes and forms. When the ties get loose in the spring and the frost is still in the roadbed, 8 ft. ties are not a good foundation for 200 ton engines running 50 miles an hour. No wonder that when the roadmaster is called out of bed at night to go with the auxiliary his first thought is spread track caused by bad surface or line, owing to lack of solidity of the roadbed. Then there is no excuse for the section foreman for allowing track to get out of gauge, although he is placed in the position that it is beyond the ingenuity of man to prevent it owing to the weakness of the roadbed and ties. My opinion is that 10½ ft. ties would improve the condition at least 50%.

"I cannot agree with Mr. T. C. Burpee that the breakage of ties would increase 75% or even 5%. Supposing it is in a cold country, all our 10½ ft ties would be tamped throughout and would have a solid bearing. Neither do I agree with Mr. W. B. Mackenzie that the cost of labor would be doubled. We do not expect one man to handle 8 ft. ties, and two men could handle the 10½ ft. ties almost as easily as they do the shorter ties. Because some writer said a long time ago that the 8 ft. tie was the best is no reason why it should be the best today when conditions have changed so much. The change from short to long ties would not appear so radical if brought about in the proper manner; that is to say if in running we first put in the long ties under joints and counters, or the weakest parts of the rail, then renew the other ties with long ties according as they decayed.

"I am also of the opinion that in using the 10½ ft. tie we could increase the space between ties considerably, as it is a well known fact that in trying to increase the strength of our roadbed we have placed our ties too close for proper tamping. Where we are now using from 20 to 23 8 ft. ties under a 33 ft. rail, our present standard, 18 10½ ft. ties would be sufficient. This would decrease the apparent lineal feet of 10½ ft. ties considerably. I say by all means, give us the longer ties and we will give you better track and will reduce the deficits by 50%."

ANOTHER ROADMASTER writes:—I think that the large increase of cost in material and labor would not justify the use of 10½ ft. ties. In the first place they would cost 25% more, and the cost of labor in putting them in and renewing and lining track would at least be 40%. It would be necessary to widen the ballast surface in order to have a shoulder of at least 9 ins. at end of ties to hold track in line; this would also incur an increased expenditure. I am also of the opinion that the longer ties would cause a more uneven surface by frost heaving, on account of the longer surface affected by frost. In winter, the tendency to breaking would not be diminished in the longer ties on account of the ends being exposed which would let the frost out at the ends before the centre, causing track to get centre bound and ties breaking. When ties are well down in ballast and a good shoulder of ballast at the ends, track is not liable to get centre bound, minimizing the breaking of ties. I would recommend ties to be 8½ ft. long. This would give about 19 ins. outside of rail tamped firmly, and 19 ins. inside of each rail also tamped firmly, this would leave about 15 ins. in centre of track which should be filled just enough to exclude water, but not tamped so firmly as the other parts. This prevents track getting centre bound and out of line, and gives a firm, equal bearing surface inside and out of rail. I am therefore strongly of the opinion that an 8½ ft. tie put in in this way is superior to ties 10½ ft. and 75% cheaper.—J. J. B."

CORRESPONDENCE BETWEEN D. MACPHERSON AND J .G. SULLIVAN.

Following is the complete correspondence between the Chairman of the Can. Soc. C.E.'s committee on ties and J. G. Sullivan, Assistant Chief Engineer C.P.R., referred to above:—

J. G. SULLIVAN to D. MACPHERSON, Nov. 24, 1910:—"Your circular letter of Nov. 18 received. I cannot subscribe to your assumption re saving by using treated ties. In the first place, the first cost of our ties at present is not 50c, but is between 40c and 45c. To this should be added the cost of freight and the cost of putting in track. Then this sum at compound interest for the life

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of the tie, on our road over eight years, would be the total cost for the time given. Then, the cost of renewal, added to this sum taken at compound interest for the time that the treated tie would last, which I think would be about 16 years, would give the cost for the second period.

"The cost of treated ties would be the first cost of tie, freight, cost of treatment, and cost of putting in track, figured at compound interest for the life of the tie, I should say about 16 years.

"I think you will find that these two sums will very nearly balance, for the reason that you cannot treat ties for 12c. with creosote. It will be closer to 32c., somewhere between 30 and 35c.

"I do not like to subscribe to any particular method of treating the tie. I am perfectly willing to endorse creosoting for Canadian climates, in preference to other methods of treatment, but I am not willing to endorse any specific method of doing the work.

"Another part of the report that I would not care to subscribe to is the length of 10½ ft. for ties."

D. MacPherson to J. G. Sullivan, Nov. 28, 1910:—"Replying to your criticisms of the 24th inst., on proposed draft of tie committee report. You say that your ties only cost from 40 to 45c., but ours have been costing from 50 to 75c., and, of course, in our report, we only want to arrive at a fair average, and 50c. is the average price fixed by the Maintenance of Way Association for hewn ties in their last report. You are fortunate if you get an average life of eight years out of untreated ties, and, for the sake of comparison, I will accept that figure with 16 years for treated ties.

"My price of 12c. for creosoting was doubtless too low, but, on the other hand, I think yours of 32c. too high. It all depends, of course, on the completeness of the plant and the number of ties treated. The Atchison, Topeka and Santa Fe Ry. has gone into the matter pretty extensively, and reports the cost of creosoting pine ties to be 20c. In order to try and meet you half way, I will assume the following values for a basis of calculation:—First cost of untreated ties, 50c.; treated ties, 75c., with an addition of 15c. for freight and putting in track for all ties. Life of untreated ties, 8 years; treated, 16 years; rate of interest, 4%. Annual consumption of untreated ties, 12,000,000. On this basis the total capitalization necessary to buy an untreated tie and to produce in compound interest enough to renew it at the end of its life, would be $2.41, and, for a treated tie, $1.93.

12,000,000 ties at $2.41	$28,920,000.00
12,000,000 ties at $1.93	23,160,000.00
Difference in capital expenditure	$ 5,760,000.00

$5,760,000 at 4% = $230,000 a year.

"This same capital expenditure would have to be repeated for eight years until all the ties were treated and the renewing fund complete, which would make a total saving in capital of 8×$5.76 millions = $46,080,000, which at 4% = $1,842,000. Annual saving equal to $18,420,000 if annual consumption 120,000,000 ties.

"Would you be agreeable to substituting the above figures for paragraph 3 in the draft of report sent you?

"In regard to 10½ ft. ties, I did not expect any one to be very enthusiastic about it, but would be glad to have your full reasons for objecting."

J. G. Sullivan to D. MacPherson, Nov. 30, 1910:—"Your letter, Nov. 28, re tie committee report. I heartily agree with you that on account of conservation of timber we should go to the treated tie just as soon as we can afford to, and our company has carefully gone into this matter in the past four or five years, and has recently let a contract for treating several millions. The figures I gave in my previous letter were the honest results of our investigations. We went further and discounted the price we might have to pay for ties in the future in making the comparisons, and we could not figure out any place where we would be justified in treating ties, excepting Winnipeg, which is practically the eastern gateway for the ties used on a large portion of our prairie, and there is no great extra cost for freight to and from the works.

"I cannot follow your figures, and give you below a comparative statement that I would make up if I was making a report to my company, using the price of ties as 50c. for the present, and 56c. for eight years hence, as you do. You must remember that on a great many of our branch lines and unimportant main lines, ties rot out before they wear out. On these we are not compelled to put tie plates, excepting on curves. If we go to creosote, we will have to put tie plates on every tie in the track, or they will wear out before they rot.

"We have several tenders for treating ties, and they averaged from 9 to 12c. a tie, exclusive of creosote. The cost of unloading and piling that I give is actual contract price. The cost of piling and reloading, we are paying $1.25 per 100 ties, but in case we furnish cars in which they can be loaded direct, there is no charge. In the comparative statement I have put down half a cent for this, and I have figured that a plant would only have to supply a district with a radius of 300 miles. This, as you know, is too small for a Canadian road.

"Comparative statement of cost of treated and untreated ties:—

First cost of tie	50c	
Freight, 150 to 200 M. ⅓ ton	05c	
Putting in place	15c	
		70c
Interest compounded at 4% 16 years		61c
First renewal.		
Cost of tie (estimated increase 6c)	56c	
Freight, 150 to 200 M. ⅓ ton	05c	
Putting in place	15c	
		76c
Interest compounded, 4%, 8 years		28c
Total cost per untreated tie in track (for 16 years)		$2.35

$2.35 discounted at 4% compound interest, 16 years, equals $1.25½.

First cost of tie	50c
Freight, 150 to 200 miles, ⅓ ton	05c
Unloading and piling	01c
Insurance and interest, one year	01c
Treating, exclusive cost of creosote	10c
Piling and loading	00½c
Freight, 175 to 300 M. at ⅓ ton	08¾c
Tie plates (½ ties extra)	12c
Putting in track	15c
Total	$1.03¼

"Leaving a balance of 22¼c. to pay for creosote and freight on same to works.

"As to the 10½ ft. tie, of course, the principal objection is the extra cost. We may have to come to a 9 ft. tie if we increase our axle loads very much more."

D. MacPherson to J. G. Sullivan, Dec. 3, 1910:—"Many thanks for yours of Nov. 30. It seems to me that we are pretty well agreed as to advisability of making a beginning at tie preservation, and, though there are doubtless many places where it would not pay to treat ties as yet, there are some places where it would, and the only way the public can be educated up to the necessity for beginning is to assume reasonable average data and figure out the possible saving. It is difficult to make an absolutely fair practical comparison of this saving, but, as nearly all the ties in use at present are untreated, and about 12,000,000 are used per year in Canada, the total number in track must be about 96,000,000, if we assume the average life eight years. Now, all these ties must be renewed within the next eight years, and capital must be provided for the purpose and for future renewals as well. It seems to me the fairest way to make this comparison is:—First, to estimate the amount of capital necessary to renew all the ties, without treatment, and provide for future renewals of the same kind. Second, to estimate the amount of capital to replace all the ties with treated ones, and provide for their future renewal. The interest on the difference between these two capital amounts will surely represent the annual possible saving, on the basis assumed for purposes of calculation. The basis of my calculations were:—Cost of untreated ties in track, 65c.; treated ties, 90c.; life of former, 8 years; latter, 16 years, and interest 4%; cost of treatment, 25c. On those assumptions the capital necessary to purchase and put an untreated tie in the track and furnish interest sufficient for its perpetual renewal would be $2.41, and $1.93 for treated ties. I do not quite see what figures of mine you do not follow, but our results would seem to be about the same, except for the difference in the data. There is something in what you say about tie plates, but to bring them into the question makes it still more difficult to make anything like an accurate comparison, for which reason I have omitted them. Your own figures, after allowing 12c. a tie for tie plates, show a balance of 43½c. for treatment, and, if that can be done for 25c. the saving would be 18½c. a tie, or 30½c. if tie plates are not considered.

"I agree with you that the principal objection to the 10½ ft. ties is the cost, and, of course, the practical difficulty of making the change from shorter ties, but there would not be much improvement in substituting 9 ft. ties for 8 ft., and the practical difficulties of bringing them into use would be almost as great as for 10½ ft.

"I propose to change paragraphs 3 and 4 to read as follows:—

"(3) Assume average cost of untreated ties at point of shipment at 50c.; freight and putting in tracks, 15c.; total, 75c.; average life, 8 years. Initial cost of treated tie the same as above, cost of treatment, including extra handling, 25c.; total, 90c.; average life, 16 years. If 12,000,000 untreated ties are being used annually, and their average life is 8 years, there must be about 96,000,000 in use, and the capital necessary to place these ties in the track and provide for their renewal every 8 years, on a 4% basis, would be $2.41 a tie. The capital necessary to place treated ties in the track and provide for renewal every 16 years would be $1.93 a tie. The total capital necessary:—

96,000,000 ties at $2.41 = $231,360,000 for untreated ties.
96,000,000 ties at $1.93 = 185,280,000 for treated ties.
Total difference in capital $146,080,000 for treated ties.
$46,000,000 at 4% = $1,843,200 = eventual annual saving.

"(4) As the cost of untreated ties and the numbers used are increasing very rapidly, and the cost of treatment is likely to be reduced, surely no more need be said to prove the urgent necessity of beginning at once the introduction of treated ties, at all points where their capitalized values will show a fair saving on the investment, even if the question is only viewed from the standpoint of economy for the railways.

"As our report is intended only to point out how the best results might be attained, without putting any onus on the railway companies, I trust you will still see your way clear to concurrence in same. Kindly let me hear from you if you will sign report not later than Thursday, the 8th, and oblige."

J. G. Sullivan to D. MacPherson, Dec. 6, 1910:—"Your letter, Dec. 3. I will be very glad to sign the report as

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you have it now, providing you will put the statement of the cost of treatment of ties, including extra handlings, 25c., in the subjunctive mood, as I do not like to sign a statement showing a cost of at least 50% less than my company are having to pay for the treatment of ties. However, if you will introduce an 'if' in that statement, I will gladly subscribe to the report."

D. MacPherson to J. G. Sullivan, Dec. 9, 1910:—"Replying to yours of the 6th inst. about tie committee report, I have introduced the word 'if,' as suggested by you, and am sending the report to the Council today. Please accept my thanks for the interest you have shown in the matter."

We would be pleased to hear from others on this important sbject.

In this connection we think a change in the method of submitting reports by the Society's Committees is very desirable. As already pointed out, the report of the committee on ties, to which the signatures of a considerable majority of the committee were appended, advocated the use of 10½ ft. ties, and suggested that tests be made. The Chairman's letter transmitting the report mentioned Messrs. Mackenzie and Burpee as dissenting, but did not give their reasons, which would probably have remained unknown, except to the chairman, had we not secured copies of their letters for publication. It is quite true the dissenting members did not submit any minority reports, but the value to the Society generally of the committee's report would undoubtedly have been considerably enhanced had the views of the members of the committee who dissented from the majority been appended to the report fully. We are told that it was assumed they would attend the meeting in Winnipeg or send to me written discussion. As they had already submitted their reasons in writing, it appears to us that it was hardly reasonable to expect them to send in a written discussion in addition, or to attend the meeting unless it was convenient for them to do so.

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Prince Edward Island Railway.

In his transportation speech in the House of Commons Mar. 10, the Minister of Railways, referring to the P.E.I.R., said up to Dec. 31, 1909, there was a net loss of $53,294.11, representing a decrease in the loss for nine months of $11,114.93 as against the preceding year. It did not pay, never would pay, and no one need ever try to make it pay. It was not the Department's intention to try to make it pay. When the Island came into Confederation the Government took over the railway, and it is the duty of Parliament to give the P.E.I. people a good railway service so far as that is possible. Although it is a certain contribution from the Federal Government to the people of the Island, so long as he was a Minister, he was prepared to advocate a liberal treatment of the people there in reference to their transportation facilities. The capital expenditure on the line during the past financial year was $185,000. and there was a branch line being built on which there had been expended $206,297.

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Train Dispatching by Telephone.—We are advised that the Michigan Central Rd. has installed telephones on its line between St. Thomas and Windsor, Ont., for train dispatching. It is hoped to complete the telephone system between St. Thomas, Niagara Falls and Buffalo by the end of the year. At present the company is dispatching trains by telephone on eight divisions west of the Detroit River, with satisfactory results. It is intended in time to extend telephone dispatching over the entire system.

British Columbia Railway Acts.

Two measures of importance affecting railway companies were passed at the recent session of the British Columbia Legislature. The first, "An Act respecting the Department of Railways," provides for the appointment of a permanent Deputy Minister of Railways, with such other officers as may be necessary, to work under the Minister of Railways whose duty it shall be "to exercise superintendence and control over all railways subject to the legislative control of the province," whether the company owning or controlling such line was incorporated under special act of the legislature or otherwise. The act is to be retro-active, but all such companies as are already in existence are given any new powers conferred upon companies by this new act. The reason for the creation of the department arises from the construction and operation of various lines under provincial charters, such as the Canadian Northern Pacific Ry., the Portland Canal Short Line Ry., and the Victoria and Sidney Ry. We are advised that the Department will be organized under the Minister of Public Works, the Hon. Thos. Taylor, and that it is the intention that F. C. Gamble, Provincial Public Works Engineer, shall act as Chief Engineer.

The second measure, "An Act respecting railways," amends and consolidates the previously existing acts relating to railways. The first part provides for the administration of the act by the Department of Railways subject to the approval of the Lieut.-Governor-in-Council, and enacts that the provisions of the act shall apply to all existing companies chartered within the province. Part two deals with the incorporation of railway companies. The eight sections in this part provide that any five or more persons may by subscribing their names to a memorandum of association, and complying with the various other requirements of the act become a body corporate for the purpose of building a railway wholly situate within the province, and no railway company may hereafter be formed in British Columbia except under the act. Within 30 days after the filing of the certificate of incorporation the company must deposit $15,000 with the Minister of Railways, which is to be returned on the completion of construction, or forfeited if the line is not built. If the money is not deposited the charter is automatically voided. The Minister is given power to define the company's borrowing powers, to fix the price of the securities to be issued and the purposes to which the proceeds are to be applied. Part three deals with the granting of permission to build branch lines and extensions; the acquirement of other similar companies, etc. Part four deals with the general powers usually conferred upon railway companies. Part five grants permission to companies to occupy unoccupied Crown Lands, and authorizes the Chief Commissioner of Crown Lands to fix the price of such lands. The sixth part provides that the companies incorporated must begin construction within 12 months after incorporation, expend at least 15% of the share capital within two years, and complete construction within five years. Extensions of time to complete the line may be given, but only if the provisions as to actual commencement of construction and initial expenditure have been faithfully complied with. The seventh part contains the provisions for the conduct and management of companies, and succeeding parts up to and including 23, deal with everything connected with the building of the railway. The operation of the line, in all its departments is dealt with in 24 and subsequent parts. These sections provide that standard tariffs are to be made for passengers freight, express, etc., and are subject to the approval of the Department. The company may, subject to the Department's approval, make bylaws, rules and regulations for the regulation of traffic, etc., and special constables may be appointed by the companies for the protection of property and the enforcement of its bylaws and regulations. Statistical returns, in accordance with forms to be prescribed by the Minister are to be sent in annually, and special returns may be asked for at any time. Various penalties may be enforced for non-compliance with the terms of the act.

The act repeals the following acts:—Chap. 163, 1897, "An act respecting railways; chap. 44, 1901; chap. 40, 1905; chap. 32, 1907, being acts amending chap. 163 of 1897; chap. 185, respecting the incorporation of Tramway, Telegraph and Telephone companies, of 1897, chap. 40, 1900, and chap. 51, 1901, being acts amending the same.

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Transportation Conventions Etc. in 1911.

April 18 to 21.—International Association of Railway Special Agents and Police, Chattanooga, Tenn.

April 26.—Association of American Railway Accounting Officers, New Orleans, La.

May 15-18.—International Railway Fuel Association, Chattanooga, Tenn.

May 17.—American Railway Association, New York City.

May 22-24. — Railway Storekeepers' Association, Milwaukee, Wis.

May 23-26.—Air Brake Association, Chicago, Ill.

May 23-26—International Master Boiler Makers' Association, Omaha, Neb.

May 24-26.—Association of Railway Claim Agents, Montreal.

June 14-16.—American Railway Master Mechanics' Association, Atlantic City, N.J.

June 19.—Association of Railway Telegraph Superintendents, Boston, Mass.

June 19-21.—Master Car Builders' Association Atlantic City, N.J.

June 20.—American Association of Freight Agents, Kansas City, Mo.

June 20.—Train Dispatchers' Association of America, Baltimore, Md.

June 20-21.—Association of Transportation and Car Accounting Officers, Cape May, N.J.

June 21.—Freight Claims Association, St. Paul, Minn.

June 22.—American Association of Demurrage Officers, Niagara Falls, N.Y.

July 25-27.—International Railway General Foremen's Association, Chicago, Ill.

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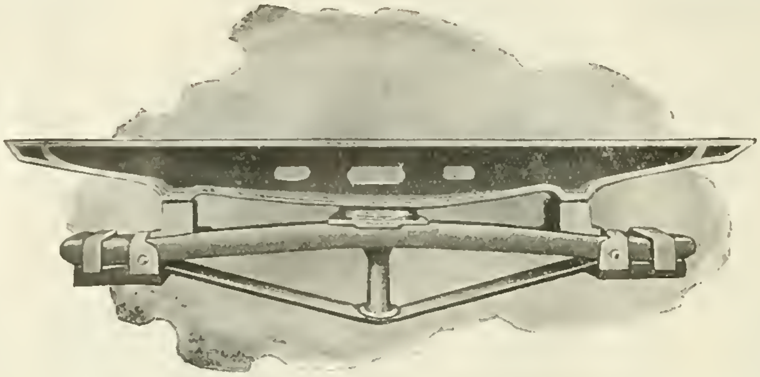
Canadian Ticket Agents Association.

At a meeting of the executive committee in Toronto, March 9, invitations for the holding of the annual meeting, etc., at Sault Ste. Marie, Ont., and Charlottetown, P.E.I., were considered. The question of meeting at Ottawa, Cleveland or Toronto, with a trip to Muskoka, was also talked over. W. B. Moorhouse, C.P.R. ticket agent, Sault Ste. Marie, advocated the claims of that place, presenting invitations from the mayor and board of trade, and it was decided to accept the same. It is probable that most of the members will go to Sault Ste. Marie by train and return by boat.

W. McIlroy, C.P.R. City Ticket Agent at Peterborough, Ont., was appointed to represent the Association at the American Association of General Passenger and Ticket Agents' convention at St. Paul, Minn.



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RAILWAY DEVELOPMENT.

Projected Lines, Surveys, Construction, Betterments, Etc.

Albert and Moncton Ry.—The provisional directors named in the application to the Dominion Parliament for the incorporation of a company with this title are: F. V. Wedderburn, T. M. Robinson, St. John N.B.; Hon. P. McSweeney, Moncton, N.B.; J. W. Domville, Rothesay, N.B.; J. W. Domville, W. S. Gardner, E. Domville, Montreal; J. D. Mackenzie, J. C. D. Mackenzie, J. E. Hawkins, J. King, London, Eng. The company proposes to build a line from Hillsboro, N.B., to the Albert Mines, and thence to Moncton, obtaining entry into that city by means of a railway and general traffic bridge to be erected over the Petitcordiac River. The company asks authority to enter into agreements with the General Oil Shales Co., of Canada. (Feb., pg., 109.)

Alberta and Great Waterways Ry.—By a judgment of the Alberta courts the company and the Western Canada Construction Co., have been made co-defendants with the Royal Bank, in the case instituted by the Province to secure the proceeds of the bonds which were guaranteed by the province.

The Alberta Government has received a number of claims aggregating about $30,000 for work done upon this projected railway. Under the act cancelling the contract. the government undertook to investigate and discharge claims for work done under the contract. (Mar, pg. 205.)

Alberta Central Ry.—We are advised that the two spur lines at Rocky Mountain House, the route maps of which have been approved by the Board of Railway Commissioners are for industrial purposes. One line is to a coal mine in the vicinity and the other to a lumber yard at the mouth of the Clearwater River. Each of these branches is over a mile long. On the line under construction for 50 miles west of Red Deer, Alta., about 20 miles have been completed to grade. The Board of Railway Commissioners has approved location plans for a further distance of 40 miles, from mileage 80, sec. 19, tp. 33, range 17 to mileage 120, in sec. 15, tp. 32, Alta.

In the course of the passage of the bill through the House of Commons, the routes of three branch lines which it is proposed to build in the vicinity of the Big Horn Range were more particularly defined than in the original act. The first is a 30-mile branch starting from the main line between the North Saskatchewan and Brazeau Rivers, and the route as defined is "along or near the Wapiabi Creek, South Creek, and Chungo or Trail Creek respectively;" and two branch lines each 25 miles long northerly and easterly from near the north end of the Big Horn Range of Mountains through ranges 20, 21 and 22, tps. 43, 44, 45 and 46 west of the fifth. meridian; and northeasterly from near the same point, along the Brazeau River to the mouth of its north branch, thence northerly up the Pembina River near where the already authorized line crosses the Brazeau River. (Mar., pg. 205.)

Algoma Central and Hudson Bay Ry.—It is proposed to start filling in all the trestle bridges on the line from Sault Ste. Marie to mileage 69, from which point the line is being extended to Hobon, on the C.P.R. transcontinental line. This extension is expected to be completed this year. A new station is to be built at Bruce St., Sault Ste. Marie, and a new terminal yard laid out north of the Tagoma section of the town, and it is also contemplated to extend the line along the river front as far as the ferry docks. (Mar., pg. 205.)

Atlantic, Quebec and Western Ry.—The Minister of Railway stated in the House of Commons recently that the audit department was making a complete audit of the company's books to ascertain the exact amount of money spent upon construction, and the chief engineer was making an inspection of the line in order to see how far it had been constructed. From papers which had been previously brought down it appeared that the total cost to date was reported to the Government to have been $2,451,550, and that a further sum of $769,902 was required to complete the 102 miles. The subsidy, amounting to $396,902 had been paid to the Bank of Montreal which held a power of attorney from the company. Of the 102 miles, 56 had been completed and considerable work had been done on the remaining 46 miles. The operations on the portions of the line opened to June 30, 1910, showed a deficit of $9,872. (Feb., pg. 109.)

British Columbia and Alaska Ry.—L. M. Rice, C.E., Seattle, Wash., who is in charge of the surveys for this projected line from Vancouver to Alaska, is reported as having stated Mar. 13, that the surveys are well in hand, and that they will be pushed to a completion at the earliest possible moment. The northern terminus has not been definitely selected. (Mar., pg. 205.)

Burrard Inlet Tunnel and Bridge Co.—A deputation from Vancouver, B.C., and surrounding places affected, waited on the Dominion Government, Mar. 14, and asked that a subsidy be voted towards the building of the proposed bridge. Consideration of the request was promised.

Negotiations are in progress with the Seymour Creek Indians, with a view of the company acquiring 100 acres of the waterfront lands of the reservation. (Mar., pg. 249.)

Canadian Coal and Coke Co.—A company with this title was organized Feb. 19, in Montreal, with a capital of $12,000,000 for the purpose of taking over and amalgamating the following companies: Western Coal & Coke Co.; Lethbridge Collieries; St. Albert Collieries, and the Pacific Pass Coal Fields Co. The following are the officers and directors: President, H. K. Lovett, K.C.; Vice President, E. B. Greenshields; other directors: Hon. R. Mackay, R. Forget, M.P.; C. H. Cohan, K.C.; J. N. Greenshields, J. W. McConnell, N. Curry, J. P. Ross and A. H. Cook.. Since the meeting a number of actions have been entered by sections of the shareholders of the Pacific Pass Coal Fields Co., to prevent the absorption of that company.

The Western Coal and Coke Co. controls the charter of the Kootenay and Alberta Ry.; the Lethbridge Collieries Co. and has a spur line under construction to connect its collieries with the C.P.R. Crow's Nest Pass branch, while the other companies named have power to build railway lines.

Canadian North Eastern Ry.—The British Columbia Legislature has changed the name of the Portland Canal Short Line Ry., as above, and authorized the building of an extension to the eastern boundary of the province near the Pine River Pass, and other lines.

A cargo of 40,000 ties has been delivered at Stewart in readiness for restarting work on the building of the line from Stewart to Bear River, B.C. The grading is reported to be completed, with the exception of a rock cut at the canyon, on which work is still in progress. Early in the spring a spur line is to be built to the Portland Canal concentrator. (Mar., pg. 249.)

The Caribou, Barkerville and Willow River Ry. Co., which was incorporated by the British Columbia Legislature in 1910, is asking the Dominion Parliament to declare that the line to be built is a work for the general advantage of Canada, and to authorize it to make a connection with the G.T. Pacific Ry., at Eagle Lake, B.C. Senckler, Spinks and Van Horne, Vancouver, B.C., are solicitors for applicants. (Mar., pg. 349.)

Crow's Nest and Northern Ry.—The British Columbia Legislature has extended the time within which this projected line may be built. (April 1909, pg. 244, and Jan., 1909, pg. 17.)

Dominion Development Ry.—In the course of the passage of the bill through the House of Commons objection was taken to the title of the company, and an arrangement was made by which it should be changed to the British Columbia and Central Canada Ry. This was carried out by resolution of the House of Commons in committee, Mar. 14. (Mar., pg. 249.)

Great Lakes and Hudson Bay Ry.—It was decided not to proceed with the application to the Ontario Legislature for the incorporation of a company with this title to build a railway from Peninsula Bay on Lake Superior, to Hudson Bay. (May, pg. 205.)

Grouse Mountain Scenic Incline Ry.—The British Columbia Legislature has incorporated a company with this title; the application of a second company for the incorporation with the title of the Grouse Mountain Scenic Ry. being withdrawn. (See Vancouver, North to Grouse Mountain, Mar., pg. 249.)

Hartland and Miramichi Ry.—Application is being made to the New Brunswick Government for a guarantee of bonds to aid in the building of the line authorized last session of the Legislature, from Hartland, on the St. John River, to Sparkle on the National Transcontinental Ry., 40 miles. S. S. Miller, is President, and M. L. Hayward Secretary of the company. Its office is at Hartland, N.B. (July, 1910, pg. 547.)

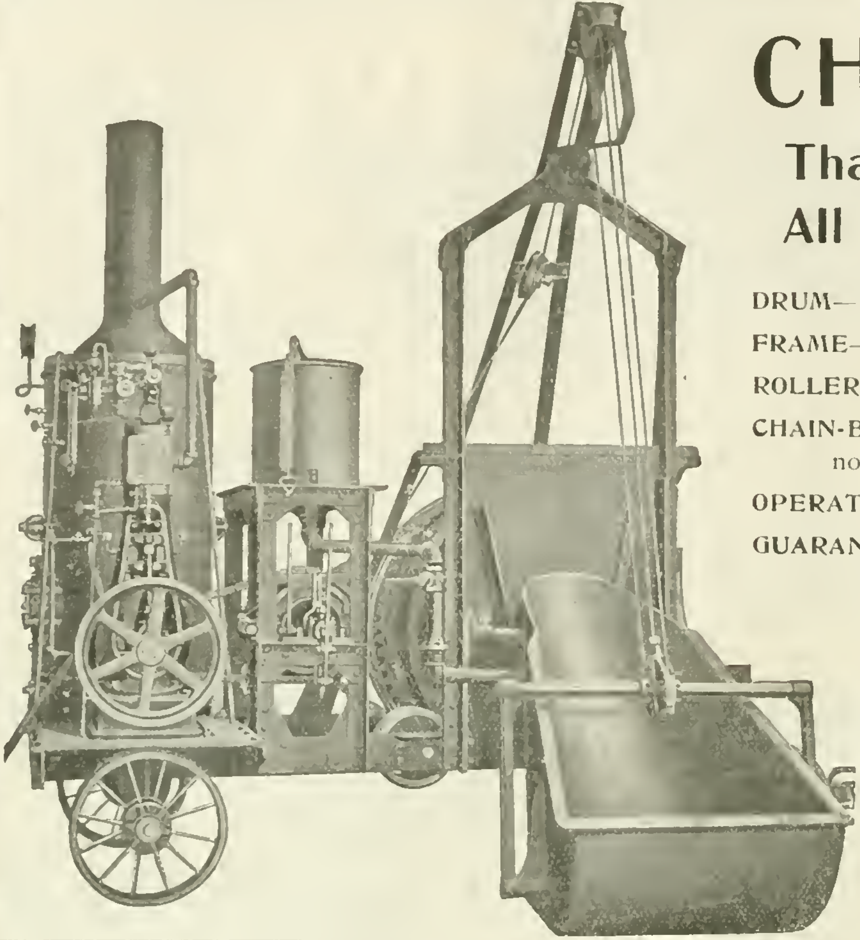
Howe Sound and Northern Ry.—Press reports state tenders will be called for at an early date for grading an additional 10 miles on this line, and for building a bridge across the Cheakamus River. This point is 10 miles from Newport on Howe Sound, B.C., and the reports say that track has already been laid between these two points. (Feb., p. 111.)

Hudson Bay, Peace River and Pacific Ry.—The provisional directors named in the bill, before the Dominion Parliament for the incorporation of a company with this title, are: J. Nairn, Edinburgh, Scotland; R. M. Simpson, R. McLennan, H. Ross, R. D. Waugh, W. M. Noble, H. W. Adcock. Winnipeg. In addition to the powers already mentioned as being asked for, the promoters are applying for power to build a branch line from Winnipeg, easterly and northerly to Fort Churchill, on Hudson Bay. H. W. Adcock, Winnipeg, is solicitor for applicants. (Feb., pg. 155.)

Intercolonial Ry.—Plans for the laying out of additional terminal facilities at Halifax, on plans, prepared by J. Kennedy, Consulting Engineer, Montreal, were discussed between the Government Railways Managing Board, and the Halifax Board of Trade, Mar. 12. They provide for an expenditure of about $2,000,000 and were approved by the Board of Trade.

With reference to press reports as to the early construction of a diversion of the line between Nelson and Derby Jct., N.B., we are officially advised that nothing has been decided.

Tenders are under consideration for the erection of a stone and brick passenger station at Campbellton, N.B., to replace the temporary structure used since the fire. The roundhouse and machine shop erected there to replace the build-



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ings destroyed by fire are completed. (Mar., pg. 205.)

Intercolonial Ry.—Press reports state that it is proposed to build a new steel bridge over the Nashwack River, near Marysville, N.B., and another one near Doaktown, N.B. (Mar., pg. 205.)

International Ry. of New Brunswick.—We are officially advised that this company has power under its act of incorporation to build a bridge for railway traffic across the St. John River, at St. Leonards, N. B., in conjunction with any company incorporated for a similar purpose in the State of Maine. A number of citizens of Van Buren, Me., are considering the desirability of obtaining such a charter and undertaking the building of the bridge. At present a bridge for highway traffic is being built by a joint commission representing the State of Maine and Canada. Application was made to have this bridge made of sufficient strength to carry railway freight cars, drawn by electric motors, and it is said that both governments were agreeable, to make the necessary contributions towards the extra cost. The Maine Railway Commission either would not, or could not, agree to this being done, in the face of the act of the Maine Legislature which had appropriated money for the building of a highway bridge.

With regard to the proposed bridge over the Restigouche River, on the New Brunswick-Quebec boundary, at Campbellton, which would enable a connection to be made between the I.R. of N.B. and the old Atlantic and Lake Superior Ry., we are advised that there is a reasonable prospect of something being done. However, this depends on the Dominion Parliament granting aid towards the cost of construction. The construction of such a bridge would give to the Gaspe peninsula an outlet to New England points, especially in winter, for its fish, lumber, and farm products over the I. R. of N.B.

The I.R. of N.B. has paid into the Supreme Court of New Brunswick $3,000 and interest, the amount of the award in respect of land taken for right of way, and forming part of the lands subject to the provisions of the New Brunswick Ry. Act, in which the New Brunswick Ry. Co. has an interest. (Feb., pg. 111.)

Kettle Valley Lines.—The Board of Railway Commissioners has approved location plans of the extension of the line west and north of Midway, B.C., between Rock Creek, mileage 10.43, and Westbridge, mileage 20.91. Track was reported to have been laid to Cardiff, about 10 miles from Midway, when work was given over, owing to the uncertain weather. It is expected that work will be resumed April 1, both at the Midway and the Merrit ends of the extension. Press reports state a contract has been let to Macdonnell, Gzowski & Co., Vancouver, for a further 30 mile section of the extension, and that it is expected to have the 60 miles between Midway and Merrit completed in the fall. An arrangement is reported to have been completed for the purchase of 50 acres at Penticton, from which a spur will be built to a wharf which is to be built on the lake.

Application has been made to the Board of Railway Commissioners for approval of the location plans of the extension over the Hope Mountains, and notice of opposition has been filed by the Vancouver, Victoria and Eastern Ry., which has a route staked out through the same section of country. (Mar., pg. 205 and pg. 249.)

Kootenay and Alberta Ry.—We are advised that tenders for the building of a section of this projected railway are under consideration, and that a contract is expected to be awarded shortly. L. B. Merriam, 609 Builders' Exchange, Winnipeg, Man., is Chief Engineer. (See also Canadian Coal and Coke Co.)

L'Avenir and Melbourne Ry.—Application is being made to the Quebec Legislature for a subsidy in aid of this projected railway. (June, 1910, pg. 449.)

Lethbridge Collieries Co.—See Canadian Coal and Coke Co.

Manitoulin and North Shore Ry.—This contract for building the section of the line to connect the Sudbury-Krean Hill portions of the line, with the Whitefish Bay-Little Current portion has been let to the Superior Construction Co. The length of the section, including the loop to Espanola, is 46 miles. The route is described on pg. 111 of our Feb. issue. T. J. Kennedy, formerly General Superintendent of the Algoma Central and Hudson Bay Ry., President of the construction company, is in charge of the work, with offices at Espanola, Ont. J. D. McArthur, Winnipeg, Man., is Vice President of the Construction Co. The work is estimated to cost $1,500,000, and the contract has been let on a percentage basis. (Mar., pg. 207.)

Mid-Provincial and Nechaco Ry.—The British Columbia Legislature has authorized the incorporation of a company with this title to build the railway mentioned in our last issue. (Mar., pg. 249.)

Michigan Central Rd.—The Board of Railway Commissioners has authorized the use of subways, as follows: Tecumseh and Dougall roads, Sandwich tp.; Charing Cross, Kent county; and Ross St., St. Thomas, Ont.; and to use the drawbridges at Chippewa Creek. (Feb., pg. 111.)

Montreal and Northern Colonization Ry.—In re-drafting the bill before the Quebec Legislature asking for the incorporation of a company with this title, the promoters have reproduced almost entirely the sections of the Canadian Eastern Ry., a company incorporated by the Quebec Legislature in 1906. In committee Mar. 10. the names of the provisional directors were changed to A. Bougevin, W. Williamson, O. S. Perrault, R. Bickerdike and O. Faucher. (Mar., pg. 209.)

Montreal Central Terminal Ry.—Application is being made to the Dominion Parliament to extend the time within which the company's projected works may be constructed. Hogg and Hogg, Montreal, are solicitors for applicants. (Mar., pg. 207.)

Naas and Skeena Rivers Ry.—The British Columbia Ry. has incorporated a company with this title. (March, pg. 249.)

Northern Vancouver Island Ry.—The British Columbia Legislature has incorporated a company with this title. (Mar., pg. 249.)

Ontario Railways Co.—The provisional directors named in the bill before the Dominion Parliament, for the incorporation of a company with this title are: J. H. Kittermaster, J. Newton, I. Newton, H. F. Holland, Sarnia, Ont.; A. W. McLimond, Jackson, Mich.; A. D. Bennett, M. W. Mills, Port Huron, Mich. (Mar., pg. 249.)

Pacific and Hudson Bay Ry.—The provisional directors named in the bill before the Dominion Parliament, for the incorporation of a company with this title, to build the railways specifically mentioned in our Feb. issue, are: W. D. Verschoyle, J. F. Bledsoe, S. R. MacClinton, W. F. Brougham, T. J. L. Peake and G. D. Eaton, Vancouver, B.C., (Feb., pg. 113.)

Peace and Naas River Ry.—The British Columbia Legislature has incorporated a company with this title. The title appearing in the notice of application was the Naas and Peace River Ry. (See Naas and Peace River Ry., Mar., pg. 249.)

Prince Edward Island Ry.—We are advised in connection with the reports as to the early construction of the North Shore branch to connect Kensington and New London, P.E.I., about 12 miles, that nothing has been decided.

Reid Newfoundland Co.—In the Newfoundland Legislature Mar. 2, the Premier said the branch line from Shoal Harbor to Bonavista would not be considered complete until the spur line at Trinity had been built. The surveys for the spur, which would be a mile and a half long, had been made and approved; a portion of the right of way, and the site of the station in Trinity had been acquired. (Jan., pg. 23.)

Simcoe, Bruce and Grey Ry.—The Minister of Railways, replying to a deputation recently, said the application for a subsidy in aid of construction would receive careful consideration. The particular piece of line which the company proposes to build is that from Owen Sound to Meaford, for which Parliament has on previous occasions voted a subsidy. (Mar., pg. 209.)

Southern Central Pacific Ry.—The routes of the two branch lines which the company is asking the Dominion Parliament to authorize it to build, were more explicitly described when the bill was in committee. As passed by the House of Commons, one branch will start from the point where the projected main line crosses the Blind Man, or the North Saskatchewan Rivers, northwesterly crossing the Athabasca River, to Dunvegan on the Peace River, thence to the Parsnip River, then southerly to the Nechaco River, and then southwesterly to Deans Channel or Gardiner's Canal, B.C.; and the other starting from the Elk River, B.C., and proceeding easterly to Pincher Creek, the Waterton River, and Cardston, reaching the International boundary at Milk River. (Dec., 1910, pg. 1027.)

Temiskaming and Northern Ontario Ry.—The Ontario Legislature has authorized the Government to raise $3,000,000 for construction on this railway. The Provincial Treasurer said the extension to the Porcupine country would absorb $600.000 of this, and a further sum would be utilized for building a connection between the T. and N.O. R., and the G.T.R. at North Bay. The connecting line, several miles in length, would cross the C.P.R. line without going into the North Bay yards.

Application is being made to the commission to arrange for the building of a spur line along the water front at Haileybury, Ont.

Tenders are under consideration for the erection of a passenger station at Matheson.

A decision is expected to be made at an early date in reference to the proposal to build a line to Elk City and Gowganda.

The final location map of the Porcupine branch shows a line branching off from the main line at Iroquois Falls, mileage 224.5, and proceeding southerly and westerly to the shore of Frederick House Lake, skirting the south of the lake for about five miles, thence in the same direction through Matheson and Whitney tps. to Porcupine Lake, passing to the south of the lake to Porcupine River in Tisdale tp., mileage 29. It is possible that it may be necessary to extend the branch further west, but this will depend upon the future development of the camp. The branch has been located with maximum gradient of 1%, and a maximum curvature of six degrees. In order to hasten the completion of the branch, temporary construction curves in excess of 1% have been

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used in a few places. The principal structure on the route is a pile trestle, 900 ft. long, across the Frederick House River. Work on the line is being pushed rapidly, and it is expected that track will be laid on the first 11 miles early in April. The bridge timbers for the bridge at Frederick House River are being prepared, on which work is to be started at once. Considerable progress has been made with the clearing and grading beyond that point. (Mar., pg. 209, and also Charlton to Elk Lake, (Mar., pg. 249.)

Toronto, Hamilton and Buffalo Ry.—The Board of Railway Commissioners has authorized the company to take certain lands in Barton tp., to increase its yard facilities at Hamilton, Ont. (Mar., pg. 209.)

Toronto, Proposed Central Terminal Station.—Representatives of a New York syndicate propose to renew their application to the Toronto city council for permission to build a central terminal station in the city. The new proposal, press reports state, is to lease the tunnels connecting with the station to the railways, and to build the station on a block about 1,000 ft. square in the centre of the city. (Jan., 1910, pg. 23.)

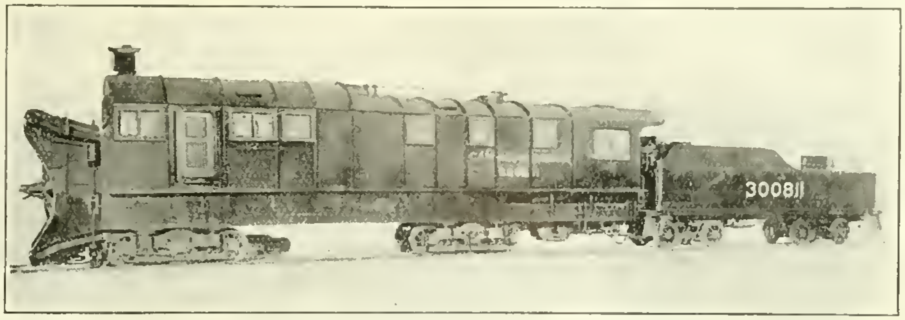
Yellow Head Pass.—A press report states that "C. J. Leyland, Haggerstown Castle, Scotland, who owns a coal property near the Yellow Head Pass, B.C.," is having surveys made for "a 20 mile line to connect the mines with the G. T. Pacific Ry." Haggerston Castle is in Northumberland, Eng., and not in Scotland.

Winnipeg North Eastern Ry.—Application to the Manitoba Legislature to incorporate a company with this title, to build a railway from Winnipeg, easterly and northerly along the east side of Lake Winnipeg to the northern boundary of the province. H. P. Blackwood, Winnipeg, is solicitor for applicants.

Press reports from Winnipeg state that the surveys for the first section of this line, from Winnipeg to Fort Alexander, on the Winnipeg River, are being made by Canadian Northern Ry. engineers, and that a considerable portion of the right of way has been acquired by interests closely connected with Mackenzie, Mann & Co.

◆

The British Columbia Legislature has passed an act authorizing the regulation of railway construction camps, and providing for the inspection of the same by medical officers.



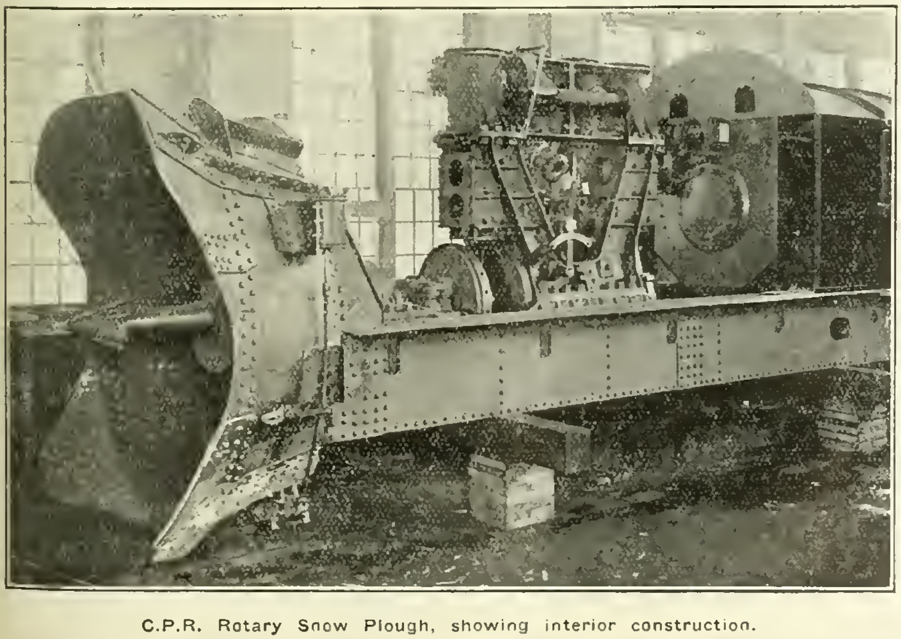
C.P.R. Rotary Snow Plough.

C. P. R. Rotary Snow Ploughs.

Two of the accompanying illustrations show the outside appearance of the two rotary snow ploughs which the C.P.R. had built in the latter part of last year by the Montreal Locomotive Works. The other illustration shows the appearance of the plough before the cab was put on.

During the past few winters the C.P.R. experienced considerable delay and trouble on account of the older types of rotary snow ploughs, usually known as the Leslie, giving trouble by breaking down when working in heavy drifts, on account of the lack of stiffness in the frame, and the consequent springing and distortion of the engines, and the fact that the wheels being made of sheet steel were easily damaged in case of trees or rocks being present in the drifts, as occasionally occurs when track is obstructed by slides. Delays of any kind nowadays are so objectionable that it was decided to construct two ploughs which would in every way be as strong as it was possible to make them. The wheels, instead of being built of sheet steel, are made of steel castings, the blades being 1 in. thick at the edge and heavily ribbed. The framing, instead of being constructed of I beams, is made of two heavy box girders about 3 ft. deep for the greater portion of their length. The engines, instead of being placed by the side of the boiler in driving the wheel shaft through gearing, are vertical, and drive directly on the wheel shaft. The boiler is made of ample capacity to supply sufficient steam. The result is the plough shown in the accompanying illustrations. These ploughs weigh 260,000 lbs. each; the wheel shaft is driven by a 24 in. vertical engine, giving steam at 200 lbs. pressure; the boiler is 61 ins. diameter at the front end, and has a grate area of 34 sq. ft. The tender is made with 8,000 gallon capacity, and is specially long so as to separate the weight of the plough from the engines pushing it. A novelty is introduced in the way of a steadying device placed under the hood, which is lowered down on the track when the plow is running, thus taking all vibration off the springs. The results, we are advised, are entirely satisfactory, and the ploughs, which are employed on the mountain section in British Columbia, are doing all that can be expected.

We are indebted to H. H. Vaughan, Assistant to the Vice President C.P.R., for the foregoing data, and also for the photographs.



C.P.R. Rotary Snow Plough, showing interior construction.

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The Quebec Bridge.

The Minister of Railways replying to questions in House of Commons, Mar. 7, said the contract for the building of the bridge had not been signed. There were details in connection with the contract that it would not be in the interest of the public to mention at present. In a very short time he expected to have the matter closed up so far as the wording of the contract was concerned, when all papers in connection with it would be laid before the House. On Mar. 8, he stated that the plans and specifications for the bridge had not been submitted to the Chief Engineer of the G.T. Pacific Ry., as the bridge is not comprised in the eastern division of the National Transcontinental Railway as covered by statute. The question of using the bridge, he added, had been discussed with the G.T. Pacific Ry., but it was considered premature to endeavor to make any arrangements with the railway companies until the construction of the bridge was further advanced.

Some days previously the Minister made a lengthy statement as to the bridge, in which he said that the estimated cost of the building including the loss on account of the old bridge would be $20,000,000. There had been only one proposal made for a suspension type of bridge, and that this had been unanimously condemned as unsuited for the purpose. It was estimated that the bridge would be completed in from three to five years, but in his opinion, five years would be required. Mr. Fitzmaurice had resigned from the Commission because of ill health in the first place, and because he did not altogether agree with the design which the other two Commissioners had favored. His resignation had been accepted, because it was desirable at that stage of the proceedings that there should be a man in his place who would be able to give more time to the work. Mr. Vautelet had

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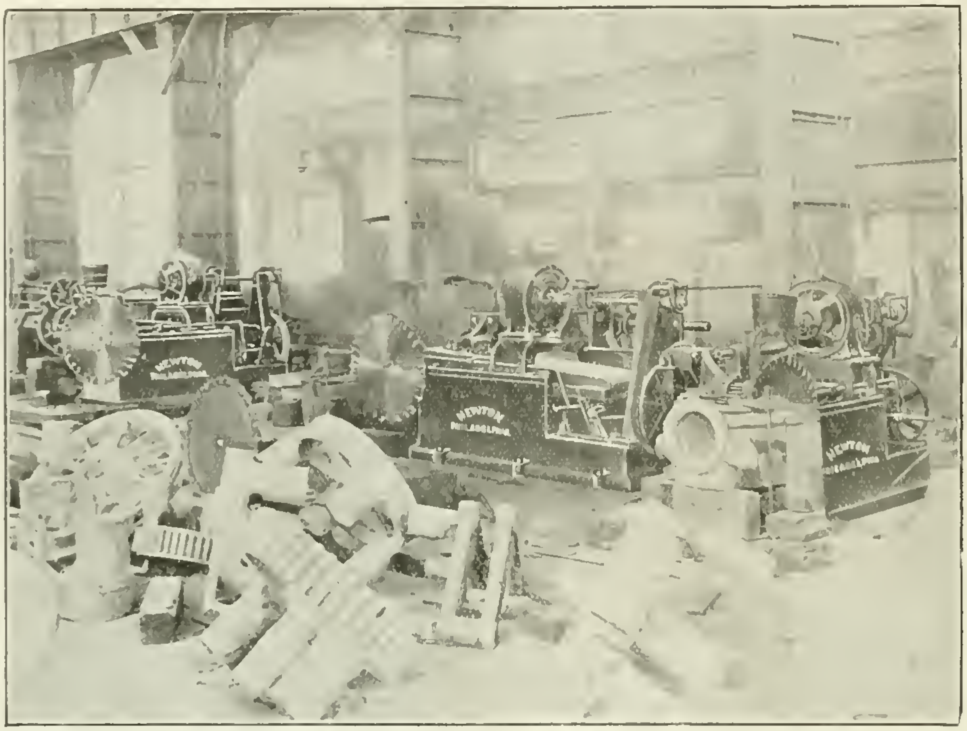

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resigned because of his health, and as the design which he favored had not been adopted he (the Minister) thought that the work of carrying out the design should be in the hands of an engineer who was more in sympathy with the accepted plans. It was expected that the contract with the St. Lawrence Bridge Co., would be signed within a short time.

The question of the damage to one of the caissons used at the foundation work for the new bridge was the subject of a series of question in the House of Commons recently. The Minister of Railways in reply said one of the caissons was damaged owing to the breaking of a pump, and the consequent grounding of the caisson, on an uneven bottom. The caisson was strained, necessitating the removal of the concrete which had been placed in it, and the placing of the caisson itself in dry dock for repairs. The cost to date for labor and material in connection with repairs was $75,000. about 2,300 cubic yards of concrete had been placed in the caisson at the time of the accident, its approximate value in place being $14,000, and the cost of removal $7,000. The work of sinking the caisson stopped Aug. 31, 1910, and nothing more was done on that part of the work, while all work was stopped for the winter Dec. 23. The contractor was responsible for any loss on account of the accident to the caisson, and the Department was not aware of any claim having been made by him on account of any alleged loss. The plans for the caisson were made for the contractor by A. Noble of New York, and were approved by the Board of Engineers appointed by the Government to have charge of the reconstructing of the bridge. (Mar., pg. 215.)

◆

Railway Commissioners' Traffic Orders.

Summaries of other traffic orders are given on another page under "Orders by Railway Commissioners":—

RATES ONTARIO TO MISSISSIPPI POINTS.

12854. Feb. 1.—Re application of J. F. Tucker, Chairman Central Freight Association, Chicago, as agent for the carriers parties thereto, for permission to postpone the effective date of his joint and proportional tariff on classes and commodities from points within the competitive territory in Ontario south of and including the G.T.R. line from Sarnia Tunnel to Suspension Bridge, via London and Hamilton, to Lower Mississippi River, Alabama, and Louisiana points, until Sep. 1, 1911. Upon its appearing that the said postponement has been ordered by the Interstate Commerce Commission with respect to the rates shown in the said tariff to the said territory from points south of the International Boundary: and in pursuance of the powers conferred upon the Board by sec. 329 of the Railway Act, it is ordered that permission be granted for the suspension of the freight rates from Ontario shown in the tariff of joint and proportional rates, C.R.C. 188, issued by J. F. Tucker, of Chicago, until Sept. 1, and for the reinstatement until and including Aug. 31, of the joint and proportional rates between the same points shown in J. F. Tucker's tariff C.R.C. 180, which tariff was superseded by C.R.C. 188, Nov. 1, 1910.

EXPORT RATES TO HALIFAX.

12882. Jan. 25 and 26.—Re application of Board of Trade of Halifax, N.S. complaining that the G.T.R. unjustly discriminates against the port of Halifax and in favor of other Atlantic ports in its differential rate of 1c per 100 lbs. on all traffic between Halifax and Montreal and points east of Montreal. Upon reading what has been filed in support of the application and on behalf of the railway; and upon hearing the application in the presence of counsel for applicant and the company, it is ordered that the application be dismissed.

Chief Commissioner Mabee gave oral judgment in this case as follows:—The matter is one of very great importance, we are fully alive to that, to the port of Halifax, and it is with regret that we feel we are not at liberty to enter into the merits of this contention. Perhaps, as we have not heard the merits, it would be unfair to the parties that we should give any indication of what we might think of them or as to what impression we have obtained from the statement of the case by counsel for the applicants.

The one short ground upon which the case must be put, in so far as this Board is concerned, is that of jurisdiction, and we are all of the opinion that in the peculiar situation this matter stands it is not a case in which we are at liberty to interfere. The matter lies within a brief compass. Parliament defines certain rules for railways to operate under and live up to. It says that railway companies shall not discriminate against persons or localities. Then it constitutes this tribunal and hands this act to us and says to us. "As far as you are able see that the regulations we have laid down there are lived up to." But in handing us this statute it says: "See that the provisions of this act are in force so long as they are not in conflict with some other statutes that we have put upon the books." It retains to itself power to incorporate a railway and insert in that act of incorporation anything it sees fit. And Parliament can tomorrow incorporate a railway and say that none of the provisions of the Railway Act, with reference to discrimination, shall apply to that road. If it did that it would paralyze the arm of this tribunal to the extent of preventing it from applying to that particular road the provisions in this law dealing with discrimination.

Parliament has said that, in so far as or wherever the provisions of the Railway Act and of any special act passed by the Parliament of Canada relate to the same subject matter, the provisions of the special act shall, in so far as is necessary to give effect to such special act, be taken to override the provisions of this act. Now, is there a special act? There clearly is: chap. 5, 62 and 63 Vic. Does it deal with the same subject matter? Now, one of the subject matters of the Railway Act is that respecting rates which carriers may charge. Does the special act deal with that? It clearly does. Because it says the Halifax rates are to be 1c. per 100 lbs. on all classes over the rates to and from St. John or Portland. Now, we have got a special act in conflict with the provisions of the Railway Act, to the extent of saying that the rates over these two roads to Halifax shall be 1c. per 100 lbs. more than the rates to Portland or St. John. So that, applying sec. 3 of the Railway Act to the special act we have got conflict, and the law says that where there is conflict with reference to the same subject matter, the provisions of the special act shall govern. Can there be any doubt about this being a special act and about this agreement really forming part of it? The special act deals with the agreement, it confirms it, and part of the thing that is confirmed is this 20c. a ton differential against Halifax.

The late Chief Commissioner Killam (for whose opinion, both in his lifetime and since his death the bar of this country have always had the greatest respect) held that this supplemental traffic agreement of Feb., 1898, must be considered to have been confirmed by statute. I think we would have come to the same conclusion as he did, even had we not had his well-considered opinion to guide us. So it seems to us to be perfectly clear that this tribunal cannot interfere and wipe out the arrangement that Parliament put into effect between these two roads. We do not put it upon the ground that the Intercolonial is owned by the Government. The situation would be the same, we think, if it were an agreement between the C.P.R. and the G.T.R., or between any two roads in Canada. If railway companies are able to get legislation of this character upon the statute book, we have no alternative but to be guided by what Parliament has said. We cannot undo this transaction, we cannot interfere with it. The only body that can interfere with it is the body that brought it into effect and made it law.

WHITE PASS AND YUKON RATES.

The White Pass and Yukon Route has applied to the Board of Railway Commissioners for leave to appeal against the Board's recent order directing it to file new freight tariffs showing reductions, to come into effect Apl. 1.

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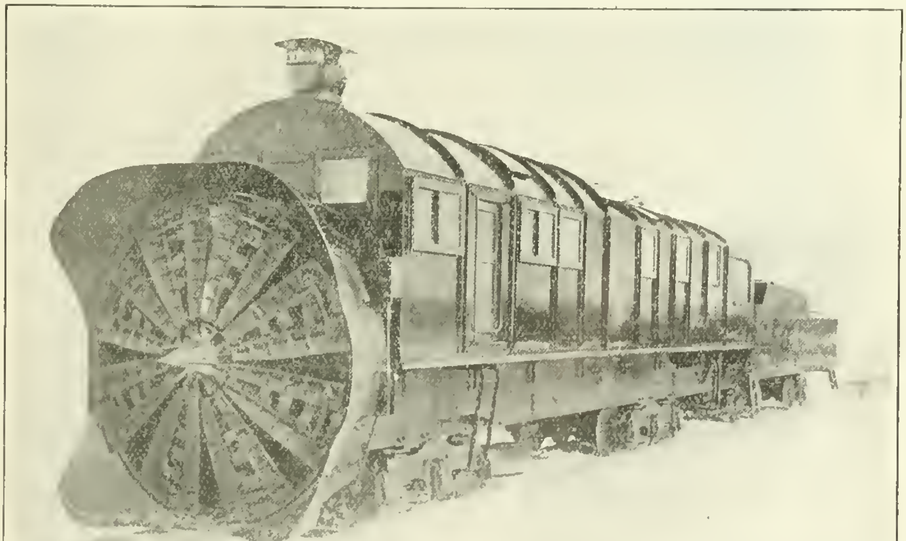
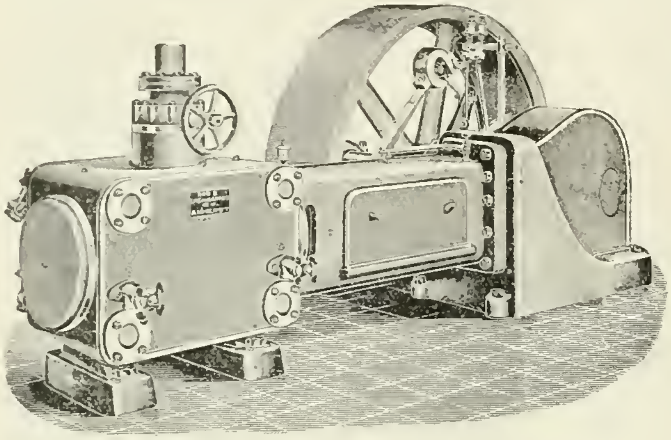
Mrs. Brown, wife of A. C. Brown, C.P.R. Agent at Guelph, Ont., died there, Mar. 11.



C.P.R. Rotary Snow Plough (See page 323).

ROBB CORLISS ENGINES



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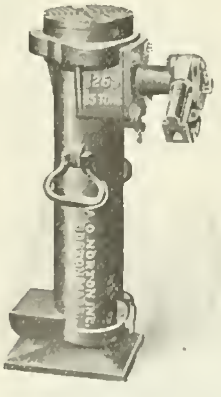

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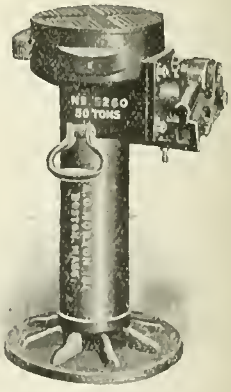

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Orders by the Railway Commissioners.

Beginning with June, 1904, we have published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the hearing took place and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the date assigned to them

12950. Feb. 11.—Approving revised location of C.P.R. Kipp to Aldersyde branch, previously approved by orders 6870 and 9278, from mileage 28 to 67.06, Alta.

12951. Feb. 11.—Authorizing C.P.R. to build spur to Diamond Coal Co.'s premises along and across Jarvis St. and lot 22, Toronto.

12952. Feb. 8. — Authorizing Vancouver, Victoria & Eastern Ry. to take whole of bed and foreshore of False Creek east of Westminster Ave., Vancouver, B.C., with exception of portion reserved by city.

12953. Feb. 10.—Prescribing forms of merchandise receipt, money receipt, collection receipt, limited liability livestock contract, livestock attendants' contract to be used by express companies, and ordering that the express classification for Canada C.R.C. 2, appended to judgment delivered Dec. 24, 1910, be approved and take effect Mar. 1.

12954. Jan. 23, 24.—Approving C.N.Q.R. Standard Tariff of Maximum Sleeping and Parlor Car Tolls C.R.C. S3.

12955. Feb. 10.—Approving Marconi Wireless Telegraph Co.'s tariff of rates C.R.C. 4 and 5.

12956. Jan. 16.—Authorizing G.T.R. to build spur to Massey-Harris Co.'s premises, Brantford, Ont.

12957. Feb. 7.—Authorizing T.H. & B.R. to take certain lands in Barton tp., Ont., to increase yard facilities at Hamilton, Ont.

12958. Feb. 13.—Authorizing Marx & Rawolle of Canada, Ltd., to lay water main under G.T.R. near St. Ambroise St., Montreal.

12959, 12960. Feb. 13.—Authorizing Ontario Hydro-Electric Commission to erect wires across G.T.R. at Main St., Norwich, and at Concession St., Tillsonburg.

12961. Feb. 13.—Authorizing Water Commissioners of London, Ont., to erect wires across G.T.R. at Talbot St.

12962. Feb. 13.—Ordering that G.T.R. trains do not exceed four miles an hour, and that standpipe and exhaust pipes be removed at Lyster station, Que.

12963. Feb. 13.—Approving location of G.T.P. station at Tofield, Alta.

12964. Feb. 13.—Authorizing C.N.O.R. to build across public road at con. 1, Grenville tp., Que.

12965 to 12996. Feb. 11, 13, 14.—Authorizing C.P.R. to build second track across public highways in Portage La Prairie and Rosser, Man., on Brandon subdivision, at 32 points.

12997. Feb. 11.—Approving C.N.O.R. revised location at Grenville, Que.

12998 to 13002. Feb. 10, 11, 13.—Authorizing C.P.R. to build additional second track across public highways in Portage la Prairie and Rosser, Man., on Brandon Subdivision, at five points.

13003. Feb. 13.—Authorizing C.P.R. to build spur to Macleod Quarrying & Contracting Co.'s premises in secs. 16 and 17, tp. 10, r. 24, w. 4 m., Alta.

13004. Feb. 7.—Authorizing Nepean tp. and Westboro village, Ont., to extend Victoria Ave. to Pacific Ave., across C.P.R.

13005. Feb. 13.—Authorizing D. J. Cyr, of Green River, N.B., to lay water pipe under C.P.R.

13006. Feb. 12.—Relieving C.N.R. from further protection at highway crossing at Lloydminster, Alta.

13007, 13008. Jan. 23, 24.—Approving Standard Tariff of Maximum Sleeping and Parlor Car Tolls of Maine Central Rd. and Central Vermont Ry.

13009. Feb. 7.—Authorizing C.N.O.R. to divert road on lots 5A and 4E, con. 1, Grenville tp., Que.

13010. Jan. 23, 24.—Approving Esquimalt, & Naniamo Ry. Standard Tariff of Maximum Sleeping and Parlor Car Tolls.

13011. Feb. 14.—Amending order 12949 Feb. 10, by adding, "It being understood that in engaging watchman, the M.C.R. is acting only as agent of the N. St. C. & T. Ry.

13012. Feb. 14.—Extending to May 15 time within which C.P.R. shall instal improved electric bell at Cote des Neiges road, Hochelaga Co., Que., as provided in order 12321, Nov. 18, 1910.

13013. Feb. 14.—Ordering that C.N.R. erect fences along right of way before June 15, 1911, under penalty of $25 a day, on complaint of Davidson, Sask., board of trade.

13014. Feb. 7.—Authorizing C.P.R. to divert highway between con. A and con. 1, Ottawa Front, Nepean tp., Ont., portion of highway to be deeded to township by C.P.R.

13015. Feb. 7.—Providing that G.T.R. maintain interlocking plant ordered in connection with N. St. C. & T. Ry., by order 9646, Feb. 17, 1910, and varying order 10310, April 20, 1910, in regard to working of interlocker, method of rendering bill, etc.

13016. Feb. 15.—Authorizing G.T.P. Branch Lines Co. to cross highway between secs. 23 and 26, tp. 36, r. 27, w. 2 m., Saskatoon District, Sask.

13017. Feb. 14.—Authorizing C.P.R. to build spur to International Harvester Co.'s premises in lots 5 and 6, block 165, plan 07 Saskatoon, Sask.

13018 to 13021. Feb. 14. — Authorizing M.C.R. to use subways at Tecumseh Road and Dougall Road, Sandwich West tp., at Charing Cross, Kent Co., and at Ross St., St. Thomas, Ont.

13022, 13023. Feb. 14.—Authorizing M.C.R. to use drawbridges at Chippewa Creek, Ont.

13024. Feb. 15.—Providing for interchange tracks between G.T.R. and N. St. C. & T. Ry., in St. Catharines, Ont., and authorizing crossing of John and Page Sts., and an unopened street.

13025. Feb. 15.—Authorizing G.T.P. Branch Lines Co. to cross highway between sec. 33, tp. 34, r. 27, and sec. 3, tp. 35, r. 27, w. 2 m., Saskatoon District, Sask.

13026. Feb. 15.—Approving G.T.R. plans for change of location and details of construction of retaining wall at Exhibition grounds, Toronto.

13027. Jan. 21.—Authorizing C.N.O.R. to cross Cotsmore Ave., Cobourg.

13028. Feb. 15.—Authorizing South River Electric Co. to erect wires across G.T.R. track and wires near South River village, between Strong and Machar tps., Ont.

13029. Feb. 7.—Approving G.T.R. plans of Howard Ave. subway, Toronto, and Jane St. subway, York tp., Ont.

13030. Feb. 7.—Authorizing C.N.O.R. to build bridge over North River, St. Andrews parish, Que., mileage 13.5, from Hawkesbury Ont.

13031. Feb. 17.—Authorizing Ontario Hydro-Electric Commission to erect wires across Bell Telephone Co.'s wires at lot 2, con. 11 Downie tp.

13032, 13033. Feb. 16.—Relieving G.T.R. from further protection at crossings 1¼ miles north of Paisley, Ont., and at Versaille St., Montreal.

13034. Feb. 18.—Approving C.N.O.R. location through unsurveyed territory, Algoma District, mileage 260 to 280, from Sudbury Jct., Ont.

13035. Feb. 18.—Approving location of C.P.R. Weyburn-Lethbridge branch from sec. 29, tp. 6, r. 13, w. 4 m., to the Lethbridge subdivision in sec. 4, tp. 9, r. 21, w. 4 m., from mileage 400 to 449.9.

13036. Feb. 16.—Correcting error in right of way plan registered as 678R of Calgary and Edmonton Ry. Lacombe branch (C.P.R.)

13037. Nov. 14.—Approving location of G.T.P. Branch Lines Co.'s station at Yorkton, Sask.

13038. Feb. 18.—Authorizing C.P.R. to build bridge over Eagle River, B.C.

13039. Feb. 16.—Authorizing G.T.R. to build spur to Thornbury Transportation and Reduction Co.'s premises, Thornbury, Ont.

13040 to 13044. Feb. 18.—Authorizing G.T.P. Branch Lines Co. to cross certain highways in Saskatchewan and Alberta.

13045. Feb. 20.—Authorizing Ontario Hydro-Electric Commission to erect wires across G.T.R. track and wires at lot 19, con. 2 East Oxford tp., Ont.

13046, 13047. Feb. 20.—Authorizing city of Nanaimo, B.C., to lay water pipes and sewer under Esquimalt and Nanaimo Ry.

13048. Feb. 20.—Authorizing city of Montreal to lay a sewer under G.T.R. on Etienne St., between Forfar and Mills Sts.

13049. Feb. 20.—Approving C.N.R. revised location, mileage 55.78-57.16 and 57.85-58.45, Thunder Bay District, Ont.

13050. Feb. 20. — Authorizing town of Bromptonville Que., to lay sewer under G.T.R. on Bridge St.

13051. Feb. 22.—Authorizing Western Canada Power Co. to erect wires across C.P.R. on lot 17, n.w. bank of Pitt River, and rescinding order 12389, Nov. 25, 1910.

13052. Feb. 21.—Authorizing town of Galt, Ont., to erect wires across C.P.R. on Stone Road.

13053 to 13057. Feb. 21.—Authorizing Seymour Power and Electric Co. to erect wires across Bell Telephone Co.'s wires at various points in Darlington tp., Ont.

13058. Feb. 21.—Approving location of Alberta Central Ry. from sec. 19, tp. 33, r. 17, w. 4 m., to sec. 15, tp. 32, r. 12, w. 4 m., mileage 80 to 120.

13059. Feb. 21.—Authorizing G.T.P.R. to build bridge over Kyax River, east of Prince Rupert, B.C.

13060. Feb. 21.—Approving M.C.R. bylaws for parties authorized to issue tariffs, and rescinding order 10917, June 16, 1910.

13061. Feb. 20.—Authorizing C.N.O.R. to divert and cross public road on lot 230, St. Eustache parish, Que.

13062. Feb. 21.—Authorizing C.P.R. to open for traffic portion of its Macklin Southeast branch from Macklin to Kerr Robert, 46 miles.

13063. Feb. 20.—Authorizing C.P.R. to build bridge over Scugog River, near Lindsay, Ont.

13064. Jan. 10.—Authorizing C.P.R. to build spur to Ontario Wind Engine and Pump Co.'s premises, across Henry Ave., and block 27, Winnipeg.

13065. Feb. 20.—Authorizing C.N.O.R. to divert road at Deer Lake, lot 9, con. 1, Burton tp.

13066. Feb. 22.—Ordering that C.N.R. build crossing at Clark's Crossing, south of sec. 11, tp. 38, r. 25, w. 3 m., under penalty of $25 a day after May 15, on complaint of Penner School District 1340, Sask.

13067 Feb. 22.—Authorizing C.N.O.R. to build over and divert public road on lots 578 and 581, South Rouge River Range, St. Andrews parish, Que.

13068. Feb. 21.—Authorizing G.T.R. to replace with iron bridge, present bridge carrying Silver St., between cons. 1 and 2, South Dumfries tp., Ont. .

13069. Feb. 20.—Authorizing G.T.R. to build spur to Ham and Nott Co.'s premises, north side of Elgin St., Brantford, Ont.

13070, 13071. Feb. 20.—Approving Standard Tariff of Maximum Passenger Tolls of Montreal Terminal Ry. and Montreal Park and Island Ry., providing for maximum toll of 2½c. a mile, in accordance with orders 12852 and 12853, Jan. 25, which were published in full in Railway and Marine World for March.

13072. Feb. 22.—Authorizing Seymour Power and Electric Co. to erect wires across Bell Telephone Co.'s wires at lots 6 and 7, Broken Front Concession, Darlington tp., Ont.

13073. Feb. 22.—Authorizing C.P.R. to build bridge 0.85 on its Timiskaming Branch, Lake Superior Division.

13074. Feb. 22.—Apportioning cost of gates to be installed at crossings authorized by order 12249, Oct. 12, 1910, in Hamilton, Ont., 20% to be paid out of the railway grade crossing fund, remainder to be paid by the railway companies interested, as follows: 20% by G.T.R. and 80% by T.H. & B. Ry.; gates to be operated day and night.

13075. Feb. 23.—Authorizing Red Mountain Ry., Nelson and Fort Sheppard Ry., and Vancouver, Victoria and Eastern Ry. to use forms of contract for transmitting and receiving messages as approved by order 9777, March 31, 1910, and approving same for four months from date.

13076. Feb. 20.—Authorizing C.P.R. to build spur from mileage 5.5 on Columbia and Western Ry. Phoenix Branch, to Wellington Camp, B.C., 3.15 miles.

13077. Feb. 22.—Authorizing C.P.R. to build spur to Dun Bros'. premises across block 44, Xante St., blocks 43, 42, 41, between Ross and Pacific Aves., Winnipeg.

13078. Feb. 23.—Authorizing Seymour Power and Electric Co. to erect wires across G.T.R. in lot 3, con. 2, Murray tp., Ont.

13079. Feb. 24.—Approving C.N.R. location through tp. 56, r. 25-24, w. 4 m., mileage 0.00 to 10.25, Alta.

13080. Feb. 24.—Approving location of portion of C.P.R. Weyburn to Lethbridge branch from mileage 316.78 to 400, Alta.

13081. Feb. 24.—Extending for 30 days from date time within which G.T.R. have to install electric bell near Mount Forest, Ont., authorized by order 12324, Nov. 18, 1910.

13082. Feb. .25.—Authorizing C.P.R. to cross Second Ave. and Manitoba St., Moose Jaw., Sask.

13083. Feb. 25.—Approving revised location of G.T.P. Branch Lines Co. from Regina to Moose Jaw, sec. 25, tp. 17, r. 20, to sec. 29, tp. 17, r. 20, w. 2 m., mileage 0.036 to 3.24, Sask.

13084. Feb. 25.—Authorizing C.P.R. to open for traffic second track of Brandon section from mileage 2 to 55, Man.

13085. Feb. 25.—Ordering that town of St. Louis, Que., complete subway at Park Ave. by Dec. 31, as required by order 10455, Apr. 28, 1910.

13086. Feb. 25.—Authorizing G.T.P. Branch Lines Co. to cross highway on its Yorkton extension, in s.w. ¼ sec. 24, tp. 26, r. 4, w. 2 m., Yorkton District, Sask.

13087, 13088. Feb. 25, 27.—Authorizing Ontario Hydro-Electric Commission to erect wires across C.P.R. at Concession St., Tillsonburg, and across G.T.R. at Swansea.

13089 to 13094. Feb. 27.—Authorizing city of Toronto to erect wires across G.T.R. and G.N.W. Telegraph Co.'s wires at Bloor St., across G.T.R. at Hanna Ave., C.P.R. at Yonge St., G.T.R. and G.N.W. Telegraph

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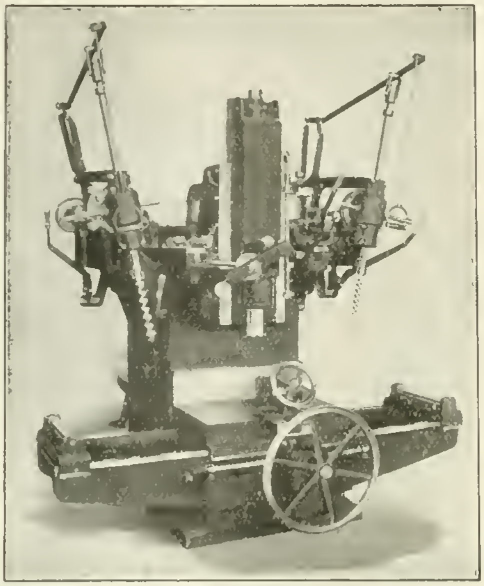

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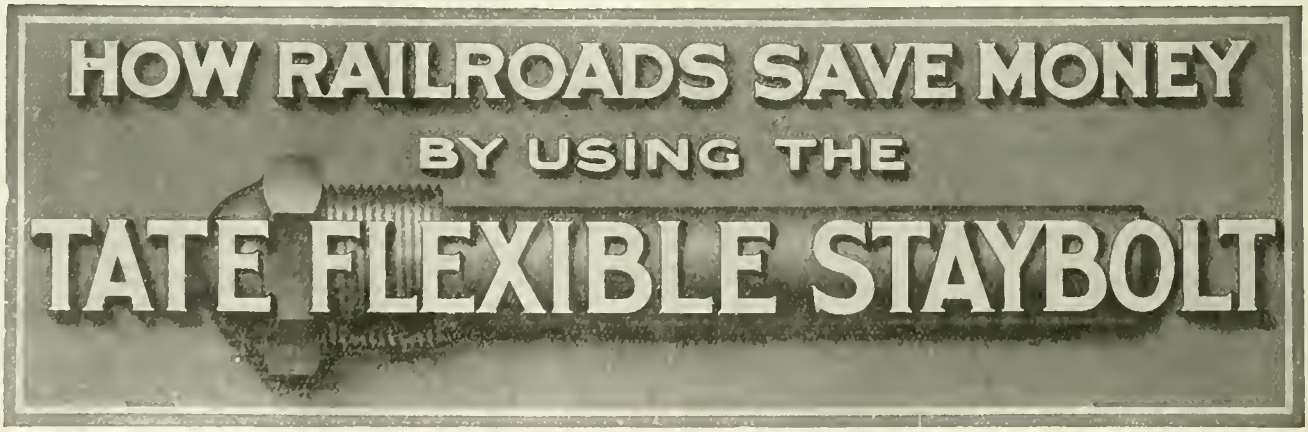

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13095. Feb. 27.—Authorizing city of St. Catharines to lay water pipe under G.T.R. on lot 17, con. 8, Grantham tp., Ont.

13096, 13097. Mar. 2.—Authorizing city of Toronto to erect wires across Bell Telephone Co.'s wires at two points.

13098. Mar. 3.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across C.P.R. at lot 2, immediately south of public road between con. 11 and 12, Dereham tp.

13099 to 13103. Mar. 3.—Authorizing city of Toronto to erect wires across Bell Telephone Co.'s wires at five points.

13104. Mar. 3.—Authorizing S. W. McMullin, East Florenceville, N.B., to lay pipe under C.P.R.

13105. Feb. 27.—Approving revised location of C.P.R. Kipp to Aldersyde branch, from mileage 67.06 to 84.18; original location approved by order 9278.

13106. Feb. 24.—Approving Toronto Eastern Ry. location through Pickering, Whitby East, Whitby and Darlington tps., Ont.

13107. Feb. 24.—Authorizing Toronto Eastern Ry. to build along Wellington and across Scugog, Temperance, George, Liberty and Division Sts., Bowmanville, Ont.

13108. Feb. 25.—Dismissing application of Etobicoke municipality, Ont., for protection of Mimico Ave. crossing by G.T.R.

13109. Feb. 25.—Ordering Great Northern Ry. before Sept. 1, under penalty of $25 a day to make ditch to prevent flooding G. Gordon's lands at Port Kells, B.C.

13110, 13111. Feb. 24.—Authorizing Toronto Eastern Ry. to build along Brant St. and across Mechanic, Church, Prince, Simcoe, Mary and Division Sts., Oshawa, along Mary St., across public road at station 195-59, Grand Trunk Railway St., Ash, Perry, Brock, Byron, Centre, Kent and Euclid Sts. and public road at station 227-02, Whitby, Ont.

13112. Feb. 24.—Rescinding order 9611, Feb. 17, 1910, which authorized C.N.O.R., to divert Kingston and side roads in Hamilton tp., and to cross same overhead..

13113. Feb. 27.—Authorizing G.T.R. to build spur from Pacific Ave., Toronto, to premises of Hinde & Dauch Paper Co. of Canada, Ltd., within six months from date, compensation to be paid for properties injured, if any, on Pacific Ave.

13114. Feb. 24.—Authorizing T.H. & B. Ry. to build spur across Trolley St. and Stipe's Road, Hamilton, Ont.

13115. Mar. 1.—Dismissing application of J. B. Yourex, Toronto, re extra charge for telephone.

13116. Feb. 27.—Approving location of new C.P.R. station near northern corner of Weston Road and Royce Ave., West Toronto.

13117. Feb. 27.—Authorizing C.P.R. to build seven tracks across Weston Road, and to build trans-ship platform, and ordering it to pay city of Toronto $8,052 towards cost of bridge now being rebuilt.

13118. Mar. 3.—Authorizing C.N.O.R. to rebuild bridge over St. Esprit River, near St. Julienne station.

13119. Feb. 4.—Rescinding order 12551, Dec. 17, 1910, which authorized C.N.R. to build spur between Van Horne and College Aves., Brandon, Man.

13120. Feb. 27.—Authorizing city of Toronto to erect wires across C.P.R. at Hanna Ave. and Liberty St.

13121. Feb. 27.—Dismissing Powell Lumber & Door Co.'s application to rescind order of Oct. 12, 1903, which authorized G.T.R. to build spur across Front and John Sts., Toronto, or to amend same by ordering G.T.R. only to use spur at noon or night or that free egress or ingress be provided.

13122. Mar. 7.—Approving Kettle River Valley Ry. location west and north of Midway, between Rock Creek and Westbridge, B.C., mileage 10.43 to 20.91.

13123. Mar. 6.—Authorizing city of Winnipeg to lay sewer under C.P.R. where Pembina branch intersects Godfrey Ave.

13124. Mar. 6.—Authorizing Ontario Hydro-Electric Commission to erect wires across C.P.R. at Hurontario St., Cooksville.

13125. Mar. 6.—Authorizing city of Toronto to erect wires across G.T.R. and G.N.W. Telegraph Co.'s wires at Wallace Ave.

13126 to 13130. Mar. 6. — Authorizing Guelph, Ont., Light and Heat Commissioners to erect wires across Bell Telephone Co.'s wires on certain streets.

13131. Mar. 6.—Authorizing South River Electric Co. to erect wires across G.T.R. and Bell Telephone Co.'s wires at Main St., Sundridge, Ont.

13132. Mar. 6.—Authorizing town of Swift Current, Sask., to place wires under C.P.R.

13133, 13134. Mar. 6.—Authorizing Canadian Niagara Power Co. to erect wires across Bell Telephone Co.'s wires at two points in Niagara Falls, Ont.

13135. Mar. 6.—Extending to May 18 time within which Hamilton St. Ry. and G.T.R. shall provide half interlocking plant at King St. crossing, Hamilton, as provided by order 12747, Jan. 12.

13136. Mar. 6.—Authorizing C.P.R. to rebuild and change location of bridge leading from Peterboro Lumber Co.'s premises to George St., Peterboro, Ont.

13137. Mar. 6.—Authorizing C.P.R. to build spur to D. Ackland and Son's premises in D.G.S. 14, St. John, Winnipeg.

13138. Mar. 7.—Authorizing C.P.R. to build bridge at Forty-Mile Creek, Laggan subdivision, Alta.

13139. Mar. 6.—Authorizing C.P.R. to build spur for city of Calgary, fronting on 9th Ave.

13140. Mar. 6.—Approving M.C.R. plan of interlocking appliances for protection of drawbridge over Chippewa Creek, near Montrose, Ont.

13141. Mar. 7.—Approving C.N.O.R. revised location in unsurveyed territory, Sudbury mining division, Algoma District, mileage 65.9 to 68.5 from Sudbury Jct.

13142. Mar. 7.—Authorizing C.P.R. to build additional tracks across 15th St. East, 9th Ave and 17th Ave., East, Calgary, Alta.

13143. Mar. 6.—Approving C.N.O.R. plan for 20 ft. arch over Jones Creek, Sidney tp.

13144. Feb. 28.—Authorizing G.T.P.R. to build spur to J. D. Clark & Co.'s premises, St. Boniface, Man.

13145. Mar. 6.—Authorizing G.T.P. Branch Lines Co. to cross highway on its Prince Albert Branch in s. w. ¼ secs. 32, tp. 40, r. 26, w. 2, m. Sask.

13146. Feb. 27.—Approving Quebec, Montreal & Southern Ry. Standard Passenger Tariff C.R.C. 162, for maximum fare of 3c. a mile.

13147. Mar. 6.—Extending to June 1, time for completion of three spurs in Calgary, Alta., by C.P.R., as authorized by order 11804, Sept. 27, 1910.

13148. Feb. 27.—Authorizing G.T.R. to build spur to Hagersville Constructing Co.'s premises, Walpole tp., Ont.

13149. Mar. 6.—Authorizing C.P.R. to divert highway on its Moose Jaw Northwesterly branch at mileage 103.3 and 110.6, Sask.

13150. Feb. 27.—Ordering G.T.R. to file new plans for subway at Brock Ave., Toronto within one month, question of division of cost to be deferred until filing of plans.

13151. Feb. 22.—Ordering Atlantic, Quebec & Western Ry., under penalty of $25 a day after May 1, to provide farm crossing for J. Collin, Can d'Espoir, Gaspe, Que.

13152. Feb. 27.—Rescinding order 12849, Jan. 30 and authorizing C.P.R. to operate three sidings along and across Pardee Ave. and Liberty St., but not to connect with G.T.R. siding at lot 30, Toronto.

13153. Feb. 28.—Dismissing application of W. Kerley, St. Thomas, Ont., for order allowing him to sue London & Lake Erie Ry. and Transportation Co., for $1,200 for operating its railway on Sundays.

13154 to 13157. Mar. 7.—Authorizing G.T.P. Branch Lines Co. to cross certain highways on its Calgary branch, consent having been granted by Alberta Government.

13158. Mar. 1.—Dismissing application of York tp. for order directing G.T.R. to provide level crossing for road to be opened over old Belt Line Ry.

13159. Feb. 18.—Authorizing Cobourg Water and Electric Co. to lay pipe under G.T.R. at George St., Cobourg, Ont.

13160. Mar. 8.—Authorizing G.T.P.R. to divert road in n.w. ¼ sec. 22, tp. 44, r. 6, w. 4 m., Alta.

13161. Mar. 8.—Rescinding order 12188, Nov. 7, 1910, which authorized C.N.O.R. to build across road on lot 2, con. 1, Belleville.

13162. Mar. 7.—Ordering C.P.R. to remove a warehouse and grant a lease at a nominal rental of $12 a year with renewal rights, on application of M. Meagher, Debec Jct., N.B.

13163. Mar. 8.—Authorizing city of Fort William, Ont., to maintain culvert under C.P.R. at Sprague St.

13164. Feb. 21.—Granting leave to C.N.R. and C.P.R. to appeal to the Supreme Court of Canada, subject to certain conditions, against order 12520, Dec. 10, 1910, which ordered them to file by Apr. 1, new freight tariffs between Fort William, Port Arthur and points east to Regina and Moose Jaw, Sask.

13165. Mar. 9.—Authorizing G.T.R. and N. St. C. & T. Ry. to operate trains over interlocking plant between Clifton Jct., and Stamford, Ont.

13166. Mar. 9.—Extending to June 1, time for completion of installation of interlocking plant by G.T.P.R. at C.P.R. crossing, at Alix, Alta., as provided by order 10613, May 13, 1910.

13167. Mar. 7.—Authorizing G.T.R. to build spur to National Acme Mfg. Co.'s premises, St. Henri, Montreal.

13168. Feb. 24.—Confirming agreement between city of Guelph, Ont., and C.P.R., in regard to protection of certain crossings, etc.

13169. Feb. 25.—Authorizing G.T.R. to build subway at Salisbury Ave., Mimico, Ont., plans to be filed by April 1.

13170. Mar. 8.—Authorizing payment of $3,000 to G.T.R., deposited by provisions of order 7613, July 22, 1909, re building of station between Clinton and Louth tps., Ont.

13171. Feb. 24.—Approving plans of G.T.R. station at Guelph, Ont., with proviso that satisfactory lavatory accommodation be provided and floor not to be of wood.

13172 to 13184. Mar. 9.—Authorizing city of Toronto to erect wires across Bell Telephone Co.'s wires on various streets.

13185. Feb. 27.—Ordering, on application of J. and J. Taylor, Toronto, that note to item 35, page 47 Canadian Classification 15, be struck out, and that safes of 1000 lbs. each or over, be struck from the list of exceptions to tariffs of cartage charges of railway companies.

13186. Mar. 7.—Approving plans of proposed platforms and train shed for central union passenger station at Ottawa.

13187, 13188. Mar. 9.—Authorizing G.T.P. Branch Lines Co. to cross highways in Saskatchewan as approved by Provincial Government.

13189. Mar. 10.—Approving C.N.O.R. location through Lanark County, from mileage 29 to 37.8.

13190. Mar. 10. — Approving plans of C.N.O.R. Shannonville station.

13191. Feb. 27.—Authorizing G.T.R. to take certain lands near Jamieson Ave. and Empress Crescent, Toronto, to enable it to comply with orders 8487 and 10169, Oct. 15, and Dec. 8, 1909, relating to Toronto grade separation.

13192. Mar. 10.—Authorizing city of Winnipeg to lay water main under C.P.R. at Portage Ave.

13193. Mar. 9.—Authorizing C.N.R. to cross 35 highways in Saskatchewan as shown on location plan approved by order 8050, Sept. 8, 1909.

13194. Mar. 10.—Authorizing Ontario Hydro-Electric Commission to carry wires over Bell Telephone Co.'s wires between Port Credit and Brampton.

13195. Mar. 10.—Extending to Aug. 1, time for installation of interlocking plant at C.N.R. crossing at Dana, Sask., by G.T.P.R., as authorized by order 11307, July 26, 1910.

13196. Mar. 9.—Ordering G.T.P.R. to complete by May 1, under penalty of $25 a day, the deviation of highway near Greenshields, Sask., as authorized by order 12066, Oct. 22, 1910.

13197. Mar. 7.—Authorizing C.N.O.R. to cross Notre Dame St. and Montreal St. Ry., overhead and join Harbor Commission, tracks, Montreal.

13198. Mar. 13.—Authorizing C.N.R. to cross nine highways in Saskatchewan, as shown on location plan approved by order 8590, Nov. 5, 1909.

13199. Mar. 11.—Authorizing B.C. Government to carry highway over B.C. Southern Ry., near Hosmer station.

13200. Mar. 11.—Authorizing Georgian Bay and Seaboard Ry. to cross by a subway Trespass Road, in Thorah tp., Ont. .

13201. Mar. 13.—Authorizing G.T.P. Branch Lines Co. to cross highway on its Prince Albert Branch in n.w. ¼ sec. 29, tp. 37, r. 26, w. 2 m., Sask.

13202 to 13204. Mar. 11. — Authorizing C.N.O.R. to cross public roads in Nepean tp.

13205. Mar. 10.—Authorizing C.P.R. to build spur to Virden Brick and Tile Co.'s premises near Virden, Man.

13206. Mar. 10. — Authorizing Dominion Natural Gas Co. to lay pipe under C.P.R. in Bayham tp., Ont.

13207. Mar. 10.—Authorizing city of Toronto to erect wires across Bell Telephone Co.'s wires at Wolfrey and Bowden Sts.

13208. Feb. 24.—Authorizing T.H. & B.R. to build spur to Canadian Westinghouse Co.'s premises, and across certain streets and lanes in Hamilton, Ont.

13209. Mar. 13.—Authorizing C.N.R. to cross highways in Alberta with consent of Provincial Government .

13210. Feb. 25.—Ordering G.T.R. to file by Apr. 1, plans for subway at Church St., Mimico, Ont.

13211. Mar. 13.—Authorizing C.N.O.R. and N.T. Ry. to operate trains over crossing near Tawachiche station, authorized by order 1945, Nov. 12, 1906, without being brought to a stop.

13212. Mar. 13.—Approving revised location of C.P.R., Regina, Saskatoon and North Saskatchewan branch from mileage 77.95 to 95.8 from Regina, and from mileage 95.8

13213. Mar. 13.—Authorizing C.P.R. to use to 132.69, on the Pheasant Hills branch. bridges 57.8 Teeswater branch, and 84.1 Toronto section.

13214. Mar. 13.—Approving location of C.N.O.R. through unsurveyed territory, Al-

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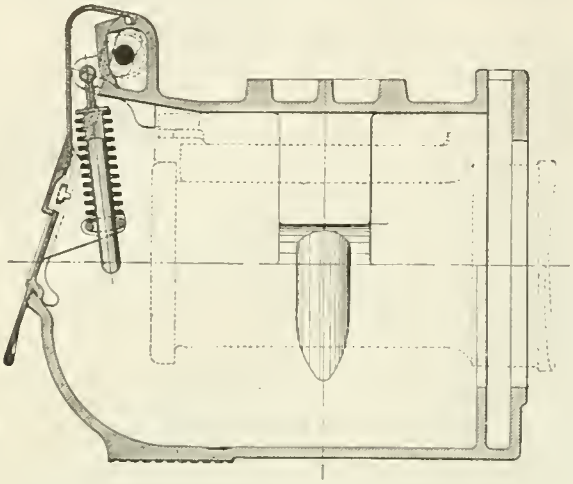

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goma District, mileage 240 to 560 from Sudbury Jct.

13215. Feb. 27.—Ordering G.T.R. on application of Thos. Miles Sons, Ltd, Hamilton, Ont., to restore rates on gas-house coke from Buffalo, Black Rock and Suspension Bridge, N.Y., to Ontario points shown in its special tariff C.R.C. E.2105, which were in effect Dec. 31, 1910, not later than April 24.

13216. Mar. 13.—Dismissing application of Kelly & Close, Port Arthur, Ont., re minimum rates on carloads of logs and piling alleged to be excessive as compared with minimum rates charged on carloads of lumber.

13217. Mar. 13.—Authorizing village of North Hatley, Que., to build highway crossing over B. & M. Rd., question cost of protection being reserved.

13218. Mar. 14.—Authorizing G.T.P. Branch Lines Co., to cross highways on its Calgary branch between mileage 50 and 99, Alta.

13219. Mar. 14.—Approving G.T.P.R. revised location from sec. 8, tp. 45, r. 2, to sec. 21, tp. 45, r. 3, w. 6 m., mileage 119.53 to 124.94, Alta.

13220. Mar. 13.—Authorizing B. C. Government to carry highway over C.P.R. near from Michel Station.

13221. Mar. 11.—Authorizing C.P.R. to build spur to R. D. Lindsey's premises, Vancouver, B.C.

13222. Mar. 13.—Authorizing C.P.R. to open for traffic, without speed limitations, its Moose Jaw Branch from mileage 14.5 to 118.75, Sask.

13223. Mar. 13.—Authorizing Trenton Electric & Water Co., to erect wires across G.T.R. near Belleville, Ont.

13224. Mar. 14.—Dismissing application of Canadian Piano and Organ Manufacturers' Association respecting classification on musical instruments.

13225. Mar. 13. Dimissing application of H. E. Ledoux Co., Winnipeg, for carload classification on cigars.

13226. Mar. 14.—Authorizing city of Lethbridge, Alta., to build overhead bridge across C.P.R. yards on Coutts St., produced north of Baroness Road.

13227. Mar. 14.—Authorizing G.T.P.R. to divert road in n.e. ¼ sec. 8, tp. 35, r. 3, w. 3 m., East Saskatchewan District.

13228. Jan. 17.—Ordering on application of Battle Creek Toasted Corn Flake Co., London, Ont., that Canadian Classification 15 be amended to provide minimum carload weight of not more than 24,000 lbs. for flaked or cooked cereals.

13229. Feb. 7.—Approving deviation of G.T.R. from Lindsay to Port Hope, Ont., as already built between Reaboro, on lot 10, con. 10, Ops tp., near Rice Lake Summit, on lot 16, con. 9, Hope tp., Ont.

13230. Feb. 24.—Ordering that 20% of cost of work at M.C.R. crossing at Fletcher's station, Ont., less expense of moving of Bell Telephone Co.'s poles, be paid out of railway grade crossing fund.

13231. Mar. 14.—Authorizing C.N.O.R. to build spur to National Bridge Co.'s premises, on lots 325 and 326, Longue Point Parish, Que.

13232. Mar. 14.—Approving Maine Central Rd. bylaw of Mar. 8, authorizing W. K. Sanderson, General Freight Agent and F. E. Boothby, General Passenger Agent to prepare and issue tariffs of tolls.

13233 to 13235. Mar. 15.—Approving London and Lake Erie Ry. and Transportation Co.'s Standard Passenger Tariff C.R.C. 1, at 2¼c. a mile, and Standard Freight Tariff C.R.C. 1, to take effect March 27, and approving bylaw 3, authorizing S. W. Mower, General Manager, to prepare and issue all tariffs.

13236. Mar. 15.—Authorizing G.T.P.R. to cross highway on its main line from mileage 61, sec. 26, tp. 53, r. 7, to mileage 90, sec. 8, tp. 54, r. 11, w. 5 m., Alta.

13237 to 13242. Mar. 15.—Authorizing city of Toronto to carry wires across G.T.R. and C.P.R., and G.N.W. Telegraph Co.'s wires at various streets.

◆

Following are the officers and directors of the Montreal Warehousing Co., for the current year: President, C. M. Hays; Vice President, E. H. Fitzhugh; other directors, W. M. Ramsay, J. W. Loud, Wm. Wainwright; manager and secretary G. H. Hanna.

The Cowan Construction Co., which recently applied for an authorization from the Manitoba Legislature to change its name to the Union Construction Co., will retain its old name, the application having been refused on the ground that there is already a company carrying on business under a Dominion charter as the Union Construction Co.

National Transcontinental Railway.

Replying to questions in the House of Commons recently, the Minister of Railways said the general standard of the railway through New Brunswick comprised a single track railway with necessary sidings of the standard gauge on a roadbed constructed and ballasted in accordance with the general specifications for the entire line, on which is laid 80-lb steel rails on first class cross ties, with steel fastenings. The bridges have concrete or stone substructures with steel superstructures, built in accordance with the general specifications of the Department of Railways, issued in 1908. The line is constructed with gradients not in general exceeding 0.4% adverse to east bound, and 0.6% adverse to west bound traffic, and with curves of a minimum radius of 955 ft. Near Tobique River, owing to the physical character of the country, a gradient of 1.1% is allowed. The present estimated cost per mile by contract divisions is as follows: No. 1, from Moncton westerly for 50 miles, $49,190 per mile; no. 2 eight miles to Chipman, $89,710 per mile; no. 3, Chipman to Intercolonial Ry., 39.7 miles, $35,333 per mile; no. 4, from Intercolonial Ry. to crossing of Tobique River, 67 miles, $46,920 per mile; no. 5, from Tobique River to mileage 2.5 west of Grand Falls, 31.5 miles, $133,518 per mile; no. 6, from last mentioned point to New Brunswick-Quebec boundary, 67 miles, $46,484 per mile. The cost per mile on no. 2 is high on account of the heavy grade; at the east end of the contract there is a cut about two miles long and 18 ft. deep at the highest point; there is also a heavy fill at the crossing of the Salmon River at mileage 57, and a viaduct of 1,200 ft. The cost per mile on no. 5 is high on account of the grading being unusually heavy and there is a steel viaduct nearly 4,000 ft. long, with a maximum height of 250 ft. across the Little Salmon River. The work provided for in the estimated cost includes clearing, excavation, culverts, substructures of bridges, tracklaying, ballasting, ties, signals, interlocking appliances, telegraph lines, fencing, water supply, track scales, temporary trestles, and extra work, also pumps and pumphouses, rails and fastenings, including frogs, switches and diamond crosses, and the steel superstructures and flooring of bridges.

The Minister of Railways in the course of a speech in the House of Commons Mar. 10, upon transportation matters, said with regard to the portion of the N.T.R. being built by the Government from Moncton, N.B., to Winnipeg, presented a statement prepared by the Commission as to the various contracts. This shows districts, mileages, etc., percentage of work done on each contract, miles of grading done, miles of track laid, miles of telegraph line completed, percentage of steel bridge superstructures completed, and total percentage of work done on all these 21 contracts up to Dec. 31, 1910. The total quantity of work done to that date was 67.62%. The statement, signed by D. MacPherson, Assistant Chief Engineer, is given below.

Mileages are given in the statement for 24 contracts the reason for this being that in three cases adjacent contracts are being carried out by the same contractor. The total mileage given is for the line to the west bank of the Red River at Winnipeg, while the percentage of contracts completed covers only to the east bank of the river.

An itemized statement of the cost of the work done to Dec. 31, 1910, and an estimate of the cost of the work required to complete the line, is as follows:

Items.	Work done.	Required to complete.
Grading, contract items	$69,176,400	$28,175,800
Right of way, expenses, etc.	1,629,900	1,910,100
Rails and fastenings, etc.	8,534,900	4,037,100
Buildings	664,800	3,644,200
Steel superstructures of bridges	3,342,100	2,242,900
Surveys and expenses	3,987,000	26,000
Engineering and expenses	4,398,500	2,712,000
Springfield shops	1,117,800	1,227,200
" car shop plant, etc.	nil	1,300,000
Terminals at Quebec, including connecting lines	19,000	4,419,000
Rentals joint terminals, Winnipeg	105,000	95,000
Headquarter expenses	1,605,100	969,900
Total	$94,580,500	$50,759,200

This statement, the Minister said, did not include the interest charged, but there was a question on that subject on the order paper, which would be answered in due course by the Finance Department. The statement now made was more complete than any that he had been able to give the House. He might mention that the section of the line from east of Winnipeg to Superior Jct., had been operated during the past few months in assisting to carry the wheat crop of the west, joining with the G.T. Pacific Ry.'s own line at Superior Jct., and the traffic being carried thence to

Contractor.	Through Mileage of Contract.	Per cent. of contract completed.	Miles of grading completed in district.	Miles of track laid in district.	Miles of telegraph completed in district.	Per cent. steel bridges completed in district.
Grand Trunk Pacific Con. Co.	0. 50	99.50	251.8	*50.6 †249.92 300.52	206.49	81.1
J. W. McManus & Co., Ltd.	50. 58	98.43				
Grand Trunk Pacific Con. Co.	58. 06.42	99.04				
" " "	96.42. 163.80	99.36				
W. Kitchen Co., Ltd.	163. 8. 195.58	89.87				
Lyons & White	195.58. 256.61	88.71				
M. P. and J. T. Davis	256.61. 310.22	62. 8	419.6	*28.05 †302.21 330.26	186.6	73.9
" " (East Que. Bridge	310.22. 460.45	75. 7				
" " (West "	460.45. 510.31	88.02				
Macdonald & O'Brien	510.31. 610.41	94.04				
Grand Trunk Pacific Con. Co	610.41. 656.83	92.93				
Macdonald & O'Brien	656.83. 763.83	28.10				
" "	763.83. 878.80	Nil.	74.3	*2.0 †15.8 17.8	Nil.	....
Grand Trunk Pacific Con. Co.	878.80. 956.74					
" " "	956.74.1028.80	66.46				
E. F. & G. E. Fauquier	1028.80.1128.77		197.4	*28.5 †174.4 202.9	92	71.2
M. P. & J. T. Davis	1128.77.1172.85	73.04				
" "	1172.85.1232.85	12.49				
" "	1232.85 1332.85					
E. F. & G. E. Fauquier	1332.85.1407.85	Nil.	76.9	Nil.	Nil.	
O Brien, Fowler & Macdougall Bros.	1407.85.1428.04	63.45 55.54				.....
" " "	1428.04.1534.04		346.5	*87.2 †298.4 385.6	366.9	54.1
" " "	1534.04.1557.46	84.76				
J. D. McArthur	1557.80.1804.13	95. 5				

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* Sidings. † Main.

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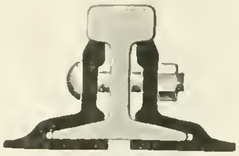

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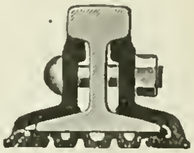

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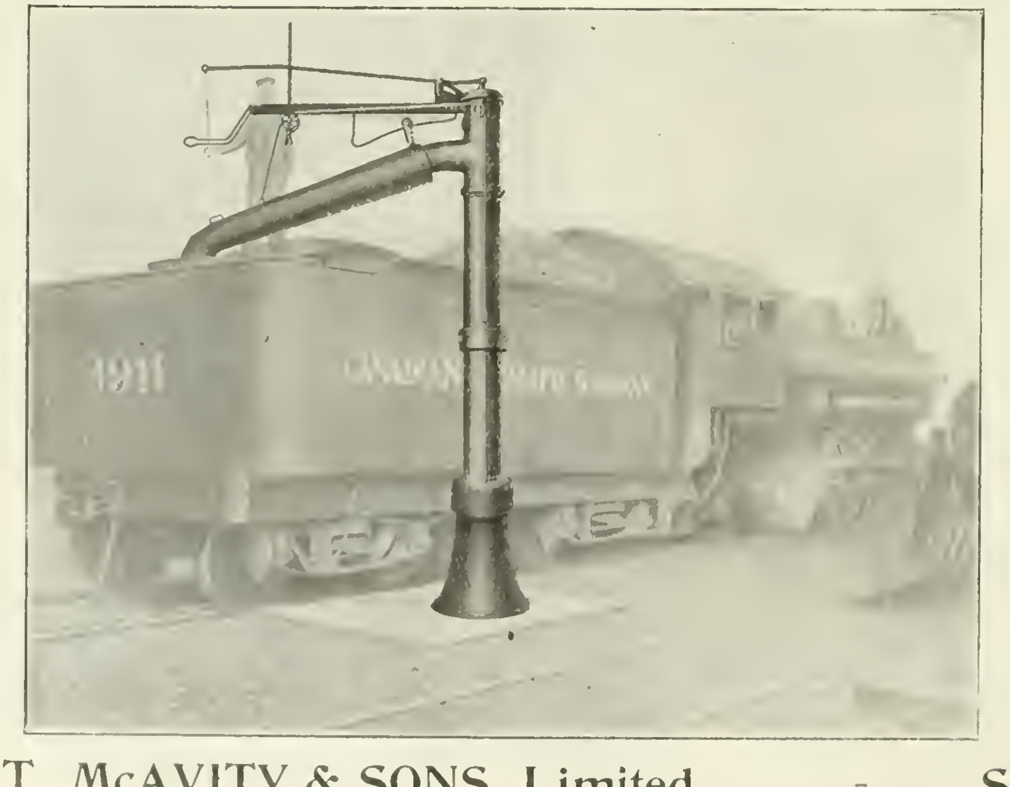

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the company's elevators at Fort William. It is being operated as a contractors' line rather than as a finished line, and the arrangement made with reference to its operation would be laid on the table in the near future. He had no information as to the rates being charged, but presumed they were the same as those charged on the C.P.R. and the C.N.R., between the same points.

In further explanation of figures given as to the cost of the N.T.R., to Dec. 31, 1910, the Minister of Railways stated Mar. 18, that $89,553,740.32 represented the amount of money paid out, and $93,920,956.16 the cost of work done. The estimated amount required to complete the line was $55,785.909.68. The equipment is to be found by the G.T.P.R. the operating company under the lease. In the figures given nothing was included for interest during construction, or for the seven years period after the line is handed over to the company, during which time no rental is collectable

In connection with the settlement of disputes between the G.T.P.R. and the Commissioners as to over classification and over break, on the Moncton-Winnipeg line, the Minister said: The inspecting engineers of the G.T.P.Ry. and the engineers of the N.T.R. Commissioners met and adjusted some of the differences. These settlements involved reductions from the contractors' estimates as follows: District "F"—Contractor J. D. McArthur, $73,022.20; District "A"—Contractors Lyons and White, $16,219.10; District "B"—Contractors M. P. and J. T. Davis, $1,714.00; Contractors Macdonnell and O'Brien, $22,116.62. Total, $113,071.92. The chief engineer of the company and the chief engineer of the commission were also able to agree in the determination of a portion of the disputes with respect to overbreak on the McArthur contract, which involved a deduction from the contractor's estimates of the sum of $173.667.09. The other point, which is not yet determined, is in reference to 106 cuttings on the McArthur contract. On this the engineers could not agree and they called in the arbitrator, C. Schreiber. Mr. Schreiber has made a report which was concurred in by the chief engineer of the Grand Trunk Pacific Company, and the chief engineer of the commission. It is difficult for a layman like myself to arrive at the exact meaning of the report on account of its technical language; but in discussing the matter with the Chief Engineer, I find that, in order to ascertain definitely the result of the award in regard to these 106 cuttings, the engineers are now figuring it out, and I hope to have their report at an early date. . . . . These 106 rock cuttings and overbreaks with the items in reference to over classification, covered all the objections raised by the G.T.P.R. as to classification and overbreak and practically will form a settlement of all the differences between the two bodies."

Press reports state that contracts have been placed with the Lake Superior Corporation for 35,000 tons of steel rails, and with the Dominion Iron and Steel Co., for 26,000 tons.

In answer to questions the Minister of Railways stated Mar. 13, that the figures he had given as to the cost of the line to Dec. 31, 1910, did not include anything for interest, or anything on account of the Quebec Bridge. The money was provided partly from revenue and partly from the proceeds of loans. No loans had been raised exclusively for the railway. Two 3% loans had been raised, one dated Feb. 1908, for £3,000,000, to provide for maturing obligations, the construction of the line, and general purposes; and the second dated Oct. 1908, for £5,000.000 for the railway and other purposes. Interest on these loans was paid out of revenue, and charged to interest on public debt. The total amount of interest paid to date on these two loans was $3,534,366.65, and $947,659.50 had been paid for expenses in placing them. The Commissioners had drawn by letters of credit on the Government through the Department of Railways and Canals for $89,553,740.32 to Dec. 31, 1910, and from that date to Mar. 6, an additional amount of $3,863,244.82.

Tenders were received to Mar. 28 by the Commissioners for the building of a coal handling plant at the Winnipeg shops power house, and for coaling stations, ashpits and cinderhoists at Transcona, Man.; Redditt, Ont., and Graham, Ont.

GRAND TRUNK PACIFIC RY.

The Minister of Railways presented the following general statement respecting the G.TP.R. in the House of Commons, Mar. 10:

Mountain Section.		
Total expenditure as certified to by Chief Engineer		$18,765,330 20
Total payments made to the company		11,763,509 61
Prairie Section.		
Total expenditure as certified to by Chief Engineer		$34,436,168 48
Total payments made to the company upon guarantee	$10,735,482 92	
Total payment made to the company on account of special loan	10,000,000 00	
		20,735,482 92

The amount spent by the G.T.P.R. for rolling stock, locomotives, etc., up to date is $14.744,[illegible].14.

The following memorandum had been given him with regard to the progress of the work on the Mountain section:—"The road is progressing from the terminus of the prairie division west, and from Prince Rupert eastward. During the last few months I had the privilege with the Prime Minister and others, of visiting Prince Rupert and going out on this line for a number of miles towards the mountain pass. It may seem peculiar to those who are not in a position to know, when I say that there are sections of the Transcontinental east of Winnipeg much more difficult of construction than any section through the mountains from Prince Rupert east. Going along the Skeena River there are distances of several miles absolutely level and the difficulty the contractors have is not to overcome obstacles of grade so much as to overcome the difficulty of draining the railway owing to the level country. We went out for a good many miles over this section, and I believe it will be found in the years to come that this portion of the road running from Prince Rupert east, will tap many fertile valleys of British Columbia, and of course, we do not know what it will open up in the way of mineral and timber wealth. From Wolfe Creek west the road is ballasted as far as Edson for several miles; track laying has been completed to the 57th mile, and grading, etc., has been completed to the 65th mile, and at intervals as far as the 117th mile. The contract for the work has been let as far as the 180th mile, and at Edson there is under construction a station house, engine house and a machine shop. Tracklaying has been completed to mile 102 east from Prince Rupert, and grading is completed at intervals beyond mile 102 to mile 184. The contract has been let to mile 240, dating from Nov. 1, 1909. At Zanadri Rapids, mile 8, a 625 ft. steel bridge has been completed; at mile 147 the portals of a 700 ft. tunnel have been completed, and at mile 135 a 180 ft. tunnel has been completed." The total percentage of work done, added the Minister, is not nearly so large as he would like it to be, but he hoped at a later date to be able to give a definite statement on this matter. The contractors believe that the work will be completed in three years, although they state that there is great difficulty in obtaining labor. It was certain that the contractors were offering very high wages, and the reason they gave for not getting on more rapidly was the difficulty of finding labor.

The G.T. Pacific Branch Lines Co. has been authorized to build the following lines in addition to those mentioned in the bill now under consideration by the Dominion Parliament:—From Calgary southwesterly to Medicine Hat, Alta.; from east of range 18 or west of range 19, west first meridian, northwesterly to a junction with the western division of the G.T. Pacific Ry. between the easterly limit of range 28, and the westerly limit of range 29, west of the first meridian.

The G.T. Pacific Ry. has removed its offices from the Somerset Block, Winnipeg, to the south wing of the new station at Fort Garry, in which wing the company will occupy three floors. E. J. Chamberlin, Vice President and General Manager, is reported as having stated, Mar. 11, that the company will begin the work of erecting a big hotel on Broadway, between Fort and Garry streets, this year. The preliminary plans, he stated, had been prepared, and the specifications were being prepared. The hotel would be built of stone, and would not have less than 400 rooms.

Negotiations are reported to have been completed for the building of a branch from Harte to Brandon, Man., about 30 miles. The company, it is said, has received an assurance from the Dominion Government that a subsidy on the usual terms will be granted, and that a further grant of 25% of the cost of a bridge across the Assiniboine River will be given. The company's estimate of the cost of this bridge is $200,000. It is said that the branch will be built this year, and that in the near future it will be extended southerly to the International boundary.

The Board of Railway Commissioners has approved the location of the station to be built at Yorkton, Man., on the branch from Melville northerly towards Hudson Bay.

The grading of the line southwesterly from Melville to Regina is reported to have been 75% completed, and it is expected to finish the grading and the tracklaying into Regina this season.

Some grading has been done southerly from Regina towards the International boundary, and more work will be done on it this season.

A line is projected from Regina westerly to Moose Jaw, Sask., and the Board of Railway Commissioners has approved location plans, from sec. 25, tp. 17, range 20, mileage 0.036 from Regina, to sec. 29, tp. 17, range 20, mileage 3.24.

The branch line northerly from Young to Prince Albert, Sask., upon 25 miles, of which track has been laid, and about 70% of the grading completed, will be pushed forward to completion this year.

The Board of Railway Commissioners has approved the location of station at Tofield, Alta., the point on the main line from which the line under construction, southerly to Calgary, starts. The grading of this branch is reported to be practically completed, and track laid to the Red Deer River. The branch is expected to be completed this year.

From Edson, the first divisional point west of Edmonton, right of way has been cleared for a branch to the Brazeau River coal fields, and some grading has been done. Further progress is expected to be made with construction during this year.

A contract is reported to have been let to Collins Brothers, Hamilton, Ont., and Heatherwood, Alta., for the erec-

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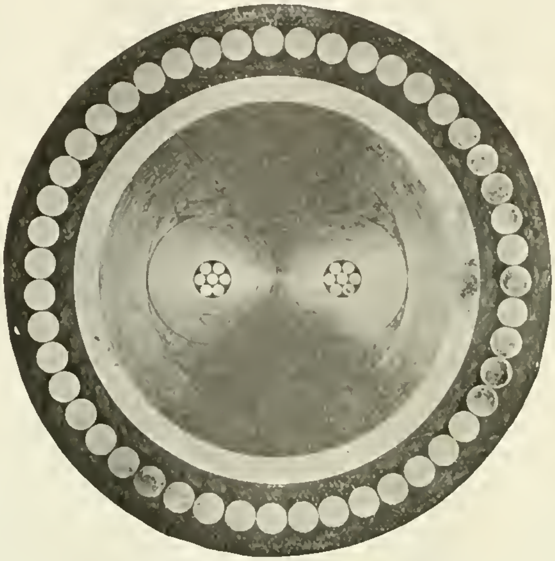

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Creek, where a large bridge is being built by the Dominion Bridge Co. This is expected to be completed by the end of May, when tracklaying will be resumed. It is expected that steel will be laid to Tete Jaune Cache, at the head of navigation on the Fraser River, about 50 miles west of Yellow Head Pass, by the end of the year.

In connection with the proposed branch from Fort George to Vancouver, D'Arcy Tate, the company's solicitor, is reported to have stated in Victoria, Mar. 8, that arrangements had been completed by which the company would obtain the land held by the Indians at Fort George, for townsite purposes. The final location of the branch is reported to have been completed by a party under M. A. Roby and W. F. Graham, and a press report states that a contract is likely to be let for building this branch at an early date. Another report from Vancouver states that a large area of water front land has been acquired at the northern end of Main St., sometimes called Westminster Ave., and that the site will be used for building an hotel.

In the prospectus a recent issue of bonds for the building of the Mountain section of the line, A. Smithers, Chairman of the G.T.R. Board, who is also Chairman of the London Committee of the G.T. Pacific Ry., said considerable progress had been made in the construction of the mountain section, both westward from Wolfe Creek, Alta., and eastward from Prince Rupert, B.C., and there only remained about 400 miles of line to be contracted for, tenders for which would be invited within a couple of months or so. When the contracts for the construction of this section have been let, the whole of the line from Prince Rupert to Edmonton, Winnipeg and Fort William, 2,188 miles, will be either under construction or completed.

In connection with the line easterly from Prince Rupert, B.C., the Board of Railway Commissioners has authorized the building of a bridge over Kyax River.

It was stated in Winnipeg Mar. 16, that the company expected to build 140 new station buildings on its lines during the current year. (Mar., pg. 283.)

◆

Eye and Ear Tests for Railway Employes.

The Board of Railway Commismissioners issued the following circular Mar. 16: "In accordance with secs. 5 and 6 of order 12225, Nov. 9, 1910, railway companies within the Board's jurisdiction are required to have their employes engaged in the operation of trains undergo a satisfactory eye and ear test by a competent person. In view of the diversified methods employed by such railways in the making of these tests the Board directs that a conference be held between the various railways subject to its jurisdiction and a uniform code of regulations drawn up governing the testing of hearing and eyesight of employes required to take such tests, these uniform regulations to be filed with the Board for approval within 90 days from the date of this circular."

◆

Railway Taxation in Saskatchewan.—It was stated in the Saskatchewan Legislature recently that there had been contributed to the provincial revenues under the Railway Taxation Act the following amounts:—

	1910.	1909.	1908.
C.P.R.	$54.000	$50,000	$50,000
Canadian Northern Ry...	9,972	9,972	9,972
G.T. Pacific Ry.	....	....	....

The C.P.R. contributed $25,000 for 1907.

tion of the concrete piers for a bridge across the McLeod River, near Edson, Alta., on the branch line to the Brazeau River coal fields.

On the main transcontinental line steel has been laid as far as Prairie

A Railway to Hudson Bay.

The question of the opening up of what was described as "the new route between the great west and the European markets, was referred to at some length in the House of Commons, Mar. 10, by the Minister of Railways in his general speech on transportation. The route, he said, had been used for many years, in so far as the waterway was concerned, but the project of the building of a railway to Hudson Bay was, although not new, something modern. About 1882, Hugh Sutherland, now Executive Agent Canadian Northern Ry., began discussing the project, and in 1885 he obtained from the Manitoba Legislature a bonus of $1,000,000 towards building such a railway. It was found to be impossible to raise the capital, so in 1886, the offer of aid was altered to a guarantee of 4% for 25 years, on a bond issue of $44,500,000, but even this failed to enable the promoters of the company to raise the necessary capital. About 1890, or a little later, the Government offered to give 12,800 acres of land and $6,400 a mile of a subsidy. That also failed, and he thought he might safely say that all private effort having failed to get the railway to Hudson Bay, the Dominion Government showed wisdom and courage in taking up the matter itself. In regard to the navigation, the Dominion Government had sent four or five different expeditions up to the bay and the straits. The ice difficulty on the route was not in the bay but in the straits.

At present, he did not think there was any land grant subsidy available for a railway to Hudson Bay, but he was not giving away secrets when he said that before the end of the session Parliament would be asked to discuss and consider a vote for the building of this line. The Hudson Bay railway route would afford an outlet for the products of the farmers of western Canada in the old country, the distance from Winnipeg to Fort Churchill being 945 miles, and from Fort Churchill to Liverpool, 2,946 miles, while the distance from Winnipeg to Montreal is 1.422 miles, and the distance from Montreal to Liverpool by the Belle Isle route is 2,761 miles and by the Cape Race route 2.927 miles. The Government proposed to proceed with the building of the railway. It was not a small task, and it was estimated that it would cost well in the vicinity of $25,000,000 to $30,000,000, which would, he believed, include elevators, wharves, etc. To this he was prepared to add another $5,000,000 or $6,000,000 because in working out the enterprise, an arrangement would have to be made with a steamship company, for without a steamship service the railway would not be of much use. One matter in connection with the steamship service was that Sydney, N.S., could be made a port of call, and a coal cargo taken on there for Hudson Bay. The present season of navigation in the bay was from three to four months, but there were those who believed that with the advances which were being made in science, it would not be many years before a way would be found to keep the Hudson straits open for a great deal longer than four months in the year. (Mar., pg. .207.)

◆

A recent press report from Moncton, N.B., stated that as a result of the development of the coal oil fields in Albert County, N.B., the oil may be utilized for fuel on I.C.R. locomotives. We have reason to believe that this report has no foundation. Oil would be too expensive on the I.C.R. Coal is much cheaper. We may add that G. R. Joughins, Superintendent of Motive Power, I.C.R., had a lot of experience with oil fuel when he was in the Santa Fe Rd. service a few years ago.

G.T.R. Betterments, Construction, Etc

Lachine, Jacques Cartier and Maisonneuve Ry.—In passing through Parliament the company's bill was amended by the addition of clauses providing that proceedings for the expropriation of lands in Montreal shall be completed within three months of the passing of the act; that the Board of Railway Commissioners shall be deemed to be substituted for the Provincial Commission of Public Utilities mentioned in certain agreements to which the company is a party; and authorizing the making of agreements with the C.P..R., the Canadian Northern Quebec Ry., and the Montreal Terminal Ry.

Round House, Ottawa East.—We are advised that plans are being prepared for some changes at the round house and machine shop at Ottawa East, but that at present it is impossible to state definitely what the changes will be, or when they will be made.

Ottawa Station, Etc.—The Board of Railway Commissioners has approved plans for the platforms and train shed for the central union passenger station.

Rideau Canal Bridge, Ottawa.—The company has in course of renewal the swing bridge over the Rideau Canal, which is situated west of Rideau Jct., where the line branches westward. The present bridge was built about 25 years ago. It consists of a single track plate girder span of equal arms and swings by hand power. The length over all is 106 ft. 9 ins., seven feed deep at centre, and two feet deep at the ends. This bridge was designed for a uniform live load of 3,000 lbs., per lineal foot. The new structure will be a similar kind of bridge, 120 ft. over all, 7½ ft. deep at centre, and 3½ ft. deep at the ends with a sustaining capacity double that of the present bridge, and it will be operated by an electric motor. On account of the heavier concentrated loading both the pivot and rest piers are being entirely rebuilt in concrete. The Dominion Bridge Co., is the contractor for the new superstructure, and the entire work is under the supervision of H. G. Kelley, Chief Engineer.

Canada Atlantic Division.—During the current construction season it is proposed to do considerable work in the way of filling in trestles, and to build several new bridges. The work of filling in trestles has been in progress ever since the G.T.R. took over the line, and it is expected that the whole work may be completed this year.

Brock Ave Subway.—The Board of Railway Commissioners has ordered the company to file new plans for the projected subway under the tracks at Brock Ave., Toronto, the question of the division of cost to be deferred until new plans are filed and approved.

Hamilton Improvements.—Press reports, Mar. 13, state that the company is seeking to secure a block of land on Ferguson Ave.. and that it is possible other property may be acquired in the vicinity for station and terminal purposes.

Galt and Elmira Branches.—U. E. Gillen, Superintendent Middle Division, informed a deputation representing Galt, Waterloo and Berlin, Ont., recently that he was favorably impressed with the suggestion that the Galt and Elmira branches should be electrified, and promised to have the whole matter looked into. (Mar., pg. 217.)

◆

Recent Manitoba Legislation.—An act regulating the taxation of railways, and another incorporating the Central Canada Rd. and Power Co. were assented to by the Lieutenant-Governor, among a number of general acts, Mar. 10.

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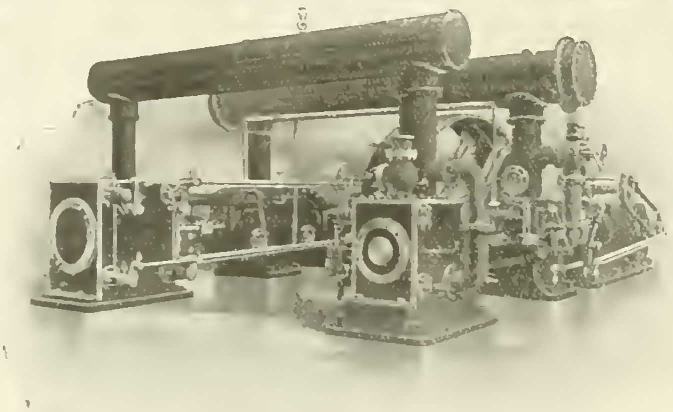

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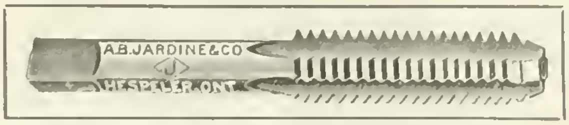

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C.P.R. Betterments, Construction, Etc.

St. John Improvements.—In an interview at St. John, N.B., Mar. 4, General Superintendent Downie is reported to have said that plans had been prepared for a warehouse about 400 by 40 ft., running parallel with Main St. In connection with this there would be six delivery tracks for teams, and track accommodation for 200 cars. It is also proposed to carry out some improvements at the Carleton elevator and wharves, and to make a beginning with the new yard accommodation in that section.

Atlantic Division Betterments.—General Superintendent Downie, in an interview at St. John, Mar. 4, is reported to have said that very considerable betterments will be carried out on the Atlantic division during the year. On the main line, in addition to the general work of ballasting, pile driving and filling, which had been in progress, the remaining wooden bridges will be replaced by steel structures; wooden culverts will be replaced by concrete ones; and 45 miles of light rails will be replaced by heavier ones. On the New Brunswick Southern Ry. new ties will be laid, concrete culverts put in, a good deal of riprap work will be done along the shores of Ludgate and Spruce lakes, and steel bridges will be put in at Linton, Pokologan, Didgeguash and Lancaster rivers. Additional sidings will be provided at Fredericton. On the St. Stephen branch some new bridges will be built, ballasting done, and sidings extended; 11 miles of track on the St. Andrews branch will be relaid with heavier rails; on the Woodstock branch six miles of track will be relaid with heavier rails, and two new steel bridges will be built; two new steel bridges will be put in on the Gibson branch; the Tobique branch will be diverted for a short distance at Rowena, and some miles of heavier rails laid; six miles of the Edmundston branch is to be relaid with heavier rails, a new steel bridge to be put in, and a 65 ft. turntable is to be put in at Edmundston; and on the Aroostook branch five miles of track is to be relaid with heavier rails. In addition to this a good deal of other work of a minor character is to be done.

Place Viger Improvements.—Press reports state that practically the whole of the steel work for the viaduct on Notre Dame St., Montreal, between Montcalm and Berri Streets, has been completed. As soon as the flooring and tracks are laid the bridge will be opened for traffic. When this is done the embankment over which the traffic is now being carried will be removed, and the land on both sides of the bridge laid out for yard purposes.

Ottawa Improvements. — An Ottawa press report states that a new 16-stall roundhouse is to be built at Hintonburg, Ont., west of the present one, a portion of which was burned down in the summer of 1910. The new building will be of concrete, and will, it is said, be started at once. Some rearrangement of the yards will also be made, and, it is also reported, tenders will be asked for the erection of a 500 ft. concrete bridge at Graham's station.

Timiskaming Branch. — The Board of Railway Commissioners has authorized the building of a bridge at mileage 0.85 on the branch line from Mattawa, Ont.

Smiths Falls to Bathurst, Ont.—A contract is reported to have been let to Jonas and Girouard, Ottawa, for the building of a second track from Smiths Falls to Bathurst, Ont., about 19 miles. Bathurst is the point on the Montreal-Toronto line from which it is said the new lake shore line to Locust Hill, near Toronto, also on the Montreal-Toronto line, will be built under the Campbellford, Lake Ontario and Western Ry.'s charter.

Georgian Bay and Seaboard Ry.—The Board of Railway Commissioners has authorized the building of a subway at Trespass road, lot 6, concession 11, Thorah tp., and the building of a bridge over the Scugog River, near Lindsay, Ont. The G.B. and S. Ry., and the Lindsay, Bobcaygeon and Pontypool Ry. effect a junction near where this bridge is to be built.

South Ontario Pacific Ry.—We are advised that tenders have been asked for the building of a line from Hamilton to Guelph Jct., Ont., and it is expected that a contract will be let at an early date.

The location plans show a line entering Hamilton south of the G.T.R. line, running westerly, and connecting with the Toronto, Hamilton and Buffalo Ry. In leaving Hamilton the line, after crossing the G.T.R., proceeds northerly, passing to the east of Waterdown village, and on to the 10th concession line of East Flamboro tp., where it passes into Nelson tp., and then on to Guelph Jct., where a junction is effected with the main line from Toronto to Windsor, and the line through Guelph to Goderich. The distance between Hamilton and Guelph Jct. is about 16 miles, and between Hamilton and Guelph 33.9 miles. J. E. Beattie is engineer in charge of the work at Guelph Jct., and he is reported as saying, Mar. 8, that the work would be started in about a month. W. J. Grant, C.P.R. agent in Hamilton, appeared before the Hamilton board of control recently, when it was arranged that the line should connect with the present C.P.R. line west of the Desjardins canal.

London, Ont.—Tenders were received to Mar. 25 for the building of a 22-stall engine house, with machine and boiler shops adjoining, at London, Ont. The new roundhouse will be built on Quebec St., near Elias St. Application is being made to the council for permission to change the location of Central Ave., and to exchange some pieces of land, so that the company may round out the area it has acquired in the vicinity for yard purposes, and to provide a suitable approach to the new roundhouse.

Toronto-Sudbury Line. — About two miles north of Bala, Ont., the line is carried across a muskeg by means of a trestle bridge, the safety of which is threatened by a creek running through the muskeg. Tenders are being asked for the boring of a tunnel 135 ft. long, five feet wide and six feet high, in order to divert the creek, and so enable the trestle to be replaced by an embankment.

Fort William Station.—The new station at Fort William, Ont., is reported to be completed, and the laying of tracks into it is being gone on with. It is expected that the business will be transferred from the old station at an early date.

Subway at Kenora, etc.—Tenders were received to Mar. 27 for the building of a subway at Kenora, and for bridges and culverts at various points on the Manitoba division.

Winnipeg-Brandon Second Track.—The Board of Railway Commissioners has authorized the opening for traffic of the second track from Rugby Jct., mileage two from Winnipeg, to Portage la Prairie, mileage 55. The grading for the extension from Portage la Prairie to Brandon has been practically completed, and the Board of Railway Commissioners has authorized the laying of the second track on this across the public highway at 37 points. Surveys are being made at the crossing of the Assiniboine river east of Brandon, with a view of determining whether it will be necessary to build a new bridge to carry the double track, or whether an addition will be made to the present bridge.

Brandon Station.—F. W. Peters, Assistant to the Vice President, informed the Brandon city council, Mar. 4, that an appropriation had been made for the building of a new station, and that work would be proceeded with this year.

Estevan to Forward, Sask.—Press reports say contract has been let to J. D. McArthur for 35 miles of grading to complete the branch from Estevan northwesterly to a junction with the line westerly from Weyburn, the junction point being at Forward, Sask.

Weyburn-Lethbridge Branch. — The Board of Railway Commissioners has approved the location of this line from mileage 316.78 to 400, and from mileage 400 to 449.9, Alta. A Lethbridge press report, Mar. 15, states that the location of mileage 449.9 is Montana Jct., on the Crows Nest Pass branch.

A contract has been let to Foley, Welch and Stewart for grading 20 miles westerly from the present terminus of the branch from Weyburn, Sask., towards Lethbridge, Alta.

Saskatchewan Division Buildings. — Tenders were received to Mar. 20 for the erection of the following buildings on this division:—Standard car repair shop, baggage and express building at Moose Jaw; freight shed at Regina; extension to machine shop, six stall addition to enginehouse, and six double cottages for employes at Sutherland; dining car stores building at Saskatoon, class A station buildings at seven points, and class 4 section houses at five points.

Qu'Appelle Valley.—Press dispatches state that the company has decided to build a branch line through the Qu'Appelle River valley, for a distance of 150 miles, and to erect a summer hotel at Fort Qu'Appelle, Sask.

Regina, Saskatoon and North Saskatchewan Branch.—The Board of Railway Commissioners has approved the revised location of this branch from mileage 77.95 from Regina to the north boundary of sec. 33, tp. 26, range 25, at mileage 95.8, and thence to sec. 1, tp. 35, range 28, mileage 132.69, where a junction is effected with the Pheasant Hills branch.

Swift Current, Sask.—Contracts have been let to Foley, Welch and Stewart for the building of two lines starting out of Swift Current, one for 45 miles southeasterly, and the other for 35 miles northwesterly.

Moose Jaw, Sask.—We are advised that a contract has been let to the J. G. Hargrave Co., Winnipeg, for the building of a second track from Moose Jaw east to Pasqua, seven miles, and from Moose Jaw west to Caron, 16 miles. In an interview, J. W. Hargrave stated that a small portion of the work would be sublet, but the main portion would be done directly by the firm.

Moose Jaw Branch.—The Board of Railway Commissioners has authorized the company to open for traffic without limitation of speed, the extension of this branch from mileage 14.5 (near Tuxford, Sask.) to mileage 118.75 (near St. Aldwyn, Sask.). A contract has been let to Foley, Welch and Stewart for the extension of this line from its present terminus for 35 miles. This will carry the line to a junction with the extension of the Lacombe branch.

Wilkie, Sask.—Contracts have been let to Dutton and Timson for the building of 50 miles of line northerly and southerly from Wilkie, on the Pheasant Hills branch. The northerly branch will be 25 miles long, and will be in the direc-

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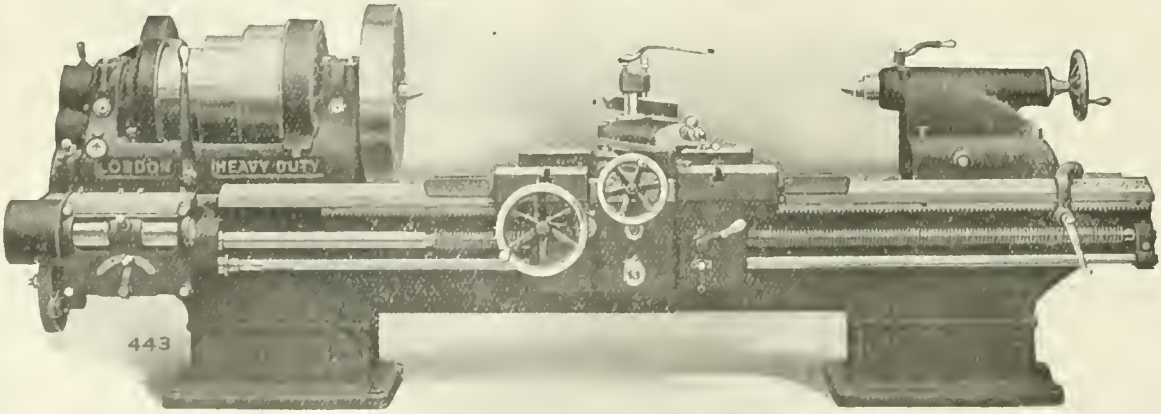

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tion of the Cutknife district, while the southerly branch will be built into the Tramping Lake district for 25 miles.

Macklin to Kerr Robert.—The Board of Railway Commissioners has authorized the company to open for traffic the line from Macklin southeasterly to Kerr Robert, Sask., 46 miles. Macklin is a station on the Pheasant Hills branch line, and Kerr Robert is on a branch of the Moose Jaw-Lacombe line. A contract is reported to have been let to F. W. Downs for building a six-stall roundhouse at Kerr Robert.

Alberta Division Buildings.—Tenders were received to Mar. 22 for the erection of the following buildings at various points on this Division.—One six-stall addition to standard no. 2 engine house, and locomotive fireman's cottage at Red Deer, Alta.; standard no. 4 section houses at 24 points; standard no. 5 section houses at five points, one to have a 50 ft. freight shed attached; standard no. 10 stations at three points; standard no. 1 bunkhouses at two points; standard plan A stations and 50 ft. freight sheds at two points.

Medicine Hat Station.—Tenders are under consideration for the erection of a brick and stone addition 116 ft. long to the station at Medicine Hat, Alta.

Bridges on Alberta Division.—Following are some particulars of a number of the more important bridges on the western lines to be erected this year:—

The bridge across the South Saskatchewan River, about three miles west of Medicine Hat, Alta., will have a total length of 1,010 ft., and will consist of three through steel trusses on the west, each being 217 ft. over all, carried upon masonry piers 8 ft. 10 in. wide. On the east there is a swing span, on a masonry pier 30½ ft. wide. The trusses are 20 ft. centres, and 31 ft. 9 in. above the bed of the river, the base of rail being 3 ft. 3 in. above the bottom chords. At each approach to the bridge there is a deck plate girder 30 ft. long on masonry abutments.

The bridge at the first crossing of the Bow River, 3.5 miles east of Calgary, will consist of two through steel spans, with a total length of 420 ft., built upon a centre pier of concrete with masonry abutments, the pier and abutments being built on a skew of 58 degrees. Each truss is 201 ft. over all, 29 ft. in height, and has an average depth of 17 ft. above the bed of the river. The base of rail is 3 ft. 3 in. above bottom laterals.

A bridge across the Elbow River, about one mile east of Calgary, will consist of a single span of 157 ft. 11 in., on masonry abutments. The trusses are 18½ ft. centres, 26 ft. 3 in. high, and the rail level is 22 ft. above the bed of the river. The base of the rail portal is 22 ft. 10 in., and the bridge is on a three degree curve.

About seven miles west of Calgary a single truss single span 214 ft. 9 in. centre to centre of end pins, on masonry abutments, will be built across the Bow River. The east and west approaches of the truss will be deck plate girders, each 17 ft. 4 in. long. The base of rail is 3 ft. 5 in. above bottom chords, and the trusses are 14 ft. above the bed of the river. Almost adjoining this bridge is a second bridge across the Bow River, to be built on concrete piers and abutments, and consisting of an east approach 24 ft. 10 in. deck plate girder, a through steel truss span of 214 ft. 9 in., and a west approach of 17 ft. 4 in. deck plate girder; the base of rail is 3 ft. 6 in. above bottom chords, and the trusses are 17 ft. 2 in. above the bed of the river. These are called the "Twin Bridges."

The third crossing of the Bow River is 25.5 miles west of Calgary, and the bridge to be erected will consist of two through trusses, each having a span of 198 ft. 6¾ in., on masonry pier and abutments. The pier and abutments are built on a skew. The base of rail is 3 ft. 3 in. above bottom chords, and the trusses are about an average height of 28 ft. 2 in. above the bed of the river.

Kipp-Aldersyde Branch.—The Board of Railway Commissioners has approved revised location plans of this branch from mileage 28 to 63.06. Mileage 28 is at Carmangay, the present terminus, and mileage 63 is near Aldersyde, Alta. A further order has been issued approving of a revised location from mileage 67.06 to 84.18.

Lacombe Branch.—A contract has been let to Foley, Welch and Stewart for the building of a 60 mile extension of this branch, which now has its terminus at Castor, Alta. This extension will carry the line to a junction with the branch from Moose Jaw, the contract for the extension of which has been let to the same firm.

Old Man River Bridge.—A contract is reported to have been let to Digby and Grenier, Fernie, B.C., for the erection of a bridge across the Old Man River, near Fernie. The work includes 2,000 cubic yards of excavation, 500 piles, 1,000 cubic yards of concrete, and 1,500,000 ft. of timber. The structure will be 800 ft. long and 137 ft. above high water mark.

Kootenay Central Ry.—A contract has been let to Jamse and McDonald for the building of an additional section of 25 miles of this line, southerly from Golden, B.C. Ten miles of grading has been completed out of Golden, and the 25 miles now contracted for will make altogether 41 miles under construction southerly. From Galloway, on the Crow's Nest Pass branch, about 30 miles have been graded northerly under a contract let in 1910 to Foley, Welch and Stewart, and a contract for an extension of this section for 12 miles to Baynes Lake has been let to Janse and McDonald.

Pacific Division Betterments, etc.—A good deal of work in the way of betterments is to be done during the current year on the Pacific Division. An additional mileage is to be relaid with heavier rails; side tracks and station switches are to be extended, and considerable ballasting done. Tenders have been asked for a new station building at Field, B.C., and a number of buildings are to be built at different points. The station at New Westminster is to be remodelled; additional freight facilities are to be provided at Vancouver, and other work is to be done in the yards near Beatty St. in that city.

New Westminster Jct.-Coquitlam.—We are advised that the C.P.R. has bought several hundred acres of land in the vicinity of New Westminster Jct., but to what purpose it will be devoted, whether for yard purposes, or for the storing and sorting of cars, has not yet been announced. The land is not needed at present, but owing to the development of business at Vancouver, and throughout the country, the company made the purchase to meet future requirements. It is most likely that the land will be laid out as a yard for sorting and storing cars.

Esquimalt and Nanaimo Ry.—Grading is reported to have been completed into Alberni, on the extension of this line, and the bridge work is being pushed forward. Rails are on hand for the tracklaying, and it is expected that work will be started at Cameron Lake, the present end of steel on the extension early in April. The contractors for the bridge work are Culliton Bros., while the general contractors for the extension are Janse, McDonald and Timothy. (Mar. pg. 227.)

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers to distinctly understand that we are not paid for the publication of any of this matter and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Tate Jones & Co., Inc., Empire Building, Pittsburg, Pa., has issued circular 134, respecting its new portable fuel oil burner, compressed air type, copies of which will be sent on request.

The Detroit Lubricator Co., Detroit, Mich., has issued an illustrated pamphlet describing the Detroit no. 22 Bullseye Locomotive Lubricator, the special feature of which is the oil control valve, which starts and stops all feeds.

McCord & Co., Inc., Peoples' Gas Building, Chicago, Ill., has published in booklet form "Locomotive Lubrication," by W. J. Schlacks, which covers the subject very thoroughly and also describes the McCord system of force feed locomotive lubrication. A copy will be sent to anyone interested on request.

The American Vanadium Co., Frick Building, Pittsburg, Pa., has brought out the first issue of "American Vanadium Facts," a house organ which is to be published periodically in the interest of Amervan Ferro Vanadium. This issue described what Vanadium is and gives a lot of interesting information about Vanadium steel forgings, governor pins, steel castings and machinery castings.

Burton W. Mudge & Co., 122 South Michigan Boulevard, Chicago, have issued a beautifully printed booklet "Garland Car Ventilation," in which its application to passenger and refrigerator cars is very fully described and illustrated. This system of ventilation is the invention of one of the company's vice presidents, T. H. Garland, who was for many years in charge of the Burlington Rd.'s refrigerator system.

S. & F. Bowser Co., Ltd., 66 Fraser Ave., Toronto, has issued a comprehensive booklet "Bowser Railroad Oil Storage," in which its pumps, tanks, etc., are fully described and illustrated; the systems, including a wide variety of styles from signal tower oil outfits, to the largest and most complex systems designed for the storage and handling of thousands of gallons of oil of different natures, under the most varying conditions.

The Montreal Steel Works, Ltd., report for the year 1910 shows net earnings of $230,069.96, exclusive of dividends, directors' and auditors' fees and after providing for depreciation; $50,000 has been placed to the credit of reserve account, bringing the account up to $250,000; $10,000 has been added to special reserve account to provide for contingencies, bringing it up to $40,000; quarterly dividends of 7% per year on the preferred stock, and 10% per year on the common stock were paid, amounting to $126,000; profit and loss account was increased by $2,444.72, bringing it up to $164,091.27. Of the $1,000,000 first mortgage bonds authorized in August 1910, $750,000 were sold, principally to shareholders who had the first right to subscribe. The new works at Longue Pointe were commenced in October last and the foundations being put in and the construction and equipment will proceed early in the spring.

◆

The Kingston and Pembroke Ry. locomotive drivers and firemen recently sent a deputation to the management to request that consideration be given to the question of wage increases. It is stated that the matter is under consideration, and that it is likely that an increase will be granted.

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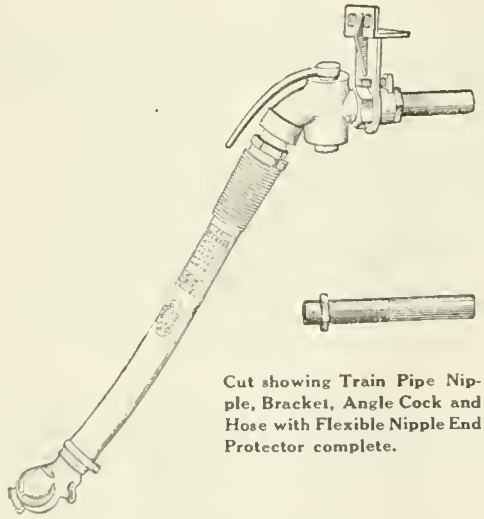

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Railway Finance, Meetings, Etc.

Alberta Ry. and Irrigation Co.—Approximate net profits from all sources, exclusive of land sales, for Jan., $25,340, against $40,375 for Jan. 1910. Cumulative net profits, exclusive of land sales, for seven months ended Jan. 31, $214,610. Railway traffic receipts for Feb. $18,214, against $25,851 for Feb., 1910. Cumulative railway traffic receipts for eight months ended Feb. 28, $220,101.

Canadian Northern Ry.—An issue was offered in London, Eng., Mar. 15, of a little over £1,000,000 of 3½% debenture stock at 94½, principal and interest guaranteed by the Dominion Government. The stock is made up of two different issues, viz., C.N.R. Co., £358,888, and Canadian Northern Alberta Ry. Co., £647,260.

Caraquet and Gulf Shore Ry.—Application is being made to the New Brunswick Legislature to authorize the Caraquet Ry. and the Gulf Shore Ry., to become consolidated with the title of the Caraquet and Gulf Shore Ry. and to issue bonds for $10,000 a mile. The Caraquet Ry. extends from Bathurst via Grand Anse to Caraquet, and thence to Sheppigan, 5 miles, and the Gulf Shore Ry., extends from Pokemouche Jct. to Tracadie Mills, eight miles. The two lines have always been operated under one management and for some years past have been under the same control. Bicknell, Bain, Strathy and Mackelcan, Toronto, are solicitors for the company.

Crow's Nest Pass Coal Co.—The profit and loss account for the year 1910 totalled $334,950.28, including $156,025.12 brought forward from the previous year and $18,054 dividends on securities owned. After paying dividends $210,734.28 was carried forward to the current year's account. The directors' report states that the Morrissey, Fernie and Michel Ry., which the company owns, carried forward from 1909, a deficit of $26,227.67. This loss was made up during the year, and on Dec. 31, 1910, there was at credit of profit and loss account of this company $11,296.81. Following is the board for the current year: President, E. Rogers, Toronto; Vice President, E. C. Whitney, Ottawa; other directors: Col. W. P. Clough, New York; H. B. McGivern, Ottawa; W. H. Robinson, Granby, Que.; Dr. Howland, Toronto; J. P. Graves, Spokane, Wash.

Dominion Atlantic Ry.—Gross earnings for Feb., $75,600, against $81,421 for Feb., 1910. Aggregate gross earnings for eight months ended Feb. 28, $896,606, against $964,004 or same period 1909-10.

The Grand Trunk Pacific Ry. Co. issued in London, Eng., Mar. 10, a prospectus of an issue of £696,000 4% mortgage sterling bonds due 1955, balance of a total authorized amount of £2,050,000 series B. (Mountain Section) bonds, principal and interest unconditionally guaranteed by the G.T.R. Co., the issue price being 92.

Grand Trunk Ry.—The Michigan State Commisioners, Mar. 22, authorized the G.T.R. Western Rd., the G.T.R.'s subsidiary company operating lines west of Detroit, to issue mortgage bonds for $30,000,000 for the purpose of buying the Pontiac, Oxford and Northern Rd. The acquirement of this line has been previously referred to, and the matter is now before the courts in an action arising out of the two-cent a mile fare law. It was ascertained in the course of the hearing that the majority of the company's stock was held by C. M. Hays in trust. Of the $30,000,000 bond issue, the company will control $23,000,000, the expenditure of the remaining $7,500,000 being subject to the approval of the State Railroad Commission.

Kaslo and Slocan Ry.—A press report from Nelson, B.C., states that a syndicate of Kaslo men has secured an option on the K. and S. R. from the Great Northern Ry. Co.

Manitoulin and North Shore Ry.—At a special meeting of shareholders of the Lake Superior Corporation at Camden, N.J., Mar. 1, a plan for the reorganization of the Manitoulin and North Shore Ry., one of the subsidiary companies, was approved. The reorganization plan provides for the sale of the line, 24 miles, under the powers given in the mortgage for $250,000, the amount of the bonds, and such bonds will be cancelled. The new capital will consist of $2,000,000 of common stock, $1,000,000 of 5% non-cumulative preferred stock, and $3,000,000 of 50 year 5% first mortgage redeemable gold bonds, the amount to be issued being equal to $30,000 a mile of completed railway. The Lake Superior Corporation guarantees the principal and interest of the bonds, receiving in return therefor $1,000,000 of common stock, and $8,000,000 of preferred stock, thereby having the controlling power, as preferred and common stock have equal voting powers.

Maritime Coal, Ry. and Power Co.—The Nova Scotia Legislature is being asked to amend the company's act of incorporation and amending acts, by authorizing the issue of $1,000,000 in shares bearing fixed cumulative, or non-cumulative dividends, at the discretion of the shareholders, at 7 per cent., preferred as to dividend and capital, and authorizing the directors to pledge or sell such shares; that four directors shall form a quorum, and also authorizing the sale or disposal of the plant and property and to acquire shares in any other company.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—A mortgage for $1,358,866 bearing interest at 4½ % was filed Mar. 7, with the Secretary of State at St. Paul, Minn., the proceeds of which are being devoted to the purchase of additional all-steel rolling stock.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—An increase of 21% of the capital stock has beem authorized by the directors, and it has been announced that the present stock holders will have the right to subscribe at par, in the proportion of seven shares of preferred and 14 shares of common stock for each 100 shares now held.

Morrissey, Fernie and Michel Ry.—The annual meeting was held, Mar. 10. The compamy does not publish any annual report. Following is the board for the current year:—President and Chairman, Elias Rogers; Vice President, E. C. Whitney; other directors, H. B. McGiverin, W. P. Clough, A. E. Stovel.

Ontario Sault Ste. Marie Ry.—Following is the board for the current year, elected Mar 14:—President, C. M. Hays; Vice President, W. Wainwright; Secretary-Treasurer, F. Scott; other directors, M. M. Reynolds, W. H. Biggar, K.C., E. J. Chamberlin, R. S. Logam, J. Hobson.

Pacific Coast Coal Mines Co.—The British Columbia Legislature has authorized the company to reduce its capital stock to $2,000,000, and to create debenture stock for $1,500,000 and to validate an agreement made between J. Arbuthnot J. M. Savage, J. C. McGarvin and the Vancouver Island Timber Co., of the first part; J. P. Hartman and C. C. Michener, of the second part; the P. C. C. M. Co., of the third part; E. Hodson and D. S. Spencer of the fourth part, and S. H. Reynolds of the fifth part. The company owns a railway at Fiddicks, Vancouver Island, and has power to build lines at other points in B. C.

The suit against J. Arbuthnot and others, brought by E. Hudson to recover 2,250 shares of the company has been settled by a reorganization of the company. The reorganization meeting was held in Victoria, Mar. 4, when the following officers and directors were elected: Chairman of the board, J. P. Hartman, President and Managing Director, C. C. Michener, Victoria; Vice President, L. D. Wishard, New York; Second Vice President, Dr. C. C. Kimball, New York; Secretary-Treasurer, J. F. Mosley, New York; other directors, C. H. Robertson, Victoria; R. N. Thompson, Seattle, Wash.

Quebec and Lake St. John Ry.—At a meeting of the prior lien, first mortgage and income bond holders, held in London, Eng., Mar. 17, an agreement of Feb. 16, 1911, with the Canadian Northern Ry., to exchange the whole of the bonds for new 4% debenture stock, guaranteed as to principal and interest by the C.N.R., was adopted and confirmed.

Earnings for Feb., $35,541.35, against $32,339.17 for Feb., 1910. Aggregate total earnings for two months ended Feb. 28, $76,314.78, against $69,994.01 for same period 1910. Mileage operated, 285.4, against 280 for same period 1910.

Quebec Central Ry.—Gross earnings for Jan., $63,771.66; expenses $57,057.02; net earnimgs $6,714.64, against $61,197.90 gross earnings; $54,944.93 expenses; $6,252.97 net earnings for Jan. 1910. Aggregate gross earnings for seven months ended Jan. 31, $684,608.31; expenses $469,817.82; met earnings $214,790.50, against $641,824.35 aggregate gross earnings; 443,306.69 expenses; $198,17.66 net earnings.

Temiscouata Ry.—The profits on operation for 1910, were $47,184.

Victoria and Sidney Ry.—The city council of Victoria, B.C., has for some time past had under consideration, its position under the agreement as to the guarantee of the company's bonds. In 1892 an agreement was made jointly between the company, the city and the province, whereby the company issued bonds for $300,000, the interest of 5% being guaranteed by the city, as to 3% and by the province as to 2%. Under this guarantee the city has paid $162,000 and the province $103,000, the company never having paid anything. The city solicitor, in reporting on the matter, states that all money paid by the city under the guarantee is, by the agreement, made a debt due from time to time to the city and the province respectively, and a charge on the company's assets ranking after the bond issue. During the earlier years of the company's existence there was no doubt of its inability to pay the interest, but of late years it has earned quite enough to pay the interest. He had been led to believe that earnings had been considerably understated, and that a large portion of what should have gone to the V. and S. R. has been absorbed into other lines and companies belonging to the contracting company (the Great Northern Ry.). It is said that the matter will be brought before the courts at an early date.

White Pass and Yukon Ry.—Gross earnings for seven months ended Jan. 31, $800,919.

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Railway Viaduct For Toronto.

The Judicial Committee of the Privy Council in London, Eng., has dismissed the C.P.R. Co.'s appeal against the Board of Railway Commissioners' order requiring the railway companies entering Toronto to build a viaduct along the Esplanade.

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The Canadian Northern Ry. hotel, Prince Arthur, was officially opened at Port Arthur, Ont., Mar. 14, when the company gave a dinner to a number of the city offifficials and other citizens. G. H. Shaw, General Traffic Manager, presided.

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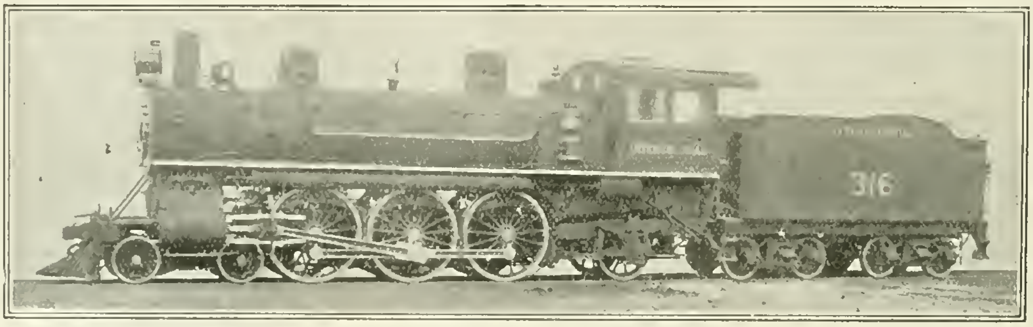

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Canadian Northern Ry. Construction, Etc.

Speaking in the House of Commons, Mar. 10, the Minister of Railways said the C.N.R. would soon have a through line to Montreal and Quebec, and it must get to the seaboard in some way. He might be wrong, but he thought the Intercolonial Ry., if it lost the exchange of traffic with the G.T.R., should be linked up with the C.N.R.

Canadian Northern Quebec Ry.—It is generally thought that the company has definitely decided to abandon the Moreau St. terminal at present in use, and to erect a large terminal in the centre of of Montreal. In a recent interview Sir Donald Mann said all he would say about the matter was that the C.N.R. was going into Montreal.

The Board of Railway Commissioners has authorized the company to carry its tracks by an overhead bridge across Notre Dame St., and the Montreal St. Ry. and to connect its tracks with the Montreal Harbor Commission tracks, on the harbor front. The company will bear the entire cost of this crossing and is to complete it by Aug. 1. The company has also been authorized to rebuild the bridge over the St. Esprit River, near Ste. Julienne station.

Canadian Northern Ontario Ry.—In a recent interview Sir Donald Mann is reported to have stated that the new line from Ottawa to Montreal would be completed this year, but it was not likely that it would be opened for passenger service. The line between Ottawa and Toronto would also be completed this year. The grading was well forward, and the engineers were getting within sight of the finish.

In connection with the building of these two lines the Board of Railway Commissioners has issued a number of orders as to the diversion of roads, crossing of highways, bridges and buildings, and approving location of line through Lanark county, mileage 29 to mileage 37.8. It is expected that the first portion of the Toronto-Ottawa line to be opened will extend from Toronto to Belleville, 120 miles.

The question of the approval of the company's plans for its line across North Toronto came before the Board of Railway Commissioners Feb. 26, and opposition was withdrawn by the C.P.R., whose line will be paralleled. The city authorities favored the C.N.O.R. plans, and the Commissioners decided to go over the route before giving any decision.

After having considered for some time the plans for the company's proposed lines in Hamilton, the city council, Mar. 9, decided not to recede from the position it had assumed that no more level crossings would be allowed. It was stated on Mar. 10 that the company's engineers would be withdrawn at once, and nothing in the way of construction considered for a couple of years. The land agents are reported to be closing out the options on the property acquired, the tenants being notified that possession will not be required for at least two years. The city engineer stated Mar. 10 that he had been informed by H. K. Wicksteed, the company's Chief Engineer of Surveys, that when the plans for the route in the city were filed nothing objectionable would be found in them.

Press reports state that it is expected that construction will be started during the current year on the building of the line between the present end of track, on the line from Toronto, now terminating at Gowganda Jct., and Port Arthur, Ont. It is stated that work will be gone on with from both ends, and that it will be completed within three years. The Board of Railway Commissioners has approved revised locations on this line between mileage 65.9 and 69.5 from Sudbury Jct.; approved location from mileage 240 to 560 from Sudbury Jct., and approved revised locations between mileage 55.78 and 57.16, and between mileage 57.85 and 58.45 in Thunder Bay district.

Press reports Mar. 21 stated that the company proposed building a line of some sort from the line near Gowganda Jct., into the Porcupine country, surveys for which had been completed by the company's engineers. This report is premature, as, while consideration is being given to the proposal to build such a line, nothing has been decided.

Canadian Northern Ry.—We are advised that nothing is likely to be decided for some time with reference to the erection of a hotel at Fort Frances Ont., which press reports stated was to be undertaken immediately. The reports stated that the hotel would be built at Pither's Point, at a cost of $200,000.

Press reports from Cook, Minn., state that engineers are making a survey from the main line of the C.N.R., near that town, to Pine Island, and easterly through the Vermillion range to a junction with the Duluth, Rainy Lake and Winnipeg Ry., and the extension of the same, now under construction, to Duluth.

The Manitoba Legislature passed an act Mar. 16, guaranteeing bonds to the extent of $13,000 a mile for the building of the following lines:—Extension of Dale Point line 50 miles northerly; extension of Deloraine branch westerly to the provincial boundary, 60 miles; a line from Ste. Rose du Lac to Lake Winnipegosis, 50 miles.

Sir Wm. Mackenzie, President C.N.R., stated in an interview in Winnipeg, Mar. 17, that the work proposed to be done during the current year will include additional grading on the Wakopa branch, which will be extended to Deloraine, and in future years will be carried through to a junction with the Maryfield branch, near Bienfait. In Saskatchewan the Maryfield branch will be extended to Moose Jaw; additional grading will be done on the Rossburn branch, which will ultimately be extended to the main line near Canora; additional grading will be done on the Thunderhill branch, which, starting at the Swan River, will ultimately be connected with a line running into Prince Albert; the branch from Prince Albert to Battleford will be completed; additional work will be done on the Battleford-Jackfish Lake line; further progress will be made with the line under construction from Delisle, which is to be continued through Swift Current to a junction with the Maryfield-Lethbridge line. In Alberta, two lines will be completed into Calgary, the one the Goose Lake line, from Saskatchewan, and the other the branch southerly from Vegreville through Red Deer, the line from Stettler crossing the C.P.R. at Red Deer, will be continued towards the Brazeau River Coal fields, and further progress made with the lines westerly from Edmonton. On some of the lines mentioned by the President a considerable mileage of grading is ready for tracklaying, and additional mileage is under contract, and tenders have been received for the grading of a considerable additional mileage, the President stating that it was hoped to build 600 miles of line this year.

Press reports from Winnipeg, Mar. 21, stated that contracts had been let to the Cowan Construction Co. for the building of 200 miles of main line towards the Yellowhead Pass, and 205 miles on three branch lines, and to the Northern Construction Co. for 200 miles of main line, and 100 miles to complete the branch line from Vegreville to Calgary, Alta. We were officially informed by telegraph Mar. 24 that this report was incorrect, as no contracts had been let, nor would any be let for a couple of weeks thereafter.

The Board of Railway Commissioners has approved location of line through tp. 6, ranges 25 and 24, west of the fourth meridian, Alta., mileage 0 to 10.25.

Edmonton and Slave Lake Ry.—A duplicate of the original agreement for the amalgamation of the E. and S.L. Ry. with the Canadian Northern Ry., as sanctioned by the Governor-in-Council, has been filed with the Secretary of State at Ottawa.

The Canadian North Eastern Ry. is the name by which the railway originally started as the Portland Canal Short Line will be known, the British Columbia Legislature having authorized the change of name, and the building of extensions.

We are advised that during the winter the work done has been confined entirely to rock cutting, and this is expected to be completed by the end of April. The grading of the entire line to Bear River should be completed by the end of June. Track was laid last year for a distance of about three miles, and this work will be resumed in May, in the expectation of completing the line by the end of July. The work still remaining to be done includes about 1.75 miles of grading, 450 lineal feet of pile bridging, and 10.25 miles of tracklaying, together with the erection of the following buildings:—Freight shed and coal handling plant on the wharf at Stewart; small freight sheds at Glacier Creek, Bitter Creek and Red Cliff; turntables at Stewart and Red Cliff, a machine shop storehouse at Stewart. It is also intended to build spurs and track accommodation for the Red Cliff and Portland Canal Mines this year. (Mar., pg. 249.)

Canadian Northern Pacific Ry.—F. C. Gamble, Inspecting Engineer for the British Columbia Government, returned to Victoria, Mar. 11, from an inspection trip over the section of the line under construction from Port Mann to Sumas. It is reported that about 75% of the grading on the first 55 miles to Popkum, about 10 miles east of Chiliwack, has been completed, and that considerable grading has been done on the remaining distance to Hope Mountain, to which point the clearing had been completed. About seven miles east of Popkum there is a big rock cut, of about 50,000 cubic yards. It is expected that this section will be completed and in operation by the end of the year.

At Port Mann, the wharf has been completed, and the first steamer with steel rails for the new line arrived and landed its cargo Mar. 7. The townsite is being laid out on an extensive scale, under the direction of T. Darling, Manager C.N.R. Townsites.

Press reports state that an arrangement has been effected between the company's representatives and the Vancouver, Victoria and Eastern Ry., under which the Canadian Northern Pacific Ry. will build the line between Sumas and Hope, the V.V. and E. Ry. being given running rights over it.

C. F. Harrington, is in charge of an engineering party making a survey for the line from Spence's Bridge in the direction of Ashcroft, from which place a party under J. Handy, is working towards Spence's Bridge.

The company's plans for the entry into Kamloops are being prepared, and will shortly be submitted to the civic authorities, according to a report made to the council Mar. 7, by Mayor Robinson, after an interview with T. G. Holt, the company's executive agent in Vancouver.

Vancouver Island.—The contract let to Grant, Smith & Co., for the first portion of the C. N. Pacific Ry., on Vancouver Island, covers 40 miles, extending from 4.7 miles from Victoria to the

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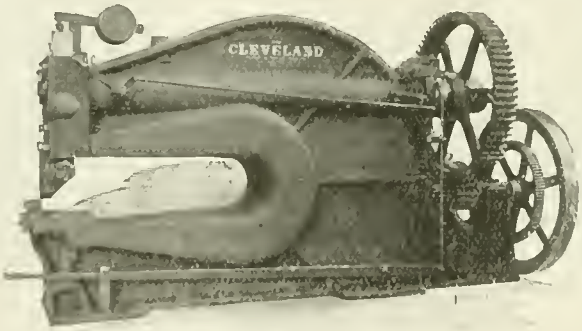

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vicinity of Shawinigan Lake, at mileage 44.7 The contract includes clearing, grubbing, fencing, trestle, concrete work and grading. The work on the first 20 miles has already been sublet in sections of from one to four miles and a good part of the second 20 miles has also been sublet. Clearing has been commenced at several points, and excavation on two or three of the heavier cuts are under way. It is expected that the balance of the first hundred miles will also be put under contract as soon as the weather will permit of the completion of the location surveys. Construction was officially started Feb. 20, when the Lieut.-Governor of the Province, accompanied by the company's engineers, contractors' representatives and representatives of the Government went to Portage Inlet, and the Lieut.-Governor cut the first sod. D. O. Lewis is in charge of the work as construction engineer, with headquarters at Victoria, and G. B. Hughes, is assistant engineer in charge of surveys. Mr. Hughes was at Port Alberni, Mar. 10, arranging for placing a survey party in the field along Alberni Canal.

Duluth, Winnipeg and Pacific Ry.—We are advised that the grading and bridging on the extension of the Duluth, Rainy Lake and Winnipeg Ry., being built under this title, from Virginia to Duluth, Minn., is about 80% completed, and that track has been laid for 24.5 miles southerly from Virginia. The tunnel at Short Line Park is progressing favorably, but the rock is very hard, and progress has been somewhat slower than was hoped for. It is expected to have the line completed by Sept. Nothing has been done as yet in regard to ore docks at Duluth.

G. H. Shaw, General Traffic Manager, and other C.N.R. officers were in Duluth, Mar. 15, when the question of terminals was discussed, but no definite plans for the same were announced. (Mar., pg. 231.)

Alberta Railway and Irrigation Co. Ltd.

At the special meeting of shareholders in London, Eng., Feb. 22, to authorize the sale, conveyance, or lease of the company's property to the C.P.R., to which reference was made in our last issue, the proposal was described, at the request of the President, E. T. Galt, by the company's Solicitor, C. Bischoff. He pointed out that for the purpose of convenience, the agreement was divided into two parts. 1. for the long lease of the railway itself in consideration for a rental; 2. for a contemporaneous sale of the assets, other than the railway and that the combined effect of the lease and sale, for all practical purposes, was, that the shareholders would be parting with the whole of the assets, in exchange for an annuity.

The lease is to comprise all the company's existing lines, and any lines which it may be authorized to build, together with stations, shops, rolling stock and equipment, and it will be for 999 years, from Jan. 1, 1912, without prejudice to the rights of the debenture holders under the trust deed. The lessor is restrained from issuing, without the lessee's consent, any new stock, as an encumbrance on the leased properties, but with the consent, and at the request of the lessee, will make future issues of capital for purposes of the leased property up to the legal limits. The lessee binds itself to pay an annual rent equal to a dividend of 6% on the outstanding ordinary capital stock, viz:—$3,250,000, by half-yearly payments, on Jan. 1, and July 1, in each year, the first payment to be made July 1, 1912, direct to the ordinary stock holders, and by way of additional rent will pay enough to cover the interest on any new debenture stock it may require to be issued in future. The interest guarantee will be endorsed on the certificates, or otherwise properly evidenced. If any rent is in default 90 days, or the lessee fails to meet the obligations it undertakes, the lesor may resume possession. The second part of the agreement relating to the sale of all lands, irrigation works and generally all the assets of the lessor, except the property leased, provides that the sale is subject to the rights of the debenture holders and a sufficient sum will be reserved out of the sale, to provide the debenture interest due Jan. 1, 1912, and an ordinary dividend for the half year ending Dec. 31, 1911, at the rate of 5% per annum.

The President then explained that the C.P.R. holds 13,750 shares, or about 57% of the total shares of the company and he also outlined the reasons which had led the directors to adopt the course of submitting the resolution to the shareholders. The view held by the directors was that to meet the requirements of the company's business the lines would have to be improved in the near future, by laying heavier rails, ballasting the roadbed, etc., extensions would have to be undertaken to cover the territory tributary to the company's business, and the irrigation system would have to be extended at heavy cost to meet the requirements of the increasing population. Under these heads, several million dollars would have to be spent and it was considered injudicious to absorb the liquid assets of the company is undertaking these expenditures. He also stated that he was authorized to announce that the C.P.R. will purchase any shares at $150 each, plus an allowance of $3 a share for dividend since July 1, provided the holders of 8,000 shares notify the Secretary that they accept this option, which will remain open to May 1.

A. M. Nanton, Managing Director, in response to questions, stated that the company's lands had almost all been disposed of, and that future dividends would have to be largely derived from its ordinary business. The remaining assets consist mainly of the cash in hand, and the balances due to the company, which would, within a few thousand dollars, pay off the present indebtedness. The only remaining assets that can be used in conection with the common stock are, the balance of the lands, the railway, the colliery and the canal. The irrigable lands on hand, consist of from 25,000 to 30,000 acres, which, with the remaining non-irrigable lands, cannot be valued at more than $2,000,000, and only at that after a considerable expenditure for enlarging and extending the canal works. The railway consists of a line of about 120 miles long running from Lethbridge, Alta., to points of no great importance, and there is no doubt that with the business that is being done, the railway must be extended. The colliery is a paying concern, but growing competition may possibly reduce the future profits from this source. The canal cannot be considered as a cash asset, and altogether, the remaining assets do not aggregate more than about $200,000 of the $5,000,000, which is practically the offer made.

There was a certain amount of opposition to the resolution, which in view of the explanations made, was subsequently withdrawn, and the resolution was carried unanimously. The President undertook to request that the C.P.R. reduce the minimum number of shares which it had stipulated was necessary to have offered before it would pay cash for them.

The C.P.R. has, according to press reports, granted increases of 10% in wages to the trainmen on its Western lines, dating from Mar. 1, and it is said that an agreement on these lines has been signed by representatives of both sides.

Great Northern Ry. Lines in Canada.

Manitoba Great Northern Ry.—At a meeting of the Winnipeg city council held Mar. 15, an amended agreement with the company providing for its entry into the city was approved. The new plans provide that the line will come into the city on the level as far as Vera St., where a subway is to be built when ordered by the Board of Railway Commissioners on the request of the city; on to Isabella St., where there will be a subway; on to Ellen St., which is to be closed between Ross and Pacific streets, except that provision must be made for a footbridge; and that the company will build a station facing Paulin St. The plan shows a passenger station facing Paulin St., with the mail, baggage and express buildings along Ross Ave., to Ellen St., with four sets of double tracks and one set of single tracks, between which are to be covered platforms. Along Ross Ave., from Ellen to Isabel streets store buildings are shown. The area bounded by Isabel and Vera streets, and Ross and Pacific Avenues to be given over to freight tracks, with a freight house 1,000 ft. in length along Ross Ave., and 50 ft. deep to the tracks.

Considerable improvements are, it is said, to be made this year on the roadbed of the line from the International boundary near Gretna to Portage la Prairie, as well as on the connecting line south of the boundary to Neche and Grand Forks, N.D.

Vancouver, Victoria and Eastern Ry.—Grading had been completed westerly from Princeton, for 16 miles to Tulameen, B.C., when operations were suspended at the beginning of the winter. It is expected that start will be made with the grading early in April, and that about a month later tracklaying will be resumed. The route from Tulameen westerly will touch the coal fields being developed by the Columbia Coal and Coke Co., Coalmount. Nothing has been announced as to the route over the Hope Mountains, but local reports state that an arrangement is being made by which the company will have running rights over a section of the Canadian Northern Pacific Ry., line west of the Hope Mountains.

Grading is being pushed forward on the section of the line from Abbotsford to Sumas River, which is reported to be over 60% completed, and is expected to be finished in a couple of months.

The British Columbia Legislature has passed the necessary acts to enable the city of Vancouver to acquire certain lands and interests in certain lands at False Creek, and to make improvements on the same. These lands are being acquired in connection with the reclamation of False Creek, under agreements with the V., V. and E. Ry. Co., as ratified and confirmed by the Great Northern Ry., and now finally confirmed by the B.C. Legislature. Following on the confirmation of these agreements, work was started at the head of the creek, Mar. 13. Two steam shovels and a pile driver, are being operated, and a large sized gang of men are at work. The Board of Railway Commissioners has authorized the company to take certain lands in Vancouver, being the whole bed and foreshore of False Creek, east of Westminster Ave., with the exception of a portion reserved by the city.

Tenders are under consideration for the removal of the buildings on Pinder St., Vancouver, on the site of which an extension to the company's freight sheds is to be built. (Mar., pg. 219.)

The Niagara, St. Catharines and Toronto Railway and Navigation Co., has been admitted to membership in the Eastern Canadian Passenger Association.

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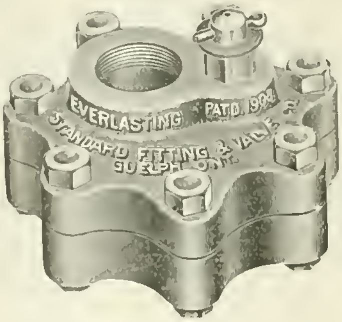

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Railway Rolling Stock Notes.

The Brompton Paper and Pulp Co. has received one Columbia locomotive from the Montreal Locomotive Works, details of which were given in our last issue.

The Toronto, Hamilton and Buffalo Ry. has received one ten wheeled locomotive from the Montreal Locomotive Works, details of which we gave in a previous issue.

The Temiskaming and Northern Ontario Ry. has received from the Canadian Locomotive Co., Kingston, Ont., four Pacific type locomotives, Nos. 133 to 136, details of which we gave in our Sept., 1910, issue.

The Canadian Northern Ry. has ordered 200 steel underframe flat cars, similar in design to those being built for the C.P.R., details of which are given in this issue, from the Canadian Car and Foundry Co., Montreal.

The Algoma Central and Hudson Bay Ry. has ordered 175 steel underframe flat cars from the Canadian Car and Foundry Co., Montreal, to practically the same specifications as those being built for the C.P.R., details of which are given in this issue.

The Canadian Northern Ry., between Feb. 15 and Mar. 15, received the following additions to rolling stock:—315 box cars and five baggage cars, from the Canadian Car and Foundry Co., Montreal, and 65 box cars from the Crossen Car Manufacturing Co., Cobourg, Ont.

The C.P.R., between Feb. 13 and Mar. 15, received the following additions to rolling stock:—23 first class cars, 24 automobile cars, two horse cars, one flanger and two snow plows from its Angus shops, Montreal, and seven G.1 and G.2 locomotives from the Montreal Locomotive Works.

The Laprairie Brick Co. has ordered one four-wheeled locomotive from the Montreal Locomotive Works, of which the following are the chief details:

Weight in working order	39,000 lbs.
Wheel base	4 ft. 9 in.
Driving wheel, diar.	33 in.
Cylinders	11 by 16 in.
Boiler, type	Straight top
Boiler pressure	165 lbs.
Tubes, no. and diar.	85 2 in.
Tubes, length	8 ft. 3½ in.
Tank capacity	750 U.S. gals.

The Intercolonial Ry. has ordered four shunting locomotives and three passenger locomotives from the Canadian Locomotive Co., Kingston, Ont.; 70 standard box cars, 60,000 lbs. capacity, and 21 Hart-Otis steel dump cars from the Canadian Car and Foundry Co., Montreal, and a further 30 standard box cars of 60,000 lbs. capacity. It has received one first class coach from the Preston Car and Coach Co., Preston, Ont.

The C.P.R., between Feb. 13 and Mar. 15, ordered the following rolling stock:—two G.1 locomotives, six compartment sleeping cars, one steel passenger car, one stores supply car, one freight refrigerator car, 82 box cars, 505 stock cars, five flat cars, two vans, one ballast car, at its Angus shops, Montreal; two steel flat cars from the Canadian Car and Foundry Co., Montreal; two Lidgerwood unloaders from Allis-Chalmers-Bullock, Ltd., two steam shovels from Montreal Locomotive Works, and two wrecking cranes in the U.S.

The Victoria Harbor Lumber Co. has ordered one four wheeled locomotive from the Montreal Locomotive Co., of which the following are the chief details:

Weight in working order	56,000 lbs.
Wheel base	6 ft. 3 in.
Driving wheel, diar.	36 in.
Cylinders	13 by 18 in.
Boiler, type	Straight top
Boiler pressure	165 lbs.
Tubes, no. and diar.	100 2 in.
Tubes, length	10 ft.
Tank capacity	1,000 U.S. gals.

Following are the chief dimensions of one Columbia locomotive (2-4-2-T-80), which the C.P.R. has ordered from the Montreal Locomotive Works:

Weight in working order	80,000 lbs.
Weight on engine truck	9,000 lbs.
Weight on drivers	58,000 lbs.
Weight on trailer	13,000 lbs.
Wheel base, driving	7 ft. 0 in.
Wheel base, engine	22 ft. 6 in.
Driving wheel, diar.	44 in.
Cylinders	14 by 22 in.
Boiler, type	Straight top
Boiler pressure	165 lbs.
Tubes, no. and diar.	106 2 in.
Tubes, length	11 ft. 8 in.
Tank capacity	1,200 U.S. gals.

The Nova Scotia Steel and Coal Co. has ordered one six coupled switching locomotive from the Montreal Locomotive Works, of which the following are the chief details:

Weight in working order	124,000 lbs.
Weight of tender	67,000 lbs.
Wheel base, engine	11 ft. 6 in.
Wheel base, engine and tender	38 ft. 6 in.
Driving wheel, diar.	59 in.
Cylinders	19 by 26 in.
Boiler, type	Straight top
Boiler, pressure	180 lbs.
Tubes, no. and diar.	259 2 in.
Tubes, length	11 ft.
Tank capacity	3,000 U.S. gals.

Macdonnell and O'Brien, railway contractors, National Transcontinental Ry., La Tuque, Que., have ordered two mogul locomotives from the Montreal Locomotive Works, of which the following are the chief details:

Weight in working order	130,000 lbs.
Weight on engine truck	17,000 lbs.
Weight on drivers	113,000 lbs.
Weight of tender	115,000 lbs.
Wheel base, driving	12 ft. 6 in.
Wheel base, engine	20 ft. 6½ in.
Wheel base, engine and tender	49 ft. 4 in.
Driving wheel, diar.	50 in.
Cylinders	19 by 26 in.
Boiler, type	Extended wagon top
Boiler pressure	180 lbs.
Tubes no. and diar.	275 2 in.
Tubes, length	10 ft. 5¼ in.
Tank capacity	5,000 Imp. gals.

Following are the chief details of the 11 D. 10 locomotives, which the C.P.R. is building at its Angus shops, Montreal, as mentioned in previous issues:

Weight on drivers	142,000 lbs.
Weight, total	193,000 lbs.
Cylinder	21 in. by 28 in.
Valves	11 in. piston
Boiler, type	Extended wagon top
Boiler, pressure	200 lbs.
Heating surface, tubes	2,238 sq. ft.
Heating surface, firebox	180 sq. ft.
Heating surface, total	2,418 sq. ft.
Heating surface, superheater	409 sq. ft.
Equivalent heating surface	3,032 sq. ft.
Tubes, no. and diar.	240 2 in., 24 5 in.
Tubes, length	14 ft. 2⅞ in.
Firebox	8 ft. 6⅛ in. by 5 ft. 9⅛ in.
Grate area	49 sq. ft.
Capacity water	5,000 gals.
Capacity coal	10 tons
Axles. Main 9½ in. by 12 in., others 9 in. by 12 in	
Brakes	Westinghouse ET6
Headlight	Pyle National Electric
Valve gear	Walschaert
Superheater	Vaughan-Horsey

The 750 steel underframe flat cars, which the C.P.R. has ordered from the Canadian Car and Foundry Co. are practically of the standard design, using the deep fish belly girder sills at the centre, with 10 in. rolled steel channels for the side sills. There is, however, one detail which is somewhat different from the general run of similar cars, in that, for the intermediate floor stringer, a 3 in. rolled steel Z bar is being used, to which the floor is bolted at certain intervals. In previous cars this member was usually composed of timber, to which the floor was nailed. Following are general details:—

Length over deadwoods	42 ft. 2 in.
Length, centre to centre of trucks	31 ft. 2 in.
Width over side sills	8 ft. 10 in.
Width over floor	9 ft.
Height top of rail to top of flooring	4 ft. 2¾ in.
Flooring	2⅜ in., ship-lapped
Couplers	Simplex
Bolsters	Simplex, C.P.R. standard for 40-ton cars
Brake beams	Simplex, 6 in. I beams, inside hung
Side bearings	Susemihl frictionless
Air brakes	Westinghouse K.C. 812
Wheels, cast iron	C.P.R. Standard
Journal boxes	McCord M.I.
Journal bearings	Canadian Bronze Co.
Axles	Open hearth steel, 5 by 9 ins.

The Algoma Central and Hudson Bay Ry. has ordered five consolidation and five 10-wheeled passenger locomotives from the Canadian Locomotive Co., Kingston, Ont. Following are the chief details:—

	Consolidation.	Ten-wheeled
Weight on drivers	175,000 lbs.	141,000 lbs.
Weight, total	197,000 lbs.	190,000 lbs.
Wheel base, engine, rigid	15 ft. 10 in.	14 ft. 10 in.
Wheel base, engine, total	24 ft. 4½ in.	26 ft. 1 in.
Wheel base, engine and tender	55 ft. 3½ in.	54 ft. 10¼ in.
Heating surface, firebox	161 sq. ft.	180 sq. ft.
Heating surface, tubes	2,218 sq. ft.	2,233 sq. ft.
Heating surface, total	2,379 sq. ft.	2,413 sq. ft.
Driving wheel, diar.	56 in.	63 in.
Driving wheel, centres	Steel and iron	Cast steel
Driving journals— Main, 9½ in. by 12 in., others 9 in. by 12 in.		
Cylinders	22 in. by 28 in.	22½ in. by 28 in.
Boiler, type	Extended wagon top, wide firebox	
Boiler pressure	200 lbs.	180 lbs.
Tubes, no. and diar.	224 in., 24 5 in.	240 2 in., 24 5 in.
Tubes, length	14 ft. 2½ in.	14 ft. 4 in.
Brakes	Westinghouse American	
Weight tender, loaded	175,000 lbs.	127,000 lbs.
Capacity, water	5,000 gals.	5,000 gals.
Capacity, coal	10 tons	10 tons
Truck, type	4-wheeled with outside equalizer	
Wheel, diar.	34 in.	34 in.
Wheel, type	Steel tires and retaining rings	
Journals	5½ in. by 10 in.	5½ in. by 10 in.
Brake beam	Simplex high speed	

Following are the chief details of the cabooses and Pintsch gas car, when the Intercolonial Ry. is building at its Moncton, N.B., shops, as mentioned in our last issue:—

Six Cabooses.

Length over platform sills	35 ft. 6 in.
Length over nailing strips on end sills	30 ft. 0 in.
Width over nailing strips on side sills	9 ft.
Height, top of nailing strips to under side of plates	6 ft. 8 in.
Length inside	29 ft. 6⅛ in.
Width inside	8 ft. 6⅛ in.
Height inside, top of floor to under side of carlin	7 ft. 1¼ in.
Outside of end sill to centre of body bolster	5 ft.
Centre to centre of cross frame braces	6 ft. 4 in.
Height top of rail to centre of drawbar	2 ft. 10½ in.
Wheel base of truck	5 ft.
Door opening, side	2 ft. 10 in.
Door opening, end	2 ft. 3 in.
Distance between truck centres	20 ft.
Platforms, steel	Standard Coupler Co.
Brake equipment	Canadian Westinghouse Co.
Brake beams, simplex	Canadian Car & Foundry Co.
Journal boxes, McCord	The Holden Co., Ltd.
Couplers, Janney	Canadian Car & Foundry Co.

One Pintsch Gas Car.

Length over end sills	40 ft.
Width over side sills	9 ft.
Length over floor	40 ft. 1½ in.
Width over floor	10 ft. 2 in.
Outside of end sill to centre of body bolster	5 ft.
Centre to centre of cross frame tie timbers	9 ft.
Height, top of rail to centre of drawbar	2 ft. 10½ in.
Wheel base of truck	5 ft. 6 in.
Distance between truck centres	30 ft.
Length of gas tank	35 ft. 9¾ in.
Diar. of tank, outside	8 ft. 2 in.
Capacity of tank	1,724 cu. ft.
Body and truck bolster	Simplex, Canadian Car & Foundry Co.
Brake beams, Simplex	Canadian Car & Foun. Co.
Couplers, Janney	Canadian Car & Foundry Co.

◆

Railway Lands Patented. — Letters patent were issued during Jan. in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Canadian Northern Ry.	252.57
Canadian Pacific Ry. grants	1.32
Canadian Pacific Ry. Souris Branch	673.80
Grand Trunk Pacific Ry.	457.26
Total	1,384.95

The Board of Railway Commissioners will take up at Ottawa on April 4 the question of limiting the height of freight cars and an opportunity will be given railway companies under its jurisdiction to discuss the subject fully.

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MAINLY ABOUT PEOPLE.

P. Whelen, director Ottawa Electric Ry., died at Ottawa, Mar. 17, after several weeks illness.

Sir Wm. C. VanHorne, sailed from Halifax, N.S., on the s.s. Empress of Ireland, for a business trip to Great Britain.

E. H. Fitzhugh, First Vice President G.T.R., was expected to return to Canada, at the end of March, from a trip in the Mediterranean.

T. Henry, Traffic Manager, Richelieu and Ontario Navigation Co., left Montreal, Mar. 12, on a business trip through the U.S.

D. B. Hanna, Third Vice President Canadian Northern Ry., has removed to his new house, 36 Castle Frank Road, Toronto, which he has named Thornliebank, after his native place in Scotland.

Capt. G. E. Royce, Manager Toronto Suburban Ry., has been appointed Major Second Battalion Queen's Own Rifles, Toronto.

Mrs. George Hannah, wife of the Passenger Traffic Manager Allan Line, Montreal, died there, Mar. 12, after a long illness.

W. I. Gear, Vice President Robert Reford Co., Ltd., and Miss Gear, returned to Montreal Mar. 18, after a holiday of some weeks in Europe.

The wife of Arthur Hall, Superintendent Western Railway Association and Inspection Bureau, formerly of Toronto, died at Denver, Col., recently.

Hugh A. Allan, of the Allan Line, who has been seriously unwell for some time, was recruiting at Bournemouth, Eng., during March.

R. G. McNeillie, District Passenger Agent, C.P.R., Calgary, Alta., returned there, early in March, from California, after a three weeks holiday.

W. H. C. Mussen, of Mussens Limited, and Mrs. Mussen, are spending a few weeks in England, and will return to Montreal shortly after Easter.

W. T. Payne, Manager C.P.R. Trans-Pacific Steamship Service, Yokohama, Japan, arrived in Montreal, Mar. 9, on business connected with his department.

A. A. Allan, of the Allan Line, and President Shipping Federation of Canada, with Mrs. Allan, sailed on the s.s. Virginian, Mar. 8, for Great Britain.

Miss F. H. Macdonald, eldest daughter of C. A. Macdonald, Assistant Manager Northern Navigation Co., was married at Collingwood, Feb. 28, to H. Stalker.

Lady Mann and her son left Toronto March 5 for sailing from Halifax on the s.s. Royal George for Bristol. Eng. They will probably be away most of the summer.

R. Marpole, General Executive Assistant C.P.R., Vancouver, B.C., and Mrs. Marpole, returned to Canada early in March, after a holiday trip in Great Britain.

J. B. McDonald, a well known railway contractor, who died in New York, Mar. 17, aged 67, was a contractor on the construction of the Georgian Bay section of the C.P.R.

Mrs. Hugh Sutherland, wife of the Executive Agent, Canadian Northern Ry. left Winnipeg at the end of February, to spend some little time at Seabreeze, Florida.

The marriage of Miss Isobel Creelman, daughter of A.R. Creelman, K.C., director and General Counsel C.P.R., to H. S. Ambrose, of the Bank of Montreal, took place at Montreal, Mar. 22.

W. B. Lanigan, Assistant Freight Traffic Manager C.P.R. Western Lines, Winnipeg, returned there, about the middle of March, from California, where he had been spending a short holiday.

A recent issue of Mayfair, a London, Eng., magazine, contained a full page portrait with biographical sketch of H. A. Allan, Chairman of the Allan Line, and formerly President of the Shipping Federation of Canada.

Sir Thos. G. Shaughnessy left Montreal, Mar. 6, for New York, whence he sailed on the s.s. Celtic, for a holiday in the Mediterranean. He will subsequently visit England, and is expected to return to Canada about the end of April.

J. G. Sullivan, Assistant Chief Engineer C.P.R. Western Lines, left Winnipeg, Mar. 11, on an inspection trip over the lines to the Pacific coast, to look over the ground in connection with the work that is to be undertaken this year.

Mrs. G. Mc. L. Brown, wife of the European Manager of the C.P.R., who has been staying in Hamilton, Ont., for some time, left for England early in March, with her sister, Miss Crerar.

H. J. Wicksteed, B.Sc., M. Can. Soc. C.E., Chief Engineer of Survey for Mackenzie, Mann & Co., returned to Toronto March 13, after a fortnight's ocean trip from New York to Palm Beach, Fla., and intermediate points.

H. R. Mathewson, excursion clerk C.P.R. District Passengers Agent's office Toronto, was presented with a suit case by the staff there Mar. 16, on his leaving for Chicago, Ill., on his appointment as chief clerk to the General Agent C.P.R., there.

J. S. Dennis, Manager Irrigation Department, Alberta and British Columbia Land Departments C.P.R., was entertained to dinner by the staff of his department at Calgary, Alta., recently, on his return from a European trip extending over two months.

L. Sherwood, M. Can. Soc. C.E., Principal Assistant Engineer Trent Canal Construction, Peterboro, was recently announced as the successful candidate for the position of Principal Assistant Engineer Subdivision A of the Department of Railways and Canals.

Sir William Mackenzie arrived at Halifax, N.S., Mar. 4, on his return from England, and was entertained to dinner by the city. On Mar. 8 he left Toronto for Winnipeg, accompanied by a number of officials, and returned to Toronto a week later.

Howard S. Folger, of Kingston, Ont., who sold out his interests in and retired from the management of the St. Lawrence River Steamboat Co., and the Thousand Islands Steamboat Co., recently, is reported to have sold his yacht Caprice, to A. E. Knopf of New York.

Count Jacques de Lesseps, who recently married Miss Grace Mackenzie, daughter of Sir Wm. Mackenzie, President Canadian Northern Ry., has been awarded the $10,000 prize in connection with the recent aviation meet at New York, two other competitors being disqualified.

In announcing the resignation of G. W. Vaux, General Passenger Agent, G.T.R., in our last issue, it was stated that it was owing to ill health. We have been advised that he resigned for purely personal reasons, that he is in very good health and that he is immediately available should his services be required.

W. W. Butler Vice President Canadian Car and Foundry Co., entertained some 70 friends at dinner at the Windsor Hotel, Montreal, March 17. Among the speakers were Hon. G. P. Graham, Minister of Railways and Canals; T. Drummond, President Lake Superior Corporation, and D. B. Hanna, Third Vice President Canadian Northern Ry.

Unconfirmed press reports say that Count de Lesseps, who married one of Sir William Mackenzie's daughters recently, will settle in Canada and join R. J. Mackenzie in Winnipeg in connection with Canadian Northern Ry. work. The Count and Countess are spending their honeymoon in Egypt, where Lady Macenzie and her other daughter are also at present.

J. D. McDonald, formrely District Passenger Agent G.T.R. Toronto, was entertained to dinner at the Albany Club, Toronto, Mar. 17, by a number of transportation officials and others, and was presented with an engraved gold watch and address, and a travelling bag for Mrs. McDonald, on his leaving for Chicago, Ill., where he has been appointed Assistant General Passenger Agent G.T.R.

Sir Wm. Mackenzie, who arrived at Halifax, N.S., on March 4 on the s.s. Royal George, from Bristol, Eng., was entertained at dinner that evening at the Halifax Hotel by the Board of Trade and other citizens. Among the speakers were the Mayor, who presided, Sir Wm. Mackenzie, D. B. Hanna, Third Vice President C.N.R., and G. Shaw, General Traffic Manager C.N.R.

H. M. Tait, who has been appointed General Agent Passenger Department Atlantic Service, at Minneapolis, Minn., is a son of Sir Melbourne Tait, Chief Justice of the Quebec Superior Court, and a brother of Sir Thomas Tait, who recently resigned the chairmanship of the Victorian Railway Commission, Australia, and who was formerly Master of Transportation C.P.R.

J. D. McDonald, whose appointment as Assistant General Passenger Agent G.T.R., Chicago, Ill., was announced in our last issue, was born at Toronto Aug. 27, 1855, and entered G.T.R. service in 1868, since when he has been, to 1870, messenger at Toronto; 1870 to 1875, assistant ticket agent, Toronto; 1875 to 1896, ticket agent at Buffalo, N.Y.; 1896 to May, 1902, City Passenger and Ticket Agent, Buffalo, N.Y.; May 1902 to Mar. 1, 1911, District Passenger Agent, Toronto.

Osborne Scott, whose appointment as Assistant General Passenger Agent Canadian Northern Ry., Winnipeg, was announced in our last issue, was born at St. Andrews, Man., July 6, 1882, and entered C.N.R. service June, 1901, since when he has been, to Feb., 1903, in Audit Office Passenger Department; Feb., 1903, to Feb., 1910, in Traffic Department, in charge of baggage, ticket, stock and advertising; Feb. to Oct., 1910, Travelling Passenger Agent, Toronto; Oct., 1910, to Mar. 1, 1911, chief rate clerk Passenger Department, Winnipeg.

Sir Thomas and Lady Tait and Miss Tait are proceeding leisurely on their trip from Australia to Canada. Leaving Melbourne on November 30, they spent a week in Ceylon, a month in India and a fortnight in Egypt, and then went to St. Moritz, Switzerland, for a few weeks of cold weather and winter sports. From there they intended to go to the Riviera, thence to Paris, and about the middle of May to London, where they will remain until after the coronation, and then sail for Canada, which they expect to reach about the middle of July.

G. W. Vaux, whose resignation from the position of General Passenger Agent G.T.R., we announced in our last issue, was born at Montreal, Mar. 21, 1866, and entered G.T.R. service, July 13, 1881, since when he has been, to June 13, 1885 office boy General Passenger Department, Montreal; June 13 1885 to Feb. 1, 1897, clerk same department, Montreal; Feb. 1, 1897, to Aug. 1, 1889. chief clerk, same department, Montreal; Aug. 1, 1899, to May 1, 1900, Assistant General Passenger and Ticket Agent, Montreal; May 1, 1900 to May 1, 1909, Assistant General Passenger and Ticket Agent, Chicago, Ill.; May 1, 1909 to Mar. 1, 1911, General Passenger Agent, Montreal.

A. S. Dawson, who has been appointed Chief Engineer C.P.R. Irrigation Department, Calgary, Alta., was born at Pictou, N.S., Sept. 6, 1871. He graduated B.A. Sc. from McGill University, Montreal, in 1893, and from 1894 to 1898 was engaged in hydraulic engineering in the U.S.;

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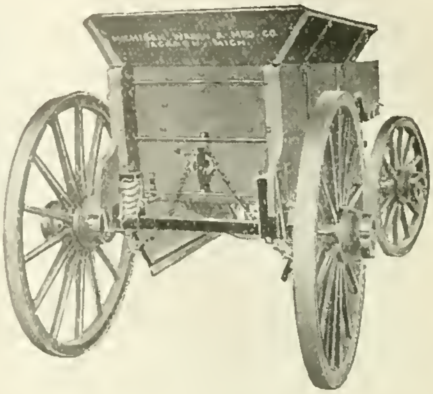

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INTERCOLONIAL

1898 to 1903, engineering work on C.P.R. Western Lines; 1903 to 1911, engineering work C.P.R. Irrigation Department, Calgary; in Jan. 1908, he was appointed Assistant Chief Engineer of the Department, which position he held to Jan. 1911, when he was appointed Chief Engineer. He became a student of the Canadian Society of Civil Engineers in 1889, associate member in 1895, and member in 1909.

A. E. Duff, whose appointment as District Passenger Agent, G.T.R., Toronto, we announced in our last issue, was born at Sherbrooke, Que., May 1, 1872, and entered G.T.R. service in 1887, since when his record has been: Winter, 1887, shovelling snow on section at Danby, Que.; summer of 1888, water boy on train between Richmond and Montreal, Que.; Feb. 1889, to Aug. 1889, switchman at St. Bruno, Que.; Aug. 1889 to April 1890, switchman, St. Isidore Jct. Que.; April, 1890, to Aug. 1890, night telegraph operator, Upton, Que.; Aug. 1890, to Aug. 1892, night telegraph operator, Actonville, Que.; Aug. 1892, to May, 1895, night telegraph operator, South Durham, Que.; June, 1895, to Mar., 1898, agent, Belœil, Que.; Mar. 1898, to Oct., 1901, agent, North Stratford, N.H.; Oct., 1901, to Aug., 1904, agent, St. Lambert, Que.; Aug., 1904, to Jan. 1907, Travelling Passenger Agent, Montreal; Jan. 1907 to Sept. 1908, General Agent Passenger Department, Winnipeg, all in G.T.R. service; and Sept. 1908 to Mar. 1, 1911, General Agent Passenger Department and also District Passenger Agent G.T.P.R. lines west of Lake Superior, Winnipeg.

TRANSPORTATION APPOINTMENTS.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Algoma Central and Hudson Bay Ry., Manitoulin and North Shore Ry.—G. A. Montgomery, heretofore Superintendend Michipicoten Division, A.C. & H.B.R. Michipicoten Harbor, has been appointed Superintendent A.C. & H.B. and M. & N.S. Rys, performing all duties heretofore handled by the General Superintendent and Traffic Manager, excepting construction. Office, Sault Ste. Marie, Ont. The office of General Superintendent and Traffic Manager, heretofore held by T. J. Kennedy, who resigned to become President of the Superior Construction Co., has been abolished.

H. J. Herrold, has been appointed General Agent in charge of all matters pertaining to freight and passenger traffic. Office, Sault Ste. Marie, Ont.

Canadian Northern Ontario Ry.—C. Price Green, heretofore Passenger Agent, Toronto, has been appointed District Passenger Agent. Office, Toronto.

Canadian Northern Pacific Ry.—D. O. Lewis, of Mackenzie, Mann & Co.'s staff, who has been acting engineer on the construction of the Portland Canal Short Line Ry., with headquarters at Stewart, B.C., has been appointed Division Engineer of C.N.P.D. lines on Vancouver Island. Office, Victoria, B.C.

G. B. Hughes, District Engineer, continues in charge of surveys on Vancouver Island.

W. Tuxford, heretofore Secretary to Third Vice President C.N.R., Toronto, has been appointed chief clerk to Division Engineer of C.N.P.D. lines on Vancouver Island, Victoria, B.C.

Canadian Northern Ry.—C. Price Green, heretofore Passenger Agent, Toronto, has been appointed District Passenger Agent. Office, Toronto.

J. C. O'Donnell, heretofore Trainmaster at Dauphin, Man., has been appointed Trainmaster at Winnipeg, vice M. B. Murphy, transferred to Duluth, Rainy Lake and Winnipeg Ry. service.

G. W. Chapman, heretofore conductor District 4, west of Kamsack, has been appointed Trainmaster at Dauphin, Man., vice J.C. O'Donnell, transferred.

Canadian Northern Steamships Ltd.—W. A. Mason, heretofore Soliciting Passenger Agent G.T.R., Toronto, has been appointed City Ticket Agent C.N.S. Ltd., Toronto.

Canadian Pacific Ry.—V. A. Harshaw, heretofore Superintendent District 1, Ontario Division, Toronto, has been appointed Superintendent District 2, Atlantic Division, vice R. King, transferred. Office, Woodstock, N.B.

J. K. McNeillie, heretofore Superintendent District 2, Ontario Division, London, has been appointed Superintendent District 1, Eastern Division, vice A. L. Smith, transferred. Office, Farnham, Que.

J. H. Sheldon, acting Trainmaster District 1, Eastern Division, Farnham, Que., has resumed his former position as conductor on that district.

A. L. Smith, heretofore Superintendent District 1, Eastern Division, Farnham, Que., has been appointed Superintendent District 3, Eastern Division, vice G. Hodge, transferred. Office, Montreal.

R. King, heretofore Superintendent District 2, Atlantic Division, Woodstock, N.B., has been appointed Superintendent District 1, Ontario Division, vice V. A. Harshaw, transferred. Office, Toronto.

E. Davis, heretofore rate clerk, has been appointed chief excursion clerk, District Passenger Agent's office, Toronto., vice H. R. Mathewson, transferred to Chicago.

A. McMillan has been appointed rate clerk in District Passenger Agent's office, Toronto, vice E. Davis, promoted.

G. Hodge, heretofore Superintendent District 3, Eastern Division, Montreal, has been appointed Superintendent District 2, Ontario Division, vice J. K. McNeillie, transferred. Office, London.

J. Scott, heretofore Trainmaster District 2, Saskatchewan Division, Saskatoon, has been appointed Trainmaster at Kenora, Ont., vice A. R. Holland, acting Trainmaster, transferred to Saskatoon, Sask.

W. A. Mather has been appointed Resident Engineer District 2, Manitoba Division, Winnipeg, vice P. R. Gransaull, resigned.

V. J. Melsted, heretofore transitman at Winnipeg, has been appointed acting Resident Engineer at Brandon, Man., vice T. Lees, Resident Engineer, transferred to Vancouver.

A. R. Holland, heretofore acting Trainmaster, Kenora, Ont., has been appointed Trainmaster District 2, Saskatchewan Division, vice J. Scott, transferred. Office, Saskatoon.

W. McGimpsey, heretofore storekeeper at Sutherland, Sask., has been appointed Storekeeper at Swift Current, Sask., vice W. J. Wood, transferred to Medicine Hat, Alta.

A. Burke has been appointed Storekeeper at Sutherland, Sask., vice W. McGimpsey, transferred to Swift Current, Sask.

H. J. Cardell has been appointed Superintendent of Agencies in charge of all matters pertaining to the agents of the Canadian Pacific Irrigation Colonization Co., vice A. B. Braddick resigned. He will report to J. S. Dennis, President C.P.I.C. Co. Office, Calgary, Alta.

W. J. Wood, heretofore Storekeeper at Swift Current, Sask., has been appointed Storekeeper at Medicine Hat, Alta., vice A. W. Gleaves, resigned.

D. Condell has been appointed Car Foreman at Nelson, B.C., vice W. Fowler resigned.

T. Lees, heretofore Resident Engineer, Brandon, Man., has been appointed Resident Engineer District 2, British Columbia Division, vice F. P. Wilson, resigned to enter private business. Office, Vancouver.

E. L. McCrea has been appointed Local Freight Agent, Vancouver, B.C., vice A. L. Clements, resigned.

J. McCreery, formerly wharf agent at Vancouver, B.C., has not, as mentioned in our last issue, been transferred, but has left the company's service.

H. Vollans, heretofore Roadmaster, Cascade Section, British Columbia Division, has been appointed Roadmaster of Vancouver Terminals.

F. G. Frieser has been appointed Assistant Foreign Freight Agent, vice H. D. Annable, deceased. Office, 1 Broadway, New York.

H. M. Tait, heretofore Travelling Passenger Agent Atlantic Service, Seattle, Wash., has been appointed General Agent Passenger Department Atlantic Service, vice T. J. Burns, resigned. Office, 232 Nicollet Ave., Minneapolis, Minn.

H. R. Mathewson, heretofore chief excursion clerk, District Passenger Agent's office, Toronto, has been appointed chief clerk to General Agent Passenger Department, Chicago, Ill.

J. J. Forster, heretofore City Passenger Agent Atlantic Service, Seattle, Wash., has been appointed Travelling Passenger Agent Atlantic Service, vice H. M. Tait, promoted to Minneapolis. Office, 609 First Ave., Seattle, Wash.

Chicago and North Western Ry.—J. M. Copeland, heretofore Travelling Freight and Passenger Agent, Chicago, Milwaukee and St. Paul Ry., Toronto, has been appointed Travelling Agent C. and N.W. Ry., vice F. H. Terry, who has entered the Great Northern Ry. service. Headquarters, Toronto.

Chicago, Milwaukee and St. Paul Ry.—J. M. Copeland, heretofore Travelling Freight and Passenger Agent, Toronto, has resigned to enter the Chicago and North Western Ry. service.

Duluth, Rainy Lake and Winnipeg Ry.—M. B. Murphy, heretofore Trainmaster Canadian Northern Ry., Winnipeg, has been appointed Superintendent D.R.L. & W. R., vice D. T. Murphy, resigned. Office, Virginia, Minn.

Grand Trunk Ry.—J. W. Farrell, heretofore Trainmaster District 3, Eastern Division, Richmond, Que., has been appointed Trainmaster District 1 Eastern Division. Office, Island Pond, Vt. Reports for District 1, heretofore made to Trainmaster Connolly are made to J. W. Farrell at Island Pond. J. J. Connolly continues as Trainmaster, District 2.

R. P. Smallhorn, heretofore Freight Agent at Quebec and Point Levi, has been appointed Trainmaster District 3, Eastern Division, vice J. W. Farrell, transferred to Island Pond, Vt. Office, Richmond, Que.

W. J. Nixon, heretofore Chief Dispatcher Districts 4 and 5, Montreal, has been appointed Trainmaster District 5. Office, Montreal. Reports for District 5, heretofore made to Assistant Superintendent Coyle, Montreal, will be forwarded to Trainmaster's Office, Montreal.

E. S. Waterson, has been appointed Chief Train Dispatcher Districts 4 and 5., vice W. J. Nixon, promoted to Trainmaster. Offiffice, Bonaventure station, Montreal.

B. Chown has been appointed Soliciting Passenger Agent, Toronto, vice W. A Mason, resigned to enter other service

W. R. Davidson has been appointed Trainmaster Districts 16, 17 and 24, Districts 18 Komoka to Glencoe, District 19 Glencoe to Kingscourt Jct., Port Colborne to Welland, Jct., Port Robinson to Port Dalhousie District 20 Tillsonburg Jct., to Harrisburg, reporting to the Assistant Superintendent. Office, Hamilton, Ont.

J. Leys has been appointed foreman erecting shop, Battle Creek, Mich., vice A. G. [illegible]

W. G. Spencer has been appointed foreman machine shop, Battle Creek, Mich., vice M. H. Westbrook, resigned.

Great Northern Ry.—F. H. Terry, heretofore Travelling Agent, Chicago & Northwestern Ry., has been appointed Travelling Agent, succeeding F. A. Nar[illegible], who has been appointed General Agent, Minneapolis, St. Paul and Sault Ste. Marie Ry., at Toronto, as announced in our last issue.

Manitoulin and North Shore Ry.—See Algoma Central and Hudson Bay Ry.

Northern Pacific Ry.—W. Adamson, heretofore Contracting Freight Agent, Winnipeg, has been appointed Travelling Freight Agent, Detroit, Mich., covering Ontario territory, vice W. E. Belcher, resigned.

Ottawa and New York Ry.—F. J. [illegible], heretofore General Freight Agent, has also been appointed General Passenger Agent, vice H. K. Gays, resigned. Office, Ottawa.

Quebec and Saguenay Ry.—J. F. Guay, heretofore Chief Engineer, has been appointed Manager. Office, Richelieu Bldg., Quebec.

A. H. N. Br[illegible] has been appointed Chief Engineer, vice J. F. Guay, appointed Manager. Office, Richelieu Bldg., Quebec.

Richelieu and Ontario Navigation Co.—J. E. Cookson has been appointed Baggage and Claims Agent, vice R. McEwen, deceased. Office, Montreal.

Rutland Rd.—W. M. Skinner having resigned as General Baggage Agent, all station and train baggage reports and correspondence relating to baggage and baggage claims are addressed to C. Hartigan, General Passenger Agent, Rutland, Vt.

Temiskaming and Northern Ontario Ry.—J. Drinkwater, District Roadmaster, North Bay, has been transferred, temporarily, to construction work on the Porcupine branch, in charge of tracklaying and steam shovel work.

S. J. F[illegible], Supervisor, is acting as District Roadmaster, North Bay, vice J. Drinkwater, temporarily transferred to the Porcupine branch.

Wabash Rd.—The title of Jas. Gass, New York State Passenger Agent, has been changed to District Passenger Agent. He will report to J. Maloney, General Passenger Department, Buffalo, N.Y.

White Pass and Yukon Route.—W. Tatter has been appointed Superintendent, River Division, vice P. F. Scharschmidt, resigned. Office, White Horse, Yukon.

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Railway Building in Saskatchewan.—A return presented to the Saskatchewan Legislature showed that during 1910, grading was completed on 817.92 miles and track laid on [illegible] miles on lines for most of which the Government had granted aid. This mileage was divided among the following companies:

	Grading	Track laid
C.P.R.	337.42	168.30
C.N.R.	267.21	219.69
G.T. Pacific R.	217.25	67.65

Of the mileage of track laid, trains were being operated over [illegible] miles by the companies and over 287.47 miles by the contractors.

A Cornwall, Ont., dispatch says that in the county court there recently D. Monroe of that place sued the G.T.R. for damages for loss of time, inconvenience and injury to health consequent upon a train not stopping when signalled at a flag station. He was awarded $50 damages and costs.

The Minister of Railways on the Intercolonial Railway

The Minister of Railways, in the course of a speech on transportation in the House of Commons Mar. 10, referred at considerable length to the Intercolonial Ry. He said it was not a small railway, its main tracks were 1,490.67 miles long and its sidings 446 miles. The capital expenditure to Mar. 31, 1910, was $82,819,218.52, while the capital expenditure for the year ended Mar. 31, 1911, will show about $1,000,000, the smallest amount expended for many years, notwithstanding the fact that a good deal of money is being expended on special works at Chatham, Sydney Mines and North Sydney. The net revenue which the I.C.R. was able to hand back to the Receiver General during the last financial year was $623,164.66. The total train mileage for the year ended June 30, 1910, was 6,762.53, an increase of 19,624 miles over the previous year. This increase was all in freight trains, as there was a decrease in the passenger train mileage owing to the decrease in the number of trains run. Notwithstanding the decrease in passenger train mileage there was an increase in the number of passengers carried.

The operating expenses of the line will compare very favorably with those of any other line in Canada, when everything is taken into consideration. The distribution of the operating expenses is as follows, the figures in brackets being those for the year ended June 30, 1909.—Maintenance of Way and Structures, 19.91%, (18.39%), maintenance of equipment, 21.19%, (22.24%), traffic expenses 2.07%, (2.08%); transportation expenses, 51.49%, (54.84%); general expenses, 2.34%, (2.45%). The I.C.R. has to contend with the keenest competition, particularly with water transportation, and this will always keep the rates low. At Montreal the railway had to compete with water transportation during a long season of open navigation, and the rates for the entire year, on some commodities, had to be made on the basis of water borne competition. Then the I.C.R. had to carry freight as between Montreal and St. John at the same rate as the C.P.R., although the latter's haul line was 250 miles shorter, and there was water competition between Halifax and Cape Breton points all the year. Then again the I.C.R. was never built as a straight commercial proposition or it would not have been located in the peculiarly meandering way in which it has been built. Further there was no line in Canada that gave so good a service to the people all along the line as the I.C.R. Coming to the question of rates, the Minister stated that better freight and passenger rates were given on the I.C.R. than on other lines. The rate per ton per mile worked out for the I.C.R. at .553 of a cent, against .77[illegible] of a cent for the C.P.R., .672 of a cent for the G.T.R. and .734 of a cent for the Canadian Northern Ry., whereas the rate per passenger per mile was 1.[illegible]c on the I.C.R. against 1.821c on the C.P.R., 1.767c on the G.T.R., and 2.181 on the Canadian Northern Ry. If the C.P.R. had been operated on the I.C.R. basis for the year ended June 30, 1910, it would have earned $17,035,236 less for freight and $1,713,918 less for passengers than it did, while if the I.C.R. had been operated on the C.P.R. basis, its earnings would have been increased by $2,145,000 from freight and by $203,[illegible] from passengers. The cost of running a train one mile on the I.C.R. was during the year ended June 30, 1910, $1.[illegible], against $1.501 on the C.P.R., $1.317 on the G.T.R. and $1.[illegible] on the Canadian Northern Ry. These observations brought him back to the original proposition that the I.C.R. did not earn a large surplus, despite its position and location as a product of confederation, simply because its freight and passenger rates are the lowest in the Dominion.

The Minister then stated that during the nine months ended Dec. 31, 1910, the I.C.R. had out of revenue, laid 55.66 miles of 80 lb. rails; ballasted 135.5 miles of track, put in 627,711 new ties, and 314 sets of switch ties, in addition to expending $153,446.16 on heavy repairs; a large sum on locomotive repairs; an excess of $96,000 had been paid for rolling stock repairs over the same period of 1909; of $236,000 for maintenance of way and structures, and from the maintenance of equipment fund there had been provided within the same period, three Pacific type locomotives, 50 steel frame 30 ton box cars, 21 steel dump 50 ton coal cars, 100 box cars, 30 tons capacity, and 50 wood cars 30 tons capacity, at a cost of $320,670. This expenditure was met out of a fund created by setting aside $25,000 a month out of revenue, and for a rail renewal fund $12,500 a month was created out of revenue. The balance from these funds was not handed back to the Receiver General, but was retained towards future expenditures. He proposed to establish another fund, in the nature of an insurance fund. The value of the property destroyed at Campbellton by fire was estimated at $76,000. He proposed charging this amount to revenue, and to make a further appropriation from net revenue of $100,000, and put it into renewal equipment. If necessary, he proposed to obtain parliamentary sanction for this and the other special accounts, and to settle on definite principles what should be charged to revenue account, and what to capital. It was estimated that at the end of the financial year, Mar. 31, the I.C.R. would show a net revenue of $700,000.

Referring to the relations between the I.C.R. and the G.T.R., the Minister said a few years ago an arrangement was made for the Intercolonial to run into Montreal, and by agreement with the G.T.R., its terminals are used, and its line run over from Ste. Rosalie to Bonaventure, and there is an arrangement for the interchanging of traffic. The G.T.R. gathered traffic mainly in Ontario, and handed it to the I.C.R. at Montreal during 1910, on which the I.C.R. earned $908,066.35 in freight, and during the same period the I.C.R. handed to the G.T.R. at Montreal, traffic, on which it earned $753,452.28. The arrangement has been a good one; it was to hand over to the G.T.R. at Montreal, all traffic which was not otherwise routed, the G.T.R. being bound to hand over unrouted traffic to the I.C.R. It would not be very long before the G.T.R. and the G.T. Pacific would come to the Government or to the I.C.R. management and ask to be relieved from their arrangement to hand over this traffic at Montreal. The G.T.R. will want to carry this traffic on to Levis, and hand it over there to the G.T. Pacific. He was not prepared to say what would happen when this request was made; but he did not think it would be granted unless the terms were right. "I believe," he went on to say, "the future of the I.C.R. is bound up in getting an exchange of traffic with a western through line that runs from the Pacific to the Atlantic, and from the Pacific to the St. Lawrence at least. I believe that is what will make the I.C.R. of still greater benefit to the people of Canada than it has been in the past. The Canadian Northern must shortly have a through line from the Pacific down to Montreal and Quebec, it must get down to the seaboard in some way. I have an idea that in years to come, perhaps before long, the I.C.R. ought to get traffic from the Canadian Northern Ry., its through traffic as well as its local traffic; and if the time ever comes when we have to release our arrangement with the G.T.R., which may not be for many years, then I think the proper thing for the I.C.R. would be to link up with the Canadian Northern Ry., and hand its traffic from Montreal and Quebec, its through as well as its local traffics, over to the Canadian Northern as far as possible for transportation west."

U. S. Freight Rate Advances Refused.

Following are the official summaries of the Interstate Commerce Commission's two recent decisions refusing applications by railway companies to advance freight rates:

THE EASTERN CASE.

In re investigation of advances in rates by carriers in official classification territory.

Carriers in official classification territory filed tariffs with this Commission naming increases upon all class rates and upon one-half of the commodity rates within that territory. The Commission, under provisions of the Mann-Elkins law, instituted proceedings of inquiry into the reasonableness of such increased rates, and, pending such investigation, the carriers voluntarily postponed the effective dates of the tariffs filed. After full hearing and investigation of the matter and upon all the facts and circumstances disclosed by the record; Held, That there is no evidence before the Commission which establishes the necessity for higher rates. The probability is that increased rates will not be necessary in the future. In view of the liberal returns received by these carriers in the past 10 years, they should be required to show, with reasonable certainty, the necessity before the increase is allowed. If actual results should demonstrate that the Commission's forecast of the future is wrong, there might be grounds for asking a further consideration of this subject.

The act to regulate commerce, as amended in regard to increased rates, should not receive exactly the same interpretation which has been put upon the English act in regard to advanced rates. The English act creates a presumption that the rates in effect on Dec. 31, 1892, were reasonable rates, and the justice of any increase must be tried by that standard, whereas the act to regulate commerce as amended does not intend to enact that all rates in effect on Jan. 1, 1910, are just and reasonable. Upon the contrary, it is open to any shipper or to this Commission to attack such a rate as unjust and unreasonable. The only effect of our statute is to cast, in certain cases, the burden of proof upon the carrier.

Before any general advance in rates can be permitted it must appear with reasonable certainty that carriers have exercised proper economy in the purchase of their supplies, in the payment of their wages and in the general conduct of their business.

The Commission has been compelled to dispose of this case upon the evidence available, but there is no testimony tending to show the cost of reproducing these properties. It is plain that a physical valuation would introduce in the calcuation a new element which might lead to a different conclusion. Congress ought to authorize a reproductive valuation of those railroads subject to Federal jurisdiction. The interest of the public ought not to depend upon a valuation made entirely by the owners of these properties, no matter how honestly the work may be prosecuted.

These class rates have been continuously in effect for the last 30 years, and less complaint with respect to the adjustment of rates has been received from this territory than from any other with which this Commission has to do. During this long period business has adjusted itself to this scheme of rates, and the Commission is not disposed upon, the mere suggestion that some better scheme might have been originally devised, to subvert the conditions which have become established.

Commodity rates stand somewhat different. An examination of the schedules shows that most of these commodity rates were carried under the classification when tariffs were first filed with this Commission in 1887, and that the present commodity rates are from 10 to 25% lower than the class rates then applicable. Carriers have frequent occasion to vary their commodity rates with varying conditions. While earnest objection has been made to the advance in class rates, in only three or four instances has the increase in commodity rates been especially attacked.

For these reasons the Commission dislikes to tie up, by hard and fast order, these commodity rates, and has concluded, as to all the rates involved in this proceeding, to simply require the defendants to cancel on, or before Mar. 10, 1911, their advanced tariffs an file and to restore their former rates, which are the rates now in effect. If this requirement is not complied with the proposed rates will be suspended, the necessary findings of fact made, and the usual two-years' order issued as to all the tariffs involved.

THE WESTERN CASE..

In re investigation of advances in rates by carriers in Western Trunk Line, Trans-Missouri, and Illinois Freight Committee territories.

The principal carriers in Western Trunk Line, Trans-Missouri, and Illinois Freight Committee territories filed with the Commission tariffs increasing their rates upon some 200 commodities in that territory, but, pending investigation involving the reasonableness of such increased rates, the carriers voluntarily suspended the effective dates of the tariffs. After full hearing and investigation of the matters involved and upon all the facts and circumstances disclosed by the record; Held, That the proposed rates are beyond the limitations placed by law upon the carriers, and should not become effective..

The distinction between the English act as to increased rates and the act to regulate commerce upon that subject is clear. The effect of the English statute was to cast upon the railway company the burden of proving that the increase of the rate was reasonable, whereas the act to regulate commerce as amended requires the carrier to show the reasonableness of the increased rate. Under the act of Parliament the carrier is called upon to justify the difference between its previously existing rate and the rate established, while under the act of Congress the carrier is called upon to prove that the new rate as a whole is reasonable.

The phrase, "the burden of proof shall be upon the common carrier," in the Mann-Elkins Act, means that the railroad which increases its rates, if challenged, must assume to prove to this Commission that the increased rates are within the words of description and limitation used in the act; that is, that they are just and reasonable. They must satisfy the mind of this Commission of this fact.

It is doubtless true that in its control over the charges which the railroads make this Commission exercises a power so extensive as to justify the broadest consideration of the economic and financial effects of its orders, but the Government has not undertaken to become the directing mind in railroad management. This Commission is not a general manager of railroads, and no matter what the revenue the carriers may receive there can be no control placed by the Commission upon its expenditure, no improvements directed, and no economies enforced.

The strength of the carriers' case is in these two contentions: (1) That the roads are not earning a fair return upon the valuation of their property; 2) That the cost of operating has increased because of increased wages. While it is true that cost of operation has increased by the amount shown as allowed to labor and addition to wages, it is also true that operating revenues have increased so as to more than absorb increased operating expenses. Moreover, cost figures furnished would indicate that under skilful management an additional tonnage may be handled under a higher wage schedule without increasing the cost of the service given.

It appears that these commodity rates already paid their due share of the value of the service rendered by the carriers. Many of them, in fact, are now twice as high for the haul immediately west of Chicago as corresponding rates for a similar haul immediately east of Chicago.

Our laws do not seek to establish dominion over private capital for any other purpose than to make sure against injustice being done the public, and thereby to make such capital itself more secure. The Commission is dealing here with a difficult problem, involving multitudinous facts and an infinite variety of modifying conditions, which make the establishment of principles and the framing of policies a matter of slow evolution. Congress has laid down a few rules. These rules the Commission is attempting to apply. It is not for the Commission to say that it represents the Government and may have a policy of its own which in any degree runs counter to the power granted to the Commission or the duty imposed upon the Commission. The railroads may not look to this tribunal to negative or modify the expressed will of the legislature. They have laid before the Commission the facts and law which would make for a justification of their course in the increasing of rates, but to the mind of the Commission their justification has not been convincing.

The carriers herein are requested to withdraw the proposed tariffs forthwith. If such action is not taken on or before Mar. 10, 1911, the Commission will further suspend these rates, make appropriate finding, and issue an order directing the maintenance of the present rates for a period of two years from that date.

Early Maritime Province Railways.

Prior to Confederation, according to answers to questions in the House of Commons by the Minister of Railways, recently, the province of Nova Scotia built 145 miles, and the province of New Brunswick 108 miles of railway lines, which now form part of the Intercolonial Ry. The mileage in Nova Scotia was built between 1854 and 1858, and extended from Halifax via Truro to Pictou, and the Windsor branch, the cost of construction being $6,124,241.15. The mileage in New Brunswick was built between 1856 and 1860, and included the following lines: Moncton to Shediac; St. John to Rothesay, Rothesay to Hampton; Hampton to Sussex, and Sussex to Moncton; the total cost being $4,642,484.39. These amounts were assumed as provincial debt account in 1874, 1875 and 1876.

Prior to Confederation the Prince Edward Island Government built 198½ miles of railway between 1871 and 1875 as follows: From Charlottetown to Royalty Jct.; from Royalty Jct, to Summerside; from Summerside to Tignish; from Tignish to Mount Stewart; from Stewart to Souris; from Mount Stewart to Georgetown. The amount expended was $3,114,731.11, which was assumed as provincial (P.E.I.) debt account, 1874, 1875 and 1876

Hon. G. P. Graham on Railways.

Transportation, said the Minister of Railways in a speech in the House of Commons Mar. 10, has as much to do with the [illegible] of a country as tariff has. These two may [illegible] be interwoven in a measure, but if the methods are not provided by which the wealth producers can get the products of their labors to market at a reasonable rate, with fair speed and in good condition, there is little use in tariffs and less use in hunting for markets for these products. It is no exaggeration to say that in the matter of perfecting transportation facilities by aid from various sources Canada [illegible] leads the world in the [illegible] she has shown. There is a difference of opinion as to the propriety of further encouraging these great transportation companies by cash subsidies, by land grants or by guarantee. It was not the policy of the present government to any more give aid by way of land grants for the extension of transportation facilities. The land of the Dominion had become too valuable to give in this way, and the potentialities of increase in that value were so great on account of the rapid development of the country that it was more practical to give in dollars and cents any aid proposed. And besides when it is given in this way the people know exactly what they are paying for the benefit received. He had no fear of the success, present or future, of the railway companies of Canada, and [illegible] north-and-south lines we must not forget that [illegible] running south [illegible] can take traffic from Canadian roads also run north, and can bring traffic to Canadian roads. And Canada having the geographical position on this continent that she enjoys ought to be able to more than hold her own in the carrying trade of the continent, other things being at all equal. Our rail routes are shorter, and we own the largest portion of the waterways that lead from the west to the east. Under [illegible] I think with the people of the Dominion of Canada [illegible] whether they shall [illegible] their carrying trade and also [illegible] whether they shall in the future, [illegible] their own carrying trade and also a [illegible] of the carrying trade of the great [illegible] to the south of us."

He next referred to the work of the Board of Railway Commissioners, stating that [illegible] in Canada, as he [illegible] outside Canada, the [illegible] Board [illegible] was [illegible] than any other similar body [illegible] world and it was the most popular tribunal for the settlement of difficulties in which the people are concerned that existed [illegible]. It had been [illegible] that [illegible] should be [illegible] the interests of the public in [illegible] before the Board. This [illegible] but he [illegible] it was [illegible]. There had [illegible] staff of the Board, an operating department, at the head of which there was a practical [illegible] to advise the Board. The creation of this department had proved [illegible] it was much [illegible] matters than formerly.

The railway mileage [illegible] that [illegible] in 1910 was 24,731, [illegible] 24,104 in 1909, and [illegible] in 1901. In the mileage the G. T. Pacific Ry. [illegible] it being not operated as a [illegible] road. The mileage under construction on June 30, 1910, was 4,500 miles. The [illegible] was $1,110,297,687. Aid had been granted towards the building of these railways by the Dominion, the several provinces and by municipalities to the amount of $190,752,062, of which $1,7[illegible] was given last year, while in addition last year the [illegible] a loan of $10,000,000 to the G. T. Pacific Ry. The Dominion had granted 2,040,378 acres of land in aid of railway construction and the province [illegible],551,943 acres. The number of passengers carried last year was 3,211,267 greater than in the previous year, and [illegible] greater than in the year ended June 30, 1901, while there was an increase of 7,640,608 tons of freight carried over the total for the year ended June 30, 1909, and of $37,483,495 tons over the year ended June 30, 1901. The gross receipts of the railways last year totalled $173,956,217, against $143,956,-[illegible] in the preceding year, and $72,898,-749 for the year ended June 30, 1901; while the operating expenses were last year $120,405,440, against $104,600,084, and $50,368,726 for the year ended June 30, 1909. The available rolling stock at June 30, 1910, consisted of 4,079 locomotives, 119,713 freight cars, and 4,330 passenger cars, there having been added during the year 110 locomotives, 138 passenger cars, 1,934 freight cars, and 789 company cars. There were in the service of Canadian railways on June 30 last 123,768 employes, whose wage bill amounted to 67,167,703. In addition, there were 16,709 employes engaged in outside operations such as steamers and hotels, whose remuneration amounted to $5,169,923. The aggregate would therefore be 140,477 employes, with a total wage bill of $72,237,626. Assuming that each railway employe represents five persons, it is obvious that about one individual in 10 of the total population finds a livelihood from the railways of Canada.

"Now," said the Minister in conclusion, "to put it briefly, these figures show, I think, these facts. The year 1910, measured by the increased volume of traffic, measured by the earnings, economic administration, satisfactory maintenance, and swelling mileage, and measured by every proper standard, appears to have been the best year in the history of Canadian railroads."

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Railway Development.

The following matter was too late to be included with the other matter under that heading on pages 319 to 323:

Brandon Transfer Ry.—A letter was received by the President of the Brandon, Man., Board of Trade, Mar. 15, from H. A. K. Drury, of the engineering staff of the Board of Railway Commissioners, Winnipeg, stating that he would reach the city Mar. 23 to make the necessary inspection of the route for the proposed transfer railway, to connect all the railways now reaching the city. (Mar., pg. 205.)

Cobalt Range Ry.—Application is being made to the Dominion Parliament to extend the time within which the company may build the lines authorized by chap. 71 of the statutes of 1905. MacCraken, Henderson, McDougal and Greene, Ottawa, are solicitors for applicants. (June 1909, pg. 475.)

Quebec and New Brunswick Ry.—The [illegible] for the construction of a line of railway [illegible] by the Q. and N.B. Ry. from Quebec [illegible] to St. John, N.B., [illegible] by T. Malcolm, President of the International Ry. of New Brunswick. The route of the proposed [illegible] from the south side of the St. Lawrence River near the site of the Quebec Bridge right across the country, entering New Brunswick near Connors, [illegible] to St. Leonards, the terminal of the International Ry. of New Brunswick, on the St. John River, thence to Grand Falls or Aroostook Jct., and the south shore of the St. John River, via Woodstock and Fredericton to St. John. The distance from Quebec to St. John by this route is 102 miles against the 552 miles by the National Transcontinental Railway route, made of 462 miles Quebec to Moncton, and 90 miles from Moncton to St. John, via I.C.R. (Feb., pg. 113. See also St. John Valley Ry.)

Reid Newfoundland Ry.—The surveys for the Trepassey branch line have been completed. Engineer Powell, who was working at the main line end of the branch has returned to St. Johns, and Engineer Joyce, with his party, completed the location into Trepassey. It is expected that work will be started on the line during the summer. (Mar., pg. 207.)

St. John Valley Ry.—There was a lengthened debate in the House of Commons, Mar. 20, on a resolution proposed by the Minister of Railways, that the Dominion Government should lease the proposed line from Grand Falls to St. John, N.B., towards the building of which the New Brunswick Government has offered a subsidy of $25000 a mile. The lease, if made, will be for 99 years, and the rental will be 40% of the gross receipts from operation. The resolutions were adopted with some slight amendments, the most important one being that the necessary equipment was to be provided by the Intercolonial Ry.

The report of the engineer in charge of the surveys was presented to the New Brunswick Legislature Mar. 17. After describing the Fredericton-St. John section, which has been under survey during the year, and for which several routes were gone over, D. F. Maxwell, the Chief Engineer, submits estimates showing the cost of the whole line. This is given in sections, and where alternative surveys have been made, the cost of each has been estimated. No one definite route is suggested for the line as a whole and consequently until the route is finally determined upon, it is impossible to name any total sum as the estimated cost of the whole work. The estimated cost for the lightest section is $30,473 a mile, and for the heaviest, $123,00 a mile. This latter estimate covers the 23 miles from Evandale to St. John, and includes $528,000 for a bridge over the St. John River, and $1,317,625 for a bridge over the Kennebecasis River.

T. Malcolm, President of the International Ry. of New Brunswick, wrote the N.B. Government offering, on behalf of the Quebec and New Brunswick Ry., which has a charter to build a line from Quebec to St. John, to enter into a contract to build the proposed St. John Valley Ry., from Grand Falls to St. John, such line, when completed, to be leased to the Canadian Government and operated as part of the Intercolonial Ry. To this letter the Government replied that as soon as the act of the Legislature granting aid for the line becomes operative by proclamation, and the Dominion Legislation is passed the Government would be prepared to discuss the matter of a contract with Mr. Malcolm. See also Quebec and New Brunswick Ry. (Mar., pg. 207.)

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Grand Trunk Pacific Railway. — A Winnipeg press dispatch of Mar. 24 says contracts were let that day for $17,000,-000 of work on lines in the west, and that the contracts include 143 miles on the Calgary branch, 59 miles on the branch to Battleford, Sask.; 68 miles on the Melville-Regina branch, 72 miles on the Alberta coal branch, and 50 miles on the line from Biggar to Calgary. "Arrangements," says the dispatch, "are also being made for the erection of 140 station buildings and 100 hotels." The branch lines referred to are already under construction, and the contracts reported let are apparently for extensions, but there is undoubtedly something wrong about the reported erection of 100 hotels.

Large Orders For Steel Rails.

Mackenzie, Mann and Co. have ordered recently 90,000 tons of steel rails, as follows:—From the Dominion Iron and Steel Co., 10,000 tons 80 lbs., for Ontario lines; 35,000 tons for lines in Northwestern Provinces, and 10,000 tons 80 lbs. for British Columbia lines. From the Algoma Steel Co., 25,000 tons for lines in the Northwest Provinces, and 10,000 tons 80 lbs. have been ordered in the United States for the line between Duluth and Virginia, Minn.

The National Transcontinental Railway Commissioners have ordered 34,927 gross tons from the Algoma Steel Co., and 26,273 tons from the Dominion Iron and Steel Co., all 80 lbs.

The Grand Trunk Ry. has ordered 37,500 tons of 100 lbs. rails, divided between the Algoma Steel Co. and the Dominion Iron and Steel Co.

An unconfirmed Montreal press dispatch states that the C.P.R. has ordered 100,000 tons from the Algoma Steel Co., and 10,000 tons from the Dominion Iron and Steel Co., and that it is in the market for an additional 20,000 tons.

Additional Railway Contracts Awarded.

The Kootenay and Alberta Ry. has let a contract to Grant, Smith & Co., of Spokane, Wash., for the construction of 13 miles of line from about a mile west of Pincher, Alta., southwesterly to the Western Coal and Coke Co.'s mines at Beaver Creek.

Press reports state that the Alberta Central Ry. has let a contract to Janse, McDonald and Co. for grading and ballasting 100 miles, 64 west of Red Deer, Alta., and 36 east of it.

Among the Express Companies.

The Ontario Legislature has provided for the taxation of express companies operating in the province, at the rate of $500 for each 100 miles, or part thereof, of line operated over.

W. Bradshaw, who was recently arrested in London, Ont., on charges of raising the amounts of several Canadian Ex. Co.'s money orders to the limit mentioned on the stubs, was sentenced recently at Ingersoll, Ont., to five years in Kingston penitentiary.

The Dominion Ex. Co., incorporated under the Dominion Companies Act. has been licensed under the act respecting provincial corporations, to hold and dispose of real estate in Ontario, as if it had been incorporated under the Ontario Companies Act.

The bill which was recently before the House of Commons to compel all express companies to make returns of unclaimed balances to the Government was again considered by the Railway Committee Mar. 14 and it was decided that the companies must make such returns, but that, for the present, they would not have to hand over unclaimed amounts to the Government and the bill was reported as amended.

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Saskatchewan Legislature. — Among the acts assented to Mar. 14, were the following:—Incorporating the Shaw Lumber and Ry. Co.; Respecting the City of Regina's Street Railway system; Amending the Railway and Telephone Department Act; Incorporating the Moose Jaw Electric Ry.; Incorporating the Saskatchewan Co-Operative Elevator Co.

The International Association of Ticket Agents, which has its headquarters in Philadelphia, Pa., met at Norfolk, Va., March 14 and 15, and afterwards went for a trip through Florida and Cuba.

Grain Elevator Notes.

The C.P.R. is reported to have the construction of an elevator at Port Burwell, Ont., under consideration, with other improvements.

Negotiations are proceeding in Calgary, with a view to the erection of an elevator at Delburne, Alta., and it is hoped to have the work under way very shortly.

Three men have been sentenced to five years each in the Manitoba penitentiary, for the theft of about 1,200 bush of wheat from the Empire elevator at Fort William, Ont.

The Taylor Milling and Elevator Co., Ltd., of Lethbridge, Alta., has been licensed to carry on its business in British Columbia, with office at Nelson, and A. M. Johnson as its attorney.

The charges against the Thunder Bay Elevator Co. for making incorrect returns to the Warehouse Commissioner, were dismissed, at Winnipeg, Mar. 15. on the ground that the prosecution had not acted in conformity with the act, in view of the dates of the alleged offences, and the information given.

The Saskatchewan Legislature has amended the Grain Growers' Elevator Co.'s bill, in its passage through committee by providing that the Government may aid in the erection or acquisition of any local elevator by loaning up to 85% of the estimated cost of the same, such sum to be repayable in 20 equal annual instalments of principal and interest, the loan to be secured by a first mortgage on the elevator.

The appeals of the Grand Trunk Pacific Terminal Elevator Co., as owner of the G.T.P. elevator at Fort William, Ont., and of the Grand Trunk Pacific Elevator Co., as lessees, against the assessments made by the city, on the property, and for a business tax, were allowed by the Ontario Railway and Municipal Board, Mar. 15, and the assessments set aside. For the companies it was held that there was an agreement between the G.T.P.R. and the city, ratified by the Ontario Legislature, exempting the company from all taxes, except school taxes, on all lands, buildings, structures and property acquired and held for railway purposes for 15 years, from May 1, 1905, and that the elevator properties were part of the necessary terminal properties incidental to the traffic of the railway.

The Dominion Government's grain elevator bill was dealt with during March by a special committee of the Senate, and evidence was heard dealing with the matter, from the point of elevator owners. The clause forbidding stock holders in terminal elevators, having an interest in the handling of grain or being dealers in grain, was objected to by interests from Port Arthur and Fort William. Ont., and it was stated that, apart from eight, owned by the C.P.R., all the terminal elevators at the dual ports were controlled by the Line Elevators Co. and, if the clause were passed, they would be forced to abandon the terimnal elevators, without which they could not carry on their business profitably. Other interests from the same quarter objected to their elevators being dealt with under this section, as they were really wheat hospitals.

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The Manitoba Government has decided to petition the Dominion Government to amend the Railway Act so as to compel railway companies to place telephones in their stations. The Manitoba Premier in speaking on the subject, is reported to have stated that his Government had installed telephones in stations at its own expense, but he did not consider this fair.

Telegraph and Cable Matters.

The Department of Labor, has, upon the request of the Great North Western Telegraph Co.'s operators, agreed to the appointment of a board of conciliation to enquire into the matter of wages and hours. D. Campbell, Toronto, has been named as the men's representative.

The Board of Railway Commissioners will sit at Toronto, Apr. 24, to proceed with the general enquiry into the tariffs and tolls of telegraph companies, and the settlement of proper forms for them to use. The Dominion Government has retained I. Pitblado, K.C., Winnipeg, and W. S. Buell, Brockville, Ont., to conduct the further proceedings before the Board in this enquiry.

The recommendation of the various boards of trade in the West Indies concerning the future of cable communication between Canada and the West Indies, have been received by the committee having the matter in hand. The proposals cover the public ownership and operation of the cables in the British West Indies. and possibly the system northward to Halifax, N.S., with the duplication, or supplementing. of the line from Halifax to Jamaica by a wireless installation.

G. D. Perry, appointed General Manager G.N.W. Telegraph Co., vice I. McMichael, Vice President and General Manager, deceased, was born at Whitby, Ont., Apr. 19, 1858, and educated at Trinity College School, Port Hope. After some time with the Standard Bank of Canada, he entered Credit Valley Ry. service, being appointed cashier, Feb. 1880. and on the absorption of that railway by the C.P.R., he entered Dominion Telegraph Co.'s service, Feb. 1881, and remained with the G.N.W. Telegraph Co., when it leased the Dominion Telegraph Co.'s lines, grapher, accountant, secretary and auditor, Secretary-Treasurer and Superintendent of Supplies, the two last named positions having been held since 1902.

The following general circular has been issued in connection with appointments in the Great North Western Telegraph Co., consequent on the death of I. McMichael, Vice President and General Manager:—Geo. D. Perry has been appointed General Manager. All correspondence for the General Manager's Department should now be addressed to him. Cable registrations, enquiries and information as to tariffs and rates will continue to be sent to him as General Manager.

A. C. McConnell has been appointed Secretary and Auditor of the company.

D. E. Henry has been appointed Treasurer. All remittances should hereafter be addressed to him, and he will also have charge of the money transfer service, and all advices regarding this service should be addressed to him, and he will, when necessary, authorize bank drafts for payment of transfers.

Geo. Watt has been appointed Superintendent of Supplies. All requisitions and correspondence in connection with supplies should be addressed to him. Offices in New York State will continue to send requisitions for supplies to A. R. Porte, Superintendent, Ogdensburg, N.Y. Railway Agents who have been sending requisitions through their Superintendent of Telegraph will continue to do so.

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A London, Eng., cable, March 12. says:—Parr's Bank and the Western Canada Trust Co. offer £410,900 sterling 6% first mortgage bonds of the Canadian Steel Foundries, Ltd., at 102. The prospectus states that provision is made for acquiring the remaining shares and for the retirement of the outstanding bonds of the Montreal Steel Works, Ltd.

Careful investigation will convince you that when you buy a Booth Water Softener your money becomes worth more than if invested in some other machine.

Our claim of greater efficiency, simplicity, economy of operation is fully demonstrated by results being obtained. We do not claim that the Booth is the cheapest softener on the market.

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The Lake Shore Express

with its excellent parlor-observation and dining cars, is the best appointed and most popular train in the Muskoka service. It provides the quickest, most comfortable way to reach Lake Simcoe, Sparrow Lake, Parry Sound District, the Georgian Bay, the Maganetawan Country, and

The Muskoka Lakes

A new and improved service will be inaugurated on the Canadian Northern Ontario this season from Toronto to Point-au-Baril on the Georgian Bay.

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call at C. N. O. R. Ticket Offices, corner King and Toronto Streets, and Union Station, or write C. Price Green, District Passenger Agent, Toronto, Ont.

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Canadian Street Railway Association.

President, D. McDonald, General Manager Montreal St. Ry.; Vice President, J. Anderson, Manager Sandwich, Windsor and Amherstburg Ry.; Secretary-Treasurer, Acton Burrows, Managing Director Railway and Marine World.

Association's Office, 70 Bond St., Toronto.

Executive Committee.—C. E. A. Carr, General Manager Quebec Ry. Light, Heat and Power Co.; P. Dubee, Secretary Montreal St. Ry.; H. M. Hopper, Secretary-Treasurer, St. John Ry.; J. E. Hutcheson, Superintendent and Purchasing Agent Ottawa Electric Ry.; C. B. King, Manager London St. Ry.; W. R. McRae, Superintendent Motor and Truck Department Toronto Ry.

Assistant Secretary, Aubrey Acton Burrows, Secretary and Business Manager Railway and Marine World.

Official Organ, The Railway and Marine World.

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Winnipeg Electric Ry., Co's Report.

Following are extracts from the report for the year 1910. The net earnings were $934,769.53, after providing for all operating expenses, taxes, the city's proportion of earnings, and other fixed charges. Out of these net earnings were declared four quarterly dividends amounting to $600,000, leaving a surplus of $334,769.53, which has been transferred to the credit of profit and loss, making a total credit to this acount at Dec. 31, of $1,196,199.56.

In accordance with the plan of extensions adopted at the last annual meeting, the following improvements and additions to the equipment and system have been made in the various departments:

Track and Roadbed,—10.157 miles of track was laid as follows: 4,803 miles, with concrete foundation and asphalt pavement; 4.422 miles with broken stone foundation and gravel pavement; and .931 mile surface track; Rolling Stock.—26 large double-truck closed motor cars with wide vestibules, equipped with air brakes, electric heaters both in the body of the car and the motorman's vestibule, and many other modern appliances to ensure the safety of passengers and operators were constructed in the company's shops and put into service. Three new snow sweepers of latest modern design were purchased and are also in service; Electric Lighting and Power Distribution System,—791 new poles were erected, and 209,340 lbs. of wire with 135 transformers put up, in extension of the light and power distribution system; Gas Distribution System,—38,729 ft. of new gas main were laid, and 827 new gas services installed in extension of the gas distribution system; Construction, 1910.—Six new Babcock-Wilcox boilers at power house, Assiniboine Ave., boiler settings, steel smoke stack, etc. Capacity of boilers, 3,000 h.p.; addition to pump room; gas holder, capacity 1,000,000 ft., partly erected; the whole of the tank, inner lift, and portion of the middle lift set on piles and concrete base; new retort house and chimney at gas works, with 10 benches of 6 retorts each bench; new brick and steel 5-track car barn at Main St., North.

Assets.

Cost of property: street railway, electric lighting, electric power, gas	$14,612,222 68
Stores	142,456 39
Accounts receivable	186,277 10
Cash on hand and in bank	235,629 47
Conductors' working fund	4,463 70
Subsidiary companies	317,830 64
	$15,498,879 98

Liabilities.

Capital stock		$ 6,000,000 00
Bonds 5% payable Jan. 1, 1927	1,000,000 00	
Bonds 5% payable Jan. 2, 1935	4,000,000 00	
		5,000,000 00
Debenture stock 4½% perpetual	£ 500,000 00	
		2,434,602 62
Accounts payable	195,362 07	
Dividend paid Jan. 2, 1911	150,000 00	
Wages for Dec.	26,625 90	
		371,987 97
Interest on bonds paid Jan. 2	125,000 00	
Accrued interest on debenture stock	27,175 00	
		152,175 00
Car license due Feb. 1, 1911	4,600 00	
City percentage due 1st Feb., 1911	63,293 70	
		67,893 70
Unredeemed tickets		2,055 61
Suspense		273,965 52
		$14,302,680 42
Surplus		1,196,199 56
		$15,498,879 98

Contingent Liability.

Suburban Rapid Transit Co.'s bonds	$500,000
Winnipeg, Selkirk & Lake Winnipeg Ry. Co.'s bonds	400,000
	$900,000

Interest and principal guaranteed.

Revenue and Expenditure.

Gross earnings	$3,284,341 83	
Gross expenses	1,654,833 60	
Net earnings		$1,629,508 23
Fixed charges	$ 694,738 70	
Dividends	600,000 00	
		1,294,738 70
Surplus		$ 334,769 53

Profit and Loss Account.

Balance at credit Dec. 31, 1909	$ 861,430 03
Net earnings	334,769 53
Balance at credit Dec. 31, 1910	$1,196,199 56

The following increases were made during 1910, over 1909: Gross receipts, $660,610.42 or 25.18%; operating expenses, $334,168.51 or 25.31%; net earnings, $326,441.91 or 25.05%. The net income per cent. of capital was 15.58 against 14.30 in 1909. The number of passengers carried was 31,369,421, an increase of 4,968,648 over 1909. The operating expenses for the year were 50.39 of the earnings, and the earnings per capita, were 10.02.

WINNIPEG, SELKIRK AND LAKE WINNIPEG RY. CO.

Assets.

Cost of property		$842,179 96
Stores		575 86
Cash on hand in bank		6,248 91
Agents' balances:		
Winnipeg	$224 11	
Selkirk	25 00	
		249 11
Accounts receivable		568 79
		$849,822 63

Liabilities.

Capital stock	$500,000 00	
Less unpaid	388,500 00	
		111,500 00
Bonds		400,000 00
Accounts payable		313,369 49
Suspense		6,272 80
		$831,142 29
Surplus		18,680 34
		$849,822 63

Interest and bonds guaranteed by Winnipeg Electric Ry. Co.

Revenue and Expenditure.

Gross earnings	$75,725 16	
Gross expenses	35,641 95	
Net earnings		$40,083 21
Fixed charges:		
Interest on bonds	20,000 00	
Taxes, etc.	12,643 86	
		32,643 86
Surplus		$ 7,439 35

Profit and Loss.

Surplus for year ended Dec. 31, 1910	$ 7,439 35
Balance at credit Dec. 31, 1909	11,240 99
Balance at crdeit	$18,680 34

SUBURBAN RAPID TRANSIT CO.

Assets.

Cost of property	$407,939 59
Cash on hand	28 60
Cash in bank	1,500 44
W.E.R. Co. loan	201,257 47
Accounts receivable	1,345 70
	$612,071 80
Balance	2,694 26
	$614,766 06

Liabilities.

Capital stock	$100,000 00
Bonds	500,000 00
Accounts payable	13,841 79
Ticket account	485 07
Suspense	439 20
	$614,766 06

Bonds and interest guaranteed by Winnipeg Electric Ry. Co.

Revenue and Expenditure.

Gross earnings	$56,016 46	
Gross expenses	34,107 78	
Net earnings		$21,908 68
Fixed charges:		
Interest on bonds	25,000 00	
Taxes, etc.	1,209 16	
		26,209 16
Deficit		$ 4,300 48

Profit and Loss.

Balance at credit Dec. 31, 1909	$1,606 22
Deficit for 1910	4,300 48
Balance at debit Dec. 31, 1910	$2,694 26

The boards for the current year, are as follows:

Winnipeg Electric Ry.:—President, Sir Wm. Mackenzie; Vice President, Wm. Whyte; Secretary-Treasurer, F. M. Morse; other directors, Sir Donald D. Mann, Sir Wm. C. VanHorne, D. B. Hanna, A. M. Nanton, Hugh Sutherland, R. J. Mackenzie.

Winnipeg, Selkirk and Lake Winnipeg Ry.:—President, F. M. Morse; Vice President, D. H. Laird; other directors, Wm. Whyte, A. M. Nanton, L. J. Loader, J. H. Munson, Hugh Sutherland.

Suburban Rapid Transit Co.:—President A. M. Nanton; Secretary, F. M. Morse; Wm. Whyte, D. B. Hanna, Hugh Sutherland.

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Dominion Electric Railway Charters.

The Minister of Railways, replying to questions in the House of Commons recently, gave a list of electric railway companies which have been chartered by the Dominion Parliament since 1896, together with a statement as to the extensions of time granted to some of them. There were, he said, a number of other electric railway companies incorporated under provincial acts, and under provincial jurisdiction, of which his department had no knowledge.

The following list gives all the information contained in the answers to the questions, all the facts given in relation to each company being brought together:

Quebec.—Hull Electric Ry., La Compagnie du Chemin de Fer Electric, was granted an extension of time by chap. 167 of the statutes of 1905. Montreal and Southern Counties Ry., Montreal Park and Island Ry., Montreal Terminal Ry., Quebec Ry., Light and Power Co.

Ontario.—Berlin, Waterloo, Wellesley and Lake Huron Ry. Brantford and Hamilton Ry.; an amending act was passed in 1904, but it only came in force Jan. 1., 1905, by proclamation. Chatham, Wallaceburg, and Lake Erie Ry. Essex Terminal Ry. Grand Valley Ry. Hamilton Radial Electric Ry. Hespeler, Galt and Guelph Ry. Niagara, St. Catharines and Toronto Ry. Oshawa Ry. Nipissing Central Ry. Oshawa Electric Ry., an amending act, chap. 82, was passed in 1899 granting an extension of time for construction. Windsor, Essex and Lake Shore Rapid Ry.

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It has 1800 B.T.U. and by this enormous heating power can do things which no other gas can. Blaugas is used, not only for house lighting, cooking, and water-heating, but for lighting of railway cars, buoys, railway stations, lighthouses. It is extensively used for all industrial purposes, as

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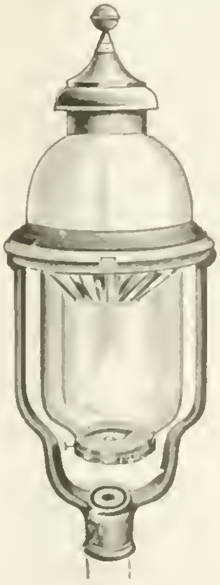

No. 5 Street Lamp.

Alberta.—Edmonton St. Ry., with an amending act passed in 1904.

Yukon.—Dawson City Electric Ry.

Mexico.—Mexico Consolidated Electric Ry. Co., with amending acts, chapters 125 and 146 of the statutes of 1906. Monterey Electric and Gas Co., with an amending act, chap. 126 of the statutes of 1905.

◆

Dominion Power and Transmission Co.

The report for 1910, presented at the annual meeting at Hamilton. Ont., Feb. 14, shows that the gross earnings were $1,922,398, and the net earnings, $533,757. The amount paid in dividends was $124,521, and $327,566 was paid for interest. The assets are placed at $19,355,247, and there is $1,019,689 to the credit of profit and loss. It was announced that dividends on the preference stock for the two years ended July, 1910, were unpaid, and though some of the shareholders did not concur in it, the directors thought it advisable to withhold payment at that time. A dividend at the rate of 7% was paid for the last half year, and it was expected that the back dividends would be paid before long. Hon. J. M. Gibson, in referring to some of the improvements and betterments that had been made, said that the proposed extensions of the street railway would be made, but that they would have to be carefully thought out. It was decided that the salary of the President, at $2,400 a year, be paid, dating from 1908, and that the directors be paid $400 a year each, and the Secretary $600 a year, from the same date. The company controls the Hamilton St. Ry. and the various electric lines radiating from Hamilton. Following is the board for the current year:—President, J. R. Moodie; Vice President, J. Dixon; other directors, J. W. Sutherland, W. O. Greening, L. Harris, W. Southam and Hon. J. M. Gibson.

◆

Halifax Electric Tramway Co.

Following are extracts from the report for the year 1910:—

An encouraging increase in the volume of business has marked the operations of the year. In view of the general condition of the company, the directors decided during the year to make a substantial reduction in the rates for electric light—the general consumers being allowed a further discount of 10% from Oct. 1. This additional concession to consumers is equivalent to something over 1% on the capital stock. The proportion of operating expenses to income was reduced to 51.94. In addition to other improvements during the year, the sprinkler system, was installed, thus reducing the risk of loss by fire and enabling the company to obtain insurance at greatly reduced rates.

ASSETS.

Property	$2,389,032 88
Accounts receivable and securities	72,771 02
Supplies	19,963 83
Suspense accounts	8,413 06
Cash on hand and in bank	98,010 06
	$2,588,191 85

LIABILITIES.

Capital stock	$1,400,000 00
Mortgage bonds	600,000 00
Accounts payable	27,745 32
Tickets outstanding	2,898 23
Coupons payable Jan. 1, 1911	15,000 00
Dividend payable	24,500 00
Surplus account	518,048 30
	$2,588,191 85

INCOME ACCOUNT.

Passenger receipts	$214,183 72
Light and power earnings	200,196 81
Gas earnings	59,070 45
Sundry earnings	3,658 08
	$477,109 06
Operating expenses	246,634 45
Interest on bonds	30,000 00
Net earnings to surplus account	200,474 61
	$477,109 06

SURPLUS ACCOUNT.

Balance, 1909	$437,802 35
Net earnings, 1910	200,474 61
	$638,276 96
Dividends	98,000 00
Renewals and betterments	21,125 22
Accounts written off	1,103 44
Balance forward	518,048 80
	$638,276 96

Following are comparative general statistics:

	1910.	1909.
Railway earnings	$214,183.72	$198,422.96
Electric light and power earnings	203,854.89	191.322.89
Gas and products	59,070.45	57,833.99
Total earnings	477,109.06	447,579.84
Operating expenses	246,634.45	239,606.05
Bond interest	30,000.00	30.000.00
Net earnings	200,474.61	177,973.79
Dividends and interest	98,000.00	85,129.94
Surplus	102,474.61	92.843.85
Operating expenses per cent. of income	51.94	53.54
Passengers carried	4,848,767	4,465,308
Car mileage	907,498	888,024

Following is the board for the current year:—President, Hon. D. MacKeen; Vice Presidents, J. Y. Payzant and W. B. Ross; other directors, A. Kingman, J. Hutchinson, J. C. Mackintosh, C. C. Blackadar, F. B. McCurdy, M. C. Grant.

◆

St. John Ry. Co's Report,

Following are extracts from the report submitted at the annual meeting recently:—

It having been considered advisable to have the fiscal year terminate with the calendar year, the report covers a period of eight months ended Dec. 31, 1910, and shows a net profit, after providing for interest on bonds and all other charges, of $34,840.27, out of which a half yearly dividend of 3% has been declared, amounting to $24,000, leaving a balance of $10,840.27, which has been transferred to profit and loss.

During the year replacements have been made in the power house, of a 500 k. w. mixed pressure turbine and alternating generator, and a 750 k.w. motor generator set, the cost of which has been charged to contingent and depreciation account.

The directors recommend that the tracks be extended from the foot of Brussels St. to Kane's Corner, and to Fernhill Cemetery on Westmoreland Road, also out Crouchville Road, in all 1¾ miles; and that they be authorized to extend the electric lighting service into Kings county.

ASSETS.

Cost of property	$1,905,584 14
Accounts receivable	47,054 28
Stores	41,463 52
Cash on hand	1,300 00
Cash in bank	15,858 51
	$2,011,260 45

LIABILITIES.

Capital stock	$ 800,000 00
Bonds	1,000 000 00
Accounts payable	37,738 68
Accrued interest on bonds	8,333 33
Outstanding tickets	2,104 67
Contingent and depreciation account	39,383 18
Profit and loss	123,700 59
	$2,011,260 45

INCOME ACCOUNT.

Dividends paid Dec. 13, 1910	$21 000 00
Transferred to profit and loss	10,840 27
	$34,840 27
Profits for eight months after, providing for interest on bonds and all other charges	$34 840 27
	$34 840 27

Following is the board for the current year:—President, Jas. Ross; Vice President, Col. H. H. McLean, K.C.; other directors, R. B. Emerson, Jas. Manchester, J. J. Tucker, W. Downie, H. B. Robinson, F. E. Sayre.

B. C. E. R. Vancouver Terminal.

Our February issue contained an illustration of the general offices and interurban station to be built by the British Columbia Electric Ry. at Vancouver. The location is at the corner of Columbia and Eighth Sts., in close proximity to the C.P.R., New Westminster branch station.

The structure will be 132 ft. square, with an elevation of 36 ft. above the sidewalk, with basement for baggage storage equipped with electric elevator. Provision has been made in the foundation and walls to carry an additional storey. The foundation is made up of piles driven in clusters to a depth of 25 ft. to 40 ft. capped with steel reinforced concrete 3 ft. thick by 9 ft. square, carrying reinforced beams which in turn support the side walls. The walls will be of pressed brick belted with concrete. An abundance of leaded glass windows will furnish light to the outside offices, while the inside rooms will be lighted by skylights.

The ground floor will contain the general waiting room, ladies' waiting room, ticket office, dispatchers' office, baggage room, lavatories, etc., and will have concrete floors throughout. The walls will be panelled in quarter sawn fir. All the lavatories will be strictly sanitary with mosaic tile floors and modern fixtures. The first floor will contain the department offices, conductors' and motormen's rooms, offices of Division Manager, Local Manager, accounting, light and power, engineering, Auditor, Trainmaster, Building Superintendent, etc., the space covered by offices totalling nearly 3,000 sq. ft. A generous portion will be reserved for bedrooms, clubroom, locker and changing room for conductors and motormen. Although the danger from fire will be reduced to a minimum in the building, each floor will be equipped with a 2½ in. hose of sufficient length to reach any point on the floors and fed by a 4 in. main tapping the city system.

The tracks will be arranged to facilitate the rapid handling of traffic over a loop system, the cars running through the station, which will mean a great saving of time over the old method of changing ends at terminal points.

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Toronto and York Radial Railway.

H. Waddington, of North Toronto, and H. M. Winter, of Toronto complained to the Ontario Railway and Municipal Board recently that the T. & Y. R. Ry. was operating its Metropolitan division in an inefficient and unsatisfactory manner, that the cars were overcrowded and insufficient to accommodate the passenger traffic, and that the service was inefficient owing to delays in passing cars or vehicles and moving freight. The applicants asked for an order that the company furnish a sufficient number of cars; provide a sufficient number of switches and change the tracks so as to give an adequate service.

The Board gave a unanimous judgment on Mar. 8, in which the incorporation of the original company, subsequent legislation and the agreements with municipalities were fully reviewed.

On Dec. 11, 1908 the Board's engineer reported that the only permanent remedy for the complaints then made against the traffic conditions on Yonge St. was to double track through North Toronto and to substitute large double truck cars for the ones then in use. On Feb. 19, 1909, the Board not having the power, made no order for double tracking, but ordered the company, among other things, to remove the Glengrove cars then in use and substitute four large double truck cars by May 1, 1909. This order was complied with as to the cars, but an appeal to the Court of Appeal is still

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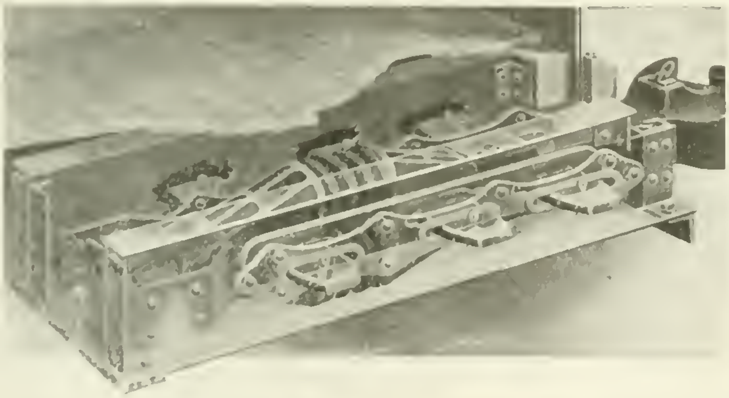

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pending as to the macadamising between the rails and 18 ins. on the outside.

The Board is still of opinion that the railway should be double tracked up Yonge St., through North Toronto, and conditions having changed, on to the Golf Links. If it had the power the Board would order this to be done, but in view of the franchise agreements between the company and the County of York, under which the company has no right to lay double track unless with the county's approval, it does not consider that it has such power.

The Board therefore orders the company to extend its Glengrove service to the golf links, to construct a sufficient number of switches and turnouts and put a sufficient number of suitable cars in commission to enable it to give a 10 minute service from April 15 to Nov. 1, and a 15 minute service during the rest of the year. The Board also thinks the traffic should be regulated so that south bound cars have right of way up to noon, the north bound cars to take the switches and that after noon north bound cars have right of way, also that the system of car dispatching which has been adopted on the Newmarket line be extended to the line between Toronto and the golf links.

◆

London Street Railway History.

The London, Ont., St. Ry. Co. was incorporated by Ontario Legislature in 1873, with a capital of $40,000, and empowered to construct, maintain and operate a street railway in the city of London and townships of London and Westminster. On Mar. 8, 1875, the city granted the company the right to construct, maintain and operate a street railway, by animal power, for 50 years from that date.

An amendment to the act incorporating the company was obtained in 1889, authorizing an increase of the capital stock to $250,000, and authorizing the issue of debentures to a like amount. In 1895 the original agreement with the city was amended, and the company was granted exclusive rights to construct, maintain and operate an electric street railway for the remainder of the 50 years, at the expiration of which, or any fifth year thereafter, the city has the right to purchase the property (except the Springbank line), on an arbitration basis by giving one year's notice in advance. This agreement was ratified by the Legislature in 1895, and in 1896 the Incorporation Act was further amended authorizing the increase of the capital stock up to $750,000, and the issue of debentures to a like amount, and that the same might be secured by mortgage upon the railway, its equipment and franchise. A mortgage was accordingly executed in 1896 to the Toronto General Trusts Co., and provides that the company shall pay off and redeem on March 8 in each of the 10 years commencing 1915, five per cent. of the debentures outstanding, so there shall be left at the expiration of the franchise 50% only of the total amount of debentures issued—the debentures being in denominations of $1,000 each, payable in gold, with interest at five per cent. per annum, payable semi-annually.

Capital and Debenture Accounts
Dec. 31, 1910.

Stocks, subscribed	$600,000.00
" paid up	552,000.00
Debentures, issued	600,000.00
" sold	575,000.00

The property consists of 33.25 miles of single track, covering about 26 miles of territory; 20.8 miles in the city and 5.2 miles out of the city, and the following buildings: one power house, capable of generating about 1,150 h.p.; one storage battery plant of 320-ampere capacity; two car houses; one car shop and machinery; one office building. Following is the equipment:—Single truck motor cars, closed 34, open 5; double truck motor cars, 5 closed, 5 open; single truck trailers, 4 open; sweeper, 1; work car and snow plow, 1; wreck car, 1; line wagon, 1.

◆

Montreal Tramways Company.

The Quebec Legislature has had under discussion for some time an application for the incorporation of a company with this title, to construct and operate an underground railway throughout the Island of Montreal, and Iles Jesus and Bizard, and other railways or tramways, and to acquire, either in whole or in part, the property, franchises, etc., of the Montreal Street Ry., the Montreal Park and Island Ry., the Montreal Terminal Ry., and the Public Service Corporation. The application was made by E. A. Robert, President of the Montreal Street Ry., F. H. Wilson, and J. M. Wilson, Montreal. The important part of the bill is that covering the absorption of the several companies mentioned, which are owned or controlled by the Montreal Street Ry. Co. Of these companies, the Montreal Park and Island Ry. was declared to be subject to the legislative authority of Canada as to capital stock and general corporate powers by chap. 84 of the statutes of 1894; the Montreal Terminal Ry. is the title given by the Dominion Parliament by chap. 76 of the statutes of 1899 to the old Montreal Island Belt Line, while the other lines are operated under acts passed by the Quebec Legislature.

Prior to the introduction of this bill the M.S. Ry. had been in negotiation with the Montreal city council for a rearrangement of its franchises, and for the adoption of a new contract with the city which would cover the whole of the lines. The question was discussed at great length between the company's representatives and the board of control, as far back as Feb. 18, and there were set out ten propositions, to which the company was asked to accede to in return for the franchise asked. As there did not appear to be any possibility of an agreement being reached, the bill for the incorporation of the new company was introduced, one of its clauses providing that in the event of an agreement as to the franchise not being reached within a certain period after its passing, the Quebec Public Utilities Commission would have power to arrange one. The negotiations were continued with the city council through its board of control, and the corporation officers opposed the passage of the bill in the Legislature. The negotiations finally resulted in an agreement by which existing contracts, with certain modifications, will be extended, the details of which are being worked out. The agreement necessitated the making of a number of amendments in the bill, which, at the time of writing (March 24) had not been passed by the Railway Committee of the Legislature.

◆

Sydney and Glace Bay Railway.

The Sydney and Glace Bay Ry., which runs between those Nova Scotia towns, 19 miles, was owned jointly by the Cape Breton Electric Co., Ltd., and the Dominion Coal Co. We are officially advised that the Cape Breton Electric Co. has secured all of the Sydney and Glace Bay Ry. Co.'s common stock, the Dominion Coal Co. taking Cape Breton Electric Co.'s common stock in exchange thus becoming a large holder in the Cape Breton Electric Co. The Cape Breton Electric Co. has taken over the Sydney and Glace Bay Ry. on a long term lease, and the latter line is now being operated with the Cape Breton Electric Co.'s railway department as one department.

The operating officials of the Cape Breton Electric Company and the Sydney and Glace Bay Ry. have been practically the same for over a year, and under the new arrangements this will be continued.

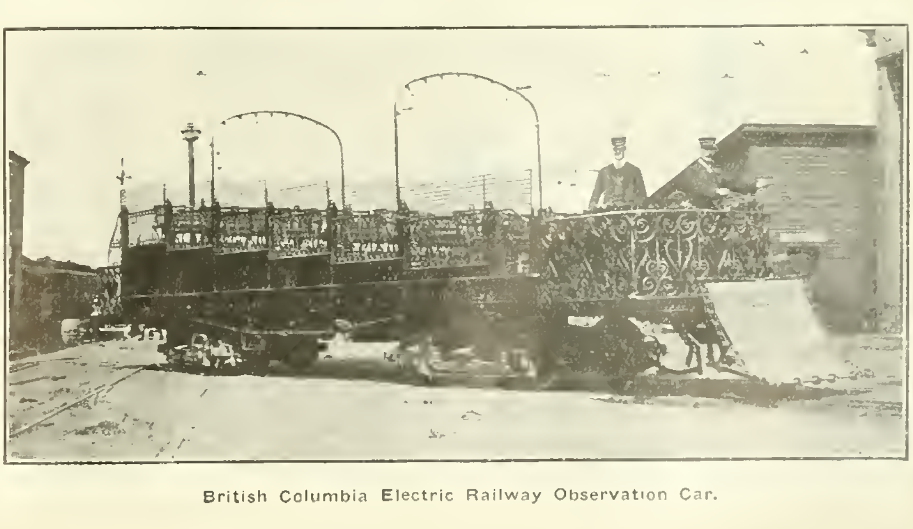
The Cape Breton Electric Co. is controlled and managed by the Stone & Webster Management Association of Boston, Mass., and has 12.5 miles of equivalent single track. Its officials at Sydney are:—H. C. Foss, Manager; W. G. Ross, General Superintendent, Purchasing Agent and Electrical Engineer; Mr. J. Bulley, Assistant Superintendent and Master Mechanic; W. P. Stubbert, Engineer of Power Station. The company does the entire electric lighting and electric railway business in Sydney, the entire electric business in North Sydney the ferry business between Sydney and North Sydney, and operate an interurban line between North Sydney and Sydney Mines. It owns $220,000 of the $415,000 outstanding first mortgage bonds and the capital stock of the Sydney & Glace Bay Ry., which is operated under a lease of 99 years from June 1, 1911.

◆

B. C. Electric Railway Observation Car.

The illustration on this page shows one of the observation cars built by the British Columbia Electric Ry. for service in Vancouver and Victoria. Following are the general dimensions, etc.:

Length over end sills	34 ft. 2½ in.
Length over bumpers	45 ft. 9¼ in.
Width overall	8 ft. 4½ in.
Height of floor above rails at front end	3 ft. 4 in
At rear end	5 ft. 11 in
Floor raised in 4 steps of 5¼ ins. each.	
Height of step from rail	15·9·9 ins.



British Columbia Electric Railway Observation Car.

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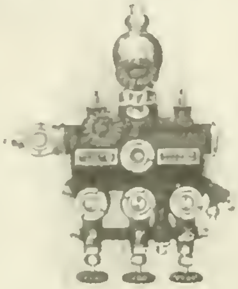

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Seating capacity	52 passengers
Trucks	27 E-1, with 33 in. wheels
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The cars are illuminated by two arches of colored lights over the centre, and there are also lights under the steps. As noted above, each car has a seating capacity for 52 passengers, but on frequent occasions knock-down chairs have to be used in the aisle. These, when not required, are stored in the front vestibule.

Last year the Vancouver car made three trips daily, leaving the corner of Robson and Granville Sts. daily at 9.30 a.m., 2 p.m., and 4 p.m., running via Granville and Hastings Sts. to the Grandview and Cedar Cottage suburban districts, to English Bay, to Stanley Park entrance, and to Kitsilano, a two hours trip for 50 cents. We are advised that when the weather was not unfavorable the car was comfortably filled. It is also often chartered by societies for evening excursions.

Electric Railway Notes.

The Montreal St. Ry., will shortly be in the market for 15 additional cars. The specification has not been settled.

The Ottawa Electric Ry. has received three p.a.y.e cars, 33½ ft. bodies, 45 ft. over all, mounted on 27-FE-1 trucks, from the Ottawa Car. Co.

P. Verner, is reported to have been appointed General Superintendent of the Grand Valley Ry., with offices at Bramtford, Ont.

The Edmonton Radial Ry., has received two p.a.y.e. cars, 28 ft. bodies, 44½ ft. over all, mounted on 27-G-1 trucks, from the Ottawa Car Co.

The Sandwich, Windsor and Amherstburg Ry. is adding six p.a.y.e. cars to its equipment; three for the Walkerville section and three for the Sandwich line.

C. F. Beams, of the Cobalt Power Co., is reported to have been appointed Manager of the Nipissing Central Ry., by the new owners. It is said that this is the only change being made.

Arrangements are being made for the operation of the Grand Valley Ry., and the Galt, Preston and Hespeler Ry., by electric power supplied from the Hydro Electric Power plant.

The new rules for the regulation of tramways, and other operation, made by the British Columbia Government, became effective Mar. 1.

A St. John's Nfld., press report states that the city council holds that the Reid Newfoundland Co. has not kept up to its contract as regards clearing Water St., and that the council started the clearing of the snow, Mar. 8, expending the deposit made by the company

Aldermann Trott, a member of the St. Thomas, Ont., city council, will act as supervisor of the municipal electric railway, for the present, consequent on the retirement of L. B. Gillett. Alderman Trott will not be a salaried officer, but an electrician wil be appointed to look after the mechanical work.

The Calgary Municipal St. Ry. is adding to its power house equipment, one 1,500 k.w. turbo-generator set with condenser, etc.; one 100 k.w. exciter and switchboards, three 1,000 k.v.a. single phase transformers, 12,000 to 2,300 volts, with switching gear.

The Mount McKay and Kakabeka Falls Ry., has ordered six Simplex self clearing cars from the Canadian Car and Foundry Co., Montreal. These cars are similar in all respects to those made by the same company for the Montreal St. Ry., which were illustrated and fully described in our Aug., 1910, issue.

The Siagara, St. Catharines and Toronto Ry. has ordered four semi-convertible, double truck, four motor equipment cars in the U.S., each 46 ft. long over all, with seating capacity for 44 persons. They will be operated on the local lines in St. Catharines and Niagara Falls, Ont.

The electric locomotive which the Guelph Radial Ry., has ordered from the Canadian Westinghouse Co., Hamilton, Ont., as mentioned in our last issue, is a 27 ton Baldwin Westinghouse locomotive of the double truck type with four motor equipment. It has a steel frame and is about 23 ft. long over sills. The electric equipment consists of four 101-B motors.

The Superior Court rendered judgment, Mar. 13, in favor of the Quebec Ry Light and Power Co., in the action relating to the running of its observation car It was contended that the company had no right to operate such a car, according to its contract with the city, but the Court held that not only had the company a right to run the car, but it could also charge a 25c. fare on it. The same case had previously been dismissed in the Recorder's Court

The Board of Railway Commissioners recently heard an application for permission to proceed against the London and Lake Erie Ry. and Transportation Co., for operating cars on Sundays, in alleged contravention of the law. In dismissing the application, the Chief Commissioner pointed out that the act referred to was a provincial one, while the company was under Dominion jurisdiction, and stated that the applicant did not require the Board's permission to prosecute the company for an infringement of the law, if such took place.

The Winnipeg Electric Ry. has increased the scale of pay to its motormen and conductors, by 2c an hour, making the schedule for the first six months, 23c.; for the second six months 25c.; for the second year, 26c.; for the third year, 28½c.; and for periods beyond three years 29c. on hour. The increase will, it is said, mean an addition of $50,000 a year to the expense. The circular announcing the increase states that in view of this increase being unsolicited on the part of the men, the directors expect the hearty co-operation of the motormen and conductors in rendering the public the most efficient and complete service possible.

The Toronto board of control, Mar. 14, considered the question of providing a motor 'bus service in the districts not served by the street railway. It was reported that, after some investigation single deck electric vehicles were best suited for the requirements, and with accommodation for 30 passengers, and suited for a speed of fifteen miles an hour, and assuming that each vehicle ran 80 miles a day, they would cost, to operate, from $15 to $20 a day, including 15% for depreciation. The matter was deferred, until some investigation into the qualities of storage battery cars had been completed.

The Pay-as-you-enter Car Corporation and the Pay-Within Car Co., have been merged and a central organization exclusively authorized to issue licenses under the numerous patents owned and controlled by the two companies has been created under the title of the Prepayment Car Sales Co., with headquarters at 50 Church St., New York City, and offices in Philadelphia and Chicago. The officers of the new company are:—President Duncan McDonald of Montreal; Vice President A. H. England, of the Electric Service Supplies Co., Philadelphia; Treasurer, H. Rowntree, of Chicago, who has invented most of the door devices controlled by the company; General Manager, T. W. Casey, formerly of the Montreal St. Ry.

NOTICE.

The General Railway Signal Company, the owners of the exclusive rights to Canadian patents No. 92323, No., 93127, No. 96256, and No. 97758, issued to Young and Townsend, and covering methods of signaling electrified railways, wishes to call the attention of all possible users of the devices and systems covered by such patents, to the fact that it is prepared to sell and furnish, at short notice, all such devices, and to install such systems upon any railway in the Dominion of Canada.

All inquiries regarding the above should be addressed to the office of the company, Room 506, Eastern Townships Bank, 263 St. James St., Montreal, Que.

Electric Ry., Finance, Meetings, Etc.

British Columbia Electric Ry.—Gross earnings for Jan., $368,754; working expenses $218,428; net operating earnings $150,326; renewal funds $29,770; net earnings $120,556; approximate income from investments $20,000; net income $140,556, against $250,274 gross earnings; $144,069 working expenses; $106,205 net operating earnings; $15,443 renewal funds; $90,726 net earnings; $16,500 approximate income from investments; $107,262 net income for Jan. 1910. Aggregate gross earnings for seven months ended Jan. 31, $2,360,402; net income $970,452, against $1,731,145 aggregate gross earnings; $764,628 net income for same period 1910.

Cape Breton Electric Co.—Gross earnings for 1910, $326,010.11; operating expenses, $170,187.23; net earnings, $155,822.88; interest and taxes, $60,134.88; balance, $81,988; dividends, preferred stock 6%, $14,040, common stock 1½%, $16,875; total dividends, $30,915; surplus, $51,073. These figures include the earnings, etc., of the line between North Sydney and Sydney, N.S., and the whole of the earnings of the Sydney and Glace Bay Ry., whereas in former years only half of the earnings of the S. & G.B.R. was included. The C.B.E. Co. now owns the entire capital stock of the S & G B.R.

Dominion Power and Transmission Co.—Following is the board for the current year as elected recently:—President, J. R. Moodie; Vice President, J. Dixon; Treasurer, J. Knox; Secretary, W. C. Hawkins; other directors, J. W. Sutherland, S. O. Greening, L. Harris, W. Southam, and Hon. J. M. Gibson.

Halifax Electric Tramway.—Railway receipts for Feb., $14,675.01, and for two weeks ended Mar. 14, $6,916.11, against $14,018.69, and $7,044.29 for same periods 1910.

A dividend of 2% for the quarter ended Dec. 31, 1910, has been declared, payable Apr. 1, to shareholders of record, Mar. 20.

Hamilton, Grimsby and Beamsville Electric Ry.—Following is the board for the current year as elected recently: President, J. Dixon; Vice President, J Dickinson; Treasurer, J. Knox; other directors, W. C. Hawkins, J. W. Sutherland, S. O. Greening and J. R Moodie.

London St. Ry.—Gross earnings, for Feb. $19,309.23; expenses $14,512.71; net earnings $4,796.52; deductions $2,205.55; net income $2,590.97, against $17,349.23 gross earnings; $13,126.91 expenses; $4,222.32 net earnings; $2,205.55 deductions; $2,016.77 net income for Feb. 1910. Aggregate gross earnings for two months ended Feb. 28, $39,905.06; expenses $29,695.21; net earnings $10,210.45; deductions $4,647.30; net income $5,563.15, against $35,712.94 aggregate gross earnings; $26,705.13 expenses; $9,007.81 net earnings; $4,647.30 deductions; $4,360.51 net income for same period 1910.

Montreal St. Ry.—Passenger earnings for Jan., $363,147.35; miscellaneous earnings $6,977.25; total earnings $370,124.60; operating expenses $239,982.64; net earnings $130,141.96; city percentage

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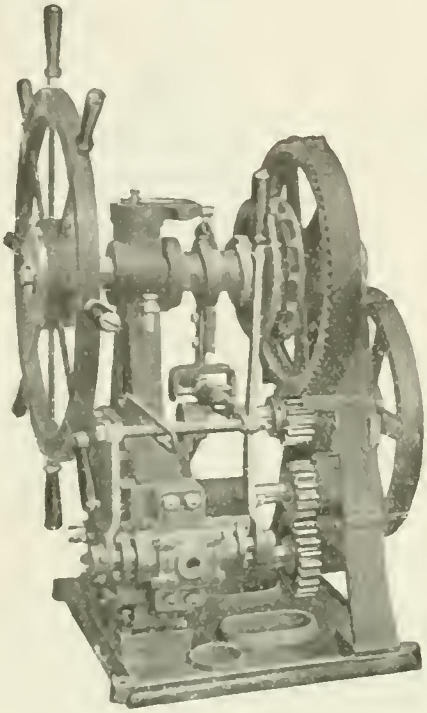

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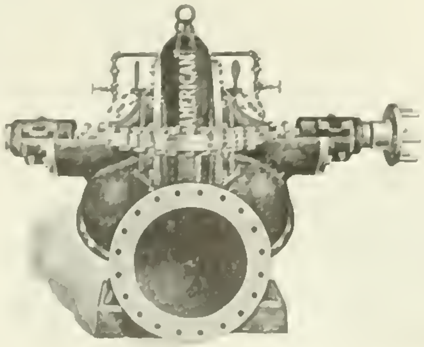

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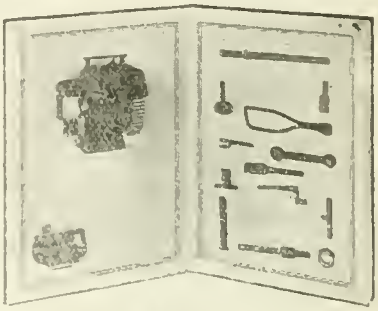

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on earnings $18,352.08; interest on bonds and loans $15,495.86; rental leased lines $607.50; taxes $4,700; total charges $39,155.44; surplus $90,986.52; expenses per cent. of earnings 64.84, against $323,045.07 passenger earnings; $2,575.89 miscellaneous earnings; $325,620.96 total earnings; $205,059.74 operating expenses; $120,561.22 net earnings; $16,863.87 city percentage on earnings; $14,273.67 interest on bonds and loans; $552.90 rental leased lines; $4,000 taxes; $35,690.44 total charges; $84,870.78 surplus: 62.98 expenses per cent. of earnings for Jan. 1910. Aggregate total earnings for four months ended Jan. 31, $1,500,184.77; operating expenses $908,383.96; net earnings $591,800.81; total charges $140,808.67; surplus $450,992.14; expenses per cent. of earnings 60.55, against $1,352,062.36 aggregate total earnings; $791,938.71 operating expenses: $560,123.65 net earnings; $132,035.28 total charges; $428,088.37 surplus: 58.57 expenses per cent. of earnings, for same period 1909-10.

Nipissing Central Ry.—D. Fasken Toronto, is representative of a syndicate which has purchased the property rights and franchises of this company, the purchase price, it is stated, being about $250,000. The company's railway extends from Haileybury to Cobalt, Ont., and a franchise has been granted for an extension to New Liskeard. The company has not earned a profit since it began operating its lines.

Ottawa Electric Ry.—Negotiations are reported to be in progress for an amalgamation of the Ottawa Electric Ry., and the Ottawa Light and Power Co.

Port Arthur and Fort William Electric Ry.—Total earnings for 1910, $143,653.92; expenditures $83,430.38; reserve for accidents, $7,352.85; total expenses $90,783.85; net earnings $52,870.68. Car mileage 567,250; gross earnings per car mile $24,959; operating expenses per car mile $14,208; net earnings per car mile, $10,251.

Quebec Railway, Light, Heat, and Power Co.—Bonds for $2,600,000 are reported to have been sold in Paris, France. The directors have declared a dividend of 1% payable April 15 to shareholders on record March 31.

Toronto and York Radial Ry.—The Ontario Legislature has authorized the council, among other things, to expropriate the section of the Toronto and York Radial Ry., from Sunnyside along the Lake Shore within the city limits. The council desired to have power to expropriate the line as far as Long Branch.

Toronto Ry.—Gross earnings for Jan. $358,844; working expenses $189,437; net earnings $169,407, against $326,708 gross earnings; $175,074 working expenses; $151,634 net earnings for Jan. 1910.

Winnipeg Electric Ry.—Gross earnings for Jan., $346,144; working expenses $188,349; net earnings $157,795, against $297,543 gross earnings; $151,197 working expenses; $146,346 net earnings for Jan. 1910.

Winnipeg Electric Ry.—Sir Wm. Mackenzie. President, on Mar. 13, submitted the following proposals to the Winnipeg city council:—The company will sell its street railway, gas, power and electric light outfit to the city as a going concern, or the company will purchase from the city 15,000 horse-power as soon as the city is in a position to deliver it, at a price which will pay interest on the city's entire investment in the municipal plant at Point du Bois on condition that the company be given the exclusive right to engage in commercial lighting.

The price at which the company would sell, added Sir William, would be on the basis of $250 a share, and it is calculated that this would amount to over $15,000.000. At a meeting of the city council, Mar. 14, the mayor referred to the proposition, and said it should be seriously enquired into. After some discussion a resolution was passed authorizing the city solicitor to apply to the Legislature for power for the city to acquire "any or all public utilities, not owned by the city." When this has been obtained the city will be in a position to submit a bylaw to the ratepayers authorizing the purchase, upon such terms as may have been arranged, of the street railway system.

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Projects, Construction, Betterments, Etc.

Aroostook Valley Electric Ry.—The application for authority to extend the line westerly to the Maine-Quebec boundary, and to acquire the C.P.R. Aroostook Jct.-Presque Isle branch, has been approved by the Railway Committee of the Maine Legislature, and the measure will become law in due course. (Mar., pg. 257.)

Bird's Hill and Springfield Ry.—The Manitoba Legislature has under consideration a measure for the incorporation of a company with this title for the building of an electric railway from St. Boniface to Bird's Hill, Man., with authority to develop water powers and to distribute electricity.

The bill before the Legislature providing for the incorporation of a company with this title provides for the building of a line to be operated by electricity, gas or gasoline from or near Winnipeg, or from St. Boniface, through St. Paul, Kildonan and Springfield municipalities, with branch lines. The provisional directors are:—N. Macgregor, St. Paul: J. W. McKinley, Springfield; S. R. Henderson, Kildonan: J. E. Meredith, A. E. Hoskin, Winnipeg.

Brandon Electric Ry.—The applicants to the Manitoba Legislature for the incorporation of a company with this title are associated with the Reese-Muir Syndicate, which in turn works in connection with the recently organized Manitoba Power Co. (Mar., pg. 257.)

Brantford St. Ry.—P. Verner, who has been appointed General Superintendent, recently stated that work had so far progressed upon the Holmedale switch that he expected it would be ready for opening early in April. Work on rebuilding the line in the city would be resumed, and it was expected to finish the work this season. (Mar., pg. 257.)

British Columbia Electric Ry.—We were recently advised that it was expected to have the new line between Vancouver and New Westminster completed and ready for operation by the end of March. The line commences at the intersection of Sixth St. and Park Drive, Grandview section of Vancouver, passes through Grandview near the intersection of Nanaimo Road and First Ave., runs through Hastings tp. and Burnaby municipality, just south of Burnaby Lake, and enters New Westminster at the Sapperton end of the city. The total mileage of this line is 9.69 miles, distributed as follows:—Vancouver city, 0.73 miles; Hastings townsite, 1.53 miles; Burnaby, 7.10 miles; New Westminster, 0.33 mile. It is intended, when the line is in operation, to begin with an hourly service and to improve it as conditions warrant. This line has been built under the Vancouver, Fraser Valley and Southern Ry.'s charter. Its completion gives the company three lines between Vancouver and New Westminster, the others being the original direct line through South Vancouver, and the long route over the Vancouver and Lulu Island Ry. and its Eburne extension.

On the old direct line, a considerable sum has already been expended on reducing gradients, and in laying a second track. The line is now a double track one as far as Keefer station, mileage 6.35 from Vancouver. It is intended to extend the second track during the present season, but just what length will be completed it is impossible to say. A portion of the line, from Highland Park station into New Westminster, has been re-located in order to avoid the heavy gradient entering New Westminster. Surveys have been completed and part of the new right-of-way cleared. This work will be carried on from time to time, but just when it will be completed cannot be definitely stated. (Mar., pg. 257.)

Campbellford, Ont.—In consequence of the fact that the C.P.R. has secured the right to build the projected Campbellford, Lake Ontario and Western Ry. on a different route from that first surveyed, the residents of Campbellford and vicinity are taking steps to have an electric railway built through Northumberland county. A charter is reported to be available, but to Mar. 24 the owners of the charter and the municipal authorities of the points interested had not been brought together.

Central Canada Ry. and Power Co.—An act passed by the Manitoba Legislature provides that the company may issue bonds for $25,000 a mile in respect of the railways authorized to be built by sec. 13, chap. 56, of the statutes of 1905, viz., from the eastern boundary of Win-

NOTICE TO INVENTORS

Inventors or others interested in life-saving devices, are hereby invited to submit to the Company, plans, rough drawings, or models of any device to be used upon the cars for the prevention of accidents.

All communications on this subject should be addressed, and plans and models submitted, to the Master Mechanic of the Company, at his office, foot of Sherbourne Street, Toronto.

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nipeg to Selkirk; from either Winnipeg or Selkirk to the Winnipeg River, and to Lake Winnipeg. The amending act gives power to build an additional line from St. Boniface northeasterly to the Winnipeg River, in tps. 17, 18 or 19, and thence to the northerly boundary of the province. The provisional directors named in the original act are: J. D. McArthur, J. Tees, J. S. Gray, W. A. Ducker, H. E. Carstens, W. M. McLeod, I. Pitblado, G. C. Mills, and A. N. McPherson. (Feb., pg. 167.)

Charlesburg, Que.—An application has been made to the municipal council of Charlesburg, Que., for a franchise for an electric railway from Domaine Lauret to Charlesburg, Que. E. Caron stated that the promoters were ready to proceed with the organization of a company as soon as a franchise was granted, and to proceed with construction as soon as letters patent were obtained.

Chatham, Wallace and Lake Erie Ry.—The Dominion Parliament is being asked to authorize the company to build the following additional lines:—From Charing Cross to Blenheim and Rondeau Harbor, Ont.; from Wallaceburg to Dresden, and on to Ridgetown and Erie Eau Park; from Dresden North to Petrolia, and on to Sarnia, Ont. It is also desired to have an extension of time for the building of other lines, for which previous parliamentary authority was obtained. (Mar., pg. 257.)

Development Co. of Canada.—The Quebec Legislature has incorporated a company with this title to build certain railways, to develop electric energy on the Ottawa River, and to use the same for the operation of its railways, or to dispose of the same. The water power proposed to be developed is the Des Quinze rapids, Pontiac county, Que. (Mar., pg. 205.)

Dunnville, Wellandport and Beamsville Electric Ry.—The Ontario Legislature is being asked to extend the time for the building of the lines previously authorized to be built, and to give power for the building of an extension from Fenwick to Welland, Ont. (Feb., pg. 167.)

Hamilton Street Ry.—As a result of a conference upon street railway matters an arrangement has been made between the company and the city council by which the tracks on Main and King St. east will be relaid during this year. The question of the extension of several of the lines is being considered, the council committee having, Mar. 16, submitted several proposals to the company. (Mar., pg. 257.)

Hamilton, Waterloo and Guelph Ry.—J. Patterson, the principal promoter of this projected electric railway, left Hamilton, Ont., Mar. 15, for London, Eng., in connection with plans for the financing of construction. (Feb., pg. 167.)

London and North Western Ry.—In passing through the Dominion Parliament the title of this company was amended by adding the words " of Canada" after railway. (Jan., pg. 71.)

Manitoba Radial Ry.—Application is being made to the Manitoba Legislature to incorporate a company with this title to build railways along the public highways or otherwise, to be operated by electricity, steam or gasoline as follows: From Winnipeg to Portage la Prairie; from Rosser southerly to Headingly, thence easterly to Winnipeg; from Winnipeg northerly to Stony Mountain, Stonewall and Balmoral. Authority is also being asked to obtain running powers over existing lines, and also to have power to run along any of the Winnipeg streets, subject to the approval of the city council. The provisional directors are: G. A. Glines, J. Dichmond, J. B. Henderson, J. O. Newton, J. C. Kyle, Winnipeg.

A company with the same title was incorporated by the Dominion Parliament in 1907, the provisional directors being: C. Hoffeman, A. Wagner, R. D. Fletcher, J. A. Munro, W. J. Donovan, Winnipeg, for the purpose of building a railway from Winnipeg to Clandeboye Bay on Lake Manitoba, thence northerly to Lundar, Man., and on to Grand Rapids, on the shore of Lake Winnipeg in Keewatin district, and a branch line through Stonewall to Lake Francis, Man. (Feb., pg. 168.)

Moncton Tramway, Electricity and Gas Co.—Surveys have been made recently by E. A. Mitchell and W. G. Ritchie for the building of the proposed electric railway in Moncton, N.B. Tenders have been invited for the grading of the permanent way, and the putting up of the overhead work, and the contracts were expected to be let Mar. 31. (Feb., pg. 168.)

The Montreal and Southern Counties Ry. has made application to the Montreal city council for permission to extend its lines on a number of streets in the city. (Mar., pg. 257.)

Moose Jaw Electric Ry.—The Saskatchewan Legislature has incorporated a company with this title. The company may not operate cars of the pay-as-you-enter type without first obtaining the city council's consent. (Mar., pg. 259.)

Niagara Frontier Electric Ry.—The provisional directors named in the bill introduced in the Ontario Legislature recently for the incorporation of a company with this title, to build an electric railway from Niagara-on-the-Lake to Fort Erie, and for other purposes, are: W. E. D. McKenzie, T. Flummerfelt, W. C. Perkins, Chippewa, Ont.; E. Garrett, Niagara Falls, Ont.; G. H. Pettit, Welland, Ont. (Mar., pg. 259.)

Niagara, St. Catharines and Toronto Ry.—The Board of Railway Commissioners has authorized the providing of interchange tracks between the G.T.R. and the N. St. C. and T. Ry., and also the crossing of three streets in St. Catharines. (Mar., pg. 259.)

Ontario West Shore Ry.—Press reports state that the control of this electric railway, which is under construction from Goderich to Kincardine, Ont., has been acquired by the C.P.R. One of the contractors working at the Kincardine end of the line is quoted as stating that he had received notice that he was to look to the C.P.R. for further orders. (Mar., pg. 259.)

Ottawa Electric Ry.—It is reported that the line will be extended down Preston St. to Dow's Lake, during the current year, and that possibly extensions in other parts of the city will be built. (Mar., pg. 259.)

Ottawa, Smith's Falls and Kingston Electric Ry.—The measure providing for the incorporation of a company with this title, which is under consideration by the Ontario Legislature, has been amended in committee by striking out the word "electric" from the title, leaving it as the Ottawa, Smith's Falls and Kingston Ry.

A map showing the projected route of the line from Ottawa to Montague tp. has been submitted for approval to the municipalities interested. The map shows a line running on the north side of the Rideau River from Ottawa, through Nanotic, Kars, North Rideau, Merrickville and Kilmarnock to Smiths Falls. A branch is proposed to be built from Smiths Falls to Perth, and plans for this, as well as for the extension to Kingston, are being prepared. (Mar., pg. 259.)

Port Arthur and Fort William Electric Ry.—The Port Arthur city council is asking the Ontario Legislature, in addition to the powers referred to in our last issue, for authority to extend the electric railway into the municipalities of Shuniah, Oliver and any other adjoining municipalities, and to authorize such municipalities to enter into agreements to aid by way of bonus or otherwise the building of such additional lines. (Mar., pg. 259.)

Quebec Ry., Light and Power Co.—Tenders were received to Mar. 25 for the construction of about 3.5 miles of double track line, extending from Beauport to Kent House Park. (Feb., pg. 169.)

Quebec and Saguenay Ry.—Tenders are under consideration for the building of the first section of this line from Cap Tourmente to the wharf at Murray Bay, Que., and it is expected that contracts will be let in a short time. Contractors were asked to submit prices for ten-mile sections of 10 miles of the line. A. H. N. Bruce, of Ottawa, has been appointed Chief Engineer, and J. F. Guay, heretofore Chief Engineer, has been appointed Manager. (Mar., pg. 259.)

Regina Electric Ry.—The Saskatchewan Legislature has passed the measures referred to in our last issue, and the city is now in a position to finance the construction of the lines.

Reference was made last year to certain contracts made with R. S. Bloins and Co. These contracts were for paving on the streets on which it was proposed to lay electric lines, but the work was not gone on with. We have been advised that the contracts will likely be renewed this year. (Mar., pg. 261.)

Rural Ry. Co. of Manitoba.—Following a decision of the courts dismissing a motion for an injunction restraining the St. Vital, Man., municipal council from entering into an agreement with the company respecting the building of an electric railway in the municipality, the council met Mar. 15 and signed the bylaw.

St. John Ry.—The committee of the St. John, N.E., city council has drafted an agreement setting out the conditions upon which the company may extend its lines to the old Loch Lomond Rd. The company's representatives state that the conditions are such that it would be impossible to operate the extension at a profit. (Mar., pg. 261.)

Sherbrooke Ry. and Power Co.—Power was turned on at the new power house Mar. 6, (Mar., pg. 261.)

Stratford Ry.—On the company's application for incorporation coming before the Ontario Legislature recently it was found that due notice by advertisement had not been given in the county of Huron, and it was recommended that the portions of the bill referring to power to build lines in that county be omitted. (Mar., pg. 261.)

Toronto Civic Street Railway.—The Toronto board of control, Mar. 10, directed the city engineer to ask for tenders for the necessary plant for use in the construction of the proposed civic car lines in the city. The estimated cost of the plant is $95,374, and the city engineer says at the end of the three years, during which construction will be in progress, the plant should be worth $38,575. The specifications, which are in course of preparation, show that there will be 160,000 cubic yards of material to be moved, and 140,000 cubic yards of material to be filled in. The work will be done by day labor. Tenders have been asked for the rails and fastenings required. (Feb., pg. 169.)

Toronto Eastern Ry.—The Board of Railway Commissioners has approved the location plans of the line through Pickering, Whitby, Whitby East and Darlington tps., and authorized building along and across certain streets in the towns of Whitby and Bowmanville, Ont. (Jan., pg. 73, and Oct., 1910, pg. 877.)

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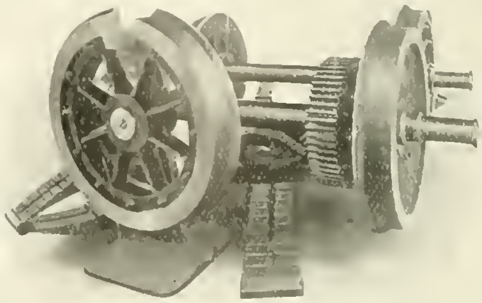

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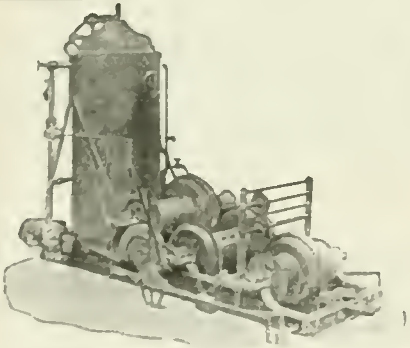

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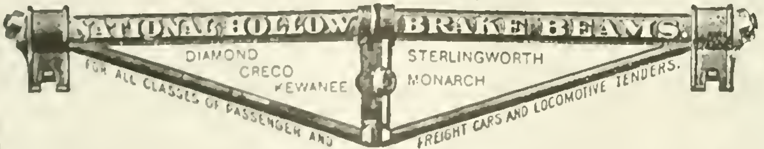
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President, W. M. Lowrie, New York.
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Grand Master, Capt. J. H. McMaugh, Toronto, Ont.; Grand Secretary-Treasurer, Capt. H. O. Jackson, 376 Huron St., Toronto.

Coast Lake and River Officers, 1911.

The following appointments have been made by the principal navigation companies engaged in Canadian navigation, for their various steam vessels and tugs, for the current year. In the first column is given the name of the vessel, in the second that of the captain, and in the third, that of the chief engineer.

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Nanoose	T. S. Guns	J. E. Hill
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Princess Beatrice	W. H. Whiteley	A. Pendola
Princess Charlotte	T. O. Griffin	J. A. Heritage
Princess Ena	C. Campbell	S. Kerasley
Princess Mary	D. Brown	J. Thaw
Princess May	J. McLeod	J. McGraw
Princess Royal	C. D. Neroutsos	J. Petticrew
Princess Victoria	P. J. Hickey	J. A. Wallace
Queen City	G. D. Robertson	B. Osbon
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C. Arthur Jaques, of G. E. Jaques & Co., General Forwarders, Montreal, who is a prominent member of the Dominion Marine Association and a large vessel owner, writes:—

"I have been a subscriber to the Railway and Marine World since its inception, and I look upon it as one of the best mediums for information that we have in our country. The information is very accurate. The different topics are expressed very clearly and correctly, and I have yet to hear of any person who does not approve of your paper."

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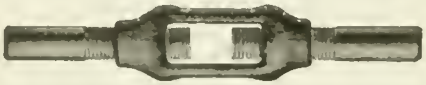

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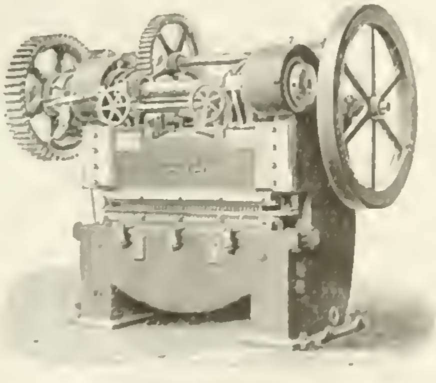

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◆

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"5. Canadian registered vessels, owned and fitted out in Canada, of 10 tons and upwards (up to 80 tons), by whatever means propelled, contained within themselves, which have been exclusively engaged not less than three months in catching sea fish, other than shell fish, salmon or shad, or fish taken in rivers, or mouths of rivers, shall be entitled to a bounty calculated on the registered tonnage, which shall be paid to the owner, or owners, provided that vessels known as steam trawlers, operating beam, otter, or other such trawls, shall not be eligible for any such bounty."

◆

Thomson Line Steamship Gerona.

The s.s. Gerona, which is being built for the Cairn Line Steamships Ltd., owners of the Thomson Line, was launched at Wallsend-on-Tyne, Eng., Mar. 4, being christened by Miss Gear, elder daughter of W. I. Gear, Vice President of the Robt. Reford Co., Montreal, Canadian agents of the line. The Gerona is built to the classification of Lloyds, 100 A.1. and will comply with all the requirements of the Board of Trade, the U. S. laws for carrying passengers and the Italian emigration laws.

She is rigged as a two-masted fore and aft schooner and has two funnels. There is a complete shelter deck from stem to stern and about it a poop, a long bridge and a topgallant forecastle. Deep web frames have been provided instead of hold beams, giving not only increased strength, but also leaving the holds clear for carrying bulky cargo such as large machinery. Amidships there will be luxurious accommodation for about 140 first class passengers, the cabins will be spacious and comfortable, a certain number of them on the bridge deck being in sets of two with a communicating door to be used by family parties. The dining saloon extends right across the vessel and is surmounted by a handsome dome. On the deck above the dining saloon is the music room. At the after end of the deckhouse on the promenade deck is the smokeroom, abaft of which is a verandah cafe. Throughout the vessel there is ample provision of fire extinguishing pipes with a complete outfit of hose pipes. Electric installation gives lighting throughout the ship and also serves the wireless telegraph apparatus.

The planning of the catering department has been carefully studied, the galleys, bakeries, pantries and storerooms all being elaborated to comprise the most improved modern appliances. There are three separate galleys, for first class passengers, for emigrants and for the crew respectively. On the shelter and in the upper 'tween decks there are berths for about 1,500 third class passengers, together with ample dining accommodation. There are hospitals for ordinary and infectious cases, an operating room and a dispensary. A special feature of the emigrants' living quarters is a complete installation of the thermotank ventilation and heating plant. The fans will be sufficient to renew the air eight times an hour. The fans can be reversed at will, so as either to draw the air out of the different parts of the ship or to inject fresh air either cool or warm. The captain, officers and engineers will have accommodation on the boat deck. The seamen and firemen, instead of having their living quarters in the forecastle, as is usual, will be more comfortably installed on the shelter deck at the after end of the vessel. The Gerona has twin screw triple expansion engines. The boilers will be worked with forced draught. She has a large cargo capacity, an ample equipment of winches and derricks being provided to handle goods expeditiously. A considerable portion of cargoes from Canada will be food suplies and refrigerated holds will be provided for these, the necessary low temperature being maintained by the carbon-dioxide process.

The addition of the Gerona to the Thomson Line will enable a fortnightly passenger service to be maintained during the season of open navigation between the north east coast of England, Southampton and Montreal, returning to London. The other vessels in the service will be the Tortona, and the Cairnrona. In the winter and early spring these vessels will be employed in carrying emigrants between Italy and Canada.

The Cunard Co. has purchased the steamships Gerona, Tortona and Cairnrona, which it will operate in Canadian service during this season, but which, we are advised, will be continued under the name of the Thomson Line.

◆

The Gael Shipping Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $27,000, and office at Montreal, to own and operate steam and other vessels, and to carry on a general navigation business on the high seas and within inland navigation. The provisional directors are: G. I. Dewar, Ottawa; W. A. Taft, Arlington, Mass.; W. H. Chandler, Newton, Mass.; J. W. Bucknam, Quincy, Mass.; W. McKissock, Brookline, Mass.

Type Z left hand

Type Z right hand

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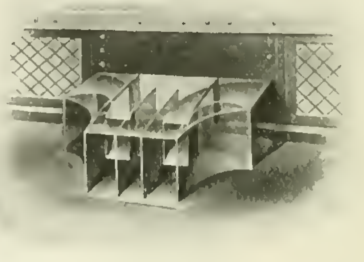

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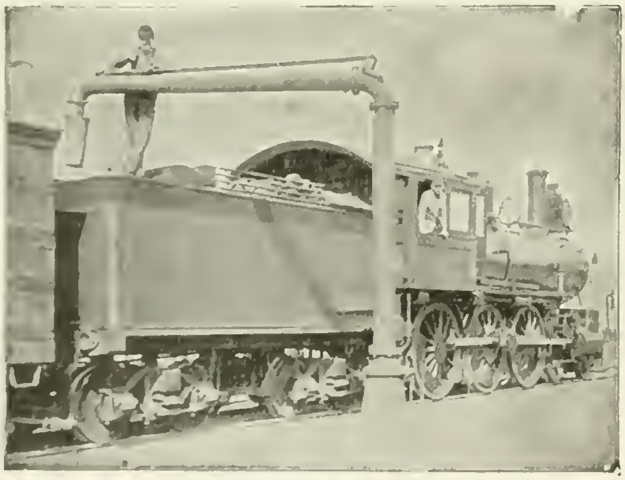

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G. T. P. Steamship Terminal at Seattle.

In our issue of June, 1910, we gave an illustration and brief description of the Grand Trunk Pacific Dock Co.'s buildings at Seattle, Wash., for the special use of the G.T. Pacific Coast Steamship Co. Following is a fuller description:—

The problem of selecting the principal terminal for the water lines in the United States was solved by the purchase of centrally located property in Seattle, Wash., and the beginning of a big dock at which to berth the steamers. The result is that the company probably has the finest wooden structure of its kind completed. As the company will handle passenger business primarily from the pier it is admirably adapted for its intended use, and the combination of stores and offices under its roof is a unique feature in structures of this kind, as space has been utilized which heretofore has produced no revenue.

In designing the pier the latest and most modern ideas of wharf construction were embodied and the structure will set the pace for pier building in the northwest. The building is fireproofed to as great a degree as possible, considering the style of material used. The adoption of a design in which wood figured as the only material was due, of course, to the fact that the dock was built on the edge of the greatest timber producing section of the country and that it was the cheapest kind of material. Figures have been brought forward to prove that trussed steel-concrete construction is the most economical in the long run, even in this section, but wood was used nevertheless.

The dock is 625 by 120 ft., although an oblique frontage gives it an inshore width of 208 ft. where most of the offices and a warehouse are located. The building is supported by creosoted piles, the specifications for which called for piles to be first growth fir, a minimum of 9 in. in diameter at the tip and 14 in. at the butt, with the penetration of oil fixed at from 1 to 1¾ in., under a 12½ lb. treatment. The length of the bearing piles varied from 55 to 90 ft., with the brace piles running up to 110 ft. in length. The bents were driven 10 ft. apart and the piles spaced along the bents at distances varying from 6 ft. centres to 3 ft. centres at the outer end, with clusters of from four to six under posts of trusses where extra loads occur. Brace piles were driven at every bent and in addition the dock is braced both laterally and longitudinally with 4 by 12 in. creosoted bracing. Caps are 12 by 12 ins., with stringers 4 by 12 ins. spaced 30 ins. apart, and 12 by 12 ins. material under posts and at the sides. The caps are drift bolted to every pile with ¾ by 22 ins. drifts and 12 by 12 ins. stringers, two lines of 10 by 12 ins. down the centre, and every third 4 by 12 ins. stringer bolted to the caps. The span of the trusses is 90 ft. and the building is extended on the north side an additional 14 ft., giving warehouse space 104 ft. wide. On the south side of the building there is an 8 ft. space to the edge of the dock, and on the north side is a 16½ ft. space where the railway tracks are located. The dock is equipped with five adjustable loading slips, worked by a worm, with the railway track carried over those on the north side by bascule bridges. At each slip is located a power plug for use of electric conveyors. The openings in the building, 8 ft. wide on each side of the slips and 14 ft. wide midway between the slips, are closed by rolling steel doors or shutters.

The passengers from the G.T.P. steamships which ply in the north coast trade are landed directly on the second floor of the dock by means of a platform supported by a pontoon which bears up the incline so that it is always at the level of the ship's deck. The incline will lead the passengers direct to the waiting and customs examination rooms and to the over-head walk to the street, which takes the passengers direct to a business avenue and does away with the usual dodging of wagons and freight cars on the water front streets.

The roof of the main warehouse is supported by a diamond truss of 90 ft. span on 12 by 12 pieces spaced 20 ft. apart, with purlins 4 by 10 in. and cross braced between trusses for wind pressure. On the ground floor inshore are six stores with an average floor space of 1,000 sq. ft. each. On the second and third floors inshore are offices, and also on the second floor suspended from the trusses down both sides of the warehouse. There is a gallery 10 ft. wide in front of these offices, leaving an open well 30 ft. wide, over the main floor. The total number of offices in the building is 69. In addition, on the sea end a tower 20 by 20 ft. and 106 ft. high above the first deck has been built, in which are four offices especially suitable for harbor officials because of the fine view of the port.

At the extreme sea end the dock is laid out to accommodate the steamboat Flyer, which carries passengers between Seattle and Tacoma. Baggage and bonded rooms are provided on the lower deck and on the second floor level are the waiting rooms, ticket office, parcel check room and restaurant, which are reached by separate inclines for incoming and outgoing passengers. A gallery for a band stand overlooks the waiting room and a stairway leads to

LIST OF STEAM VESSELS REGISTERED IN CANADA DURING JAN. AND FEB., 1911.

Name	No.	Where and When Built.	Engines, etc.			Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
Call Creek's Pride	126,796	New Westminster, B.C , 1910	Screw	8	n. h. p.	44.4	11.3	4.3	21	11	New Westminster. B.C	H. C. Northcote, Cracroft, B.C.
Camosun	121,204	Paisley, Scotland, 1905	"	124	"	192.7	35.2	14.9	1369	794	Vancouver, B.C.	G. T. Legg, M.O., Vancouver, B.C.
Chakawana	130,441	Vancouver, B.C., 1910	"	9	"	62.0	13.8	9 0	45	30	" "	F. B. Turner, Vancouver, B.C.
Cheslakee	130,309	Dublin, Ireland, 1910	"	65	"	126.0	28.1	17.0	526	261	" "	Union Steamship Co., of British Columbia, Vancouver
Dan Patch	126,824	Tancook, N.S , 1909	"	3	"	41 2	10.8	5.6	12	12	Lunenburg, N.S	R. Levy, Lunenburg, N.S
Enetai	126,949	Ballard, Wash., 1906	"	2	"	35.4	8.8	3.2	12	7	Victoria, B.C.	J. O'Donahoo, Victoria, B.C.
Fire Queen (1)	130,422	....	"	2	"	31.3	7.0	3.8	8	5	Vancouver, B. C.	A. K. Cape and H. C. Lamont, Vancouver, B.C.
Gooding	130,267	Sturgeon, Falls, Ont., 1904	Paddle	1	"	29.0	8.6	3.0	10	8	Ottawa	F. E. Clark, Sturgeon Falls, Ont.
Halley's Comet	112,194	Chatham, Ont., 1906	Screw	1	"	68.4	16.2	4.0	50	34	Chatham, Ont	H. E. Crow, Chatham, Ont.
Hazel S.	126,666	Allendale, N.S., 1910	"		"	39.6	11.4	4.7	....	....	Shelburne, N.S.	Union Fish Co., Little Harbour, N.S.
Inlet Queen	130,308	Vancouver, B.C., 1910	"	2	"	49.0	10.8	4.9	21	14	Vancouver, B.C.	H C. V. Hall, Halldene, B.C.
John R. Moore	130,233	Port Stanley, Ont., 1911	"	6	"	68.0	16.6	9.0	63	43	Port Stanley, Ont	J. R. Moore, Port Stanley, Ont.
Nellie Lyon (2)	126,229	South Rockwood, Mich., 1880	"	13	"	145.0	29.0	9.3	384	198	Sarnia, Ont	O E. Fleming, Windsor, Ont.
Nerka	126,616	Claxton, B.C., 1910	"	7	"	52.0	15.0	5.3	32	22	Prince Rupert, B.C.	Wallace Fisheries, Ltd., Vancouver, B.C.
Oldmaid	126,798	Steveston, B.C., 1910	"	20	"	35.0	10.3	5.0	14	7	New Westminster, B.C	Butterfield, MacKie & Co., New Westminster, B.C.
Prospective	130,310	Vancouver, B.C., 1910	"	16	"	62.7	11.3	8.2	66	45	Vancouver, B.C.	Progressive Steamboat Co., Vancouver, B.C.
Sadie J. Risser	126,826	Lunenburg, N.S., 1910	"	3	"	39.9	10.8	5.3	11	11	Lunenburg, N.S.	E. Risser, M.O., La Havre Islands, N.S.
St. Alice (3)	130,305	Seattle, Wash., 1890	"	11	"	74.8	16.3	5.5	56	38	Vancouver, B.C.	C. V. Henson, Vancouver, B.C.
Weasel	126,797	New Westminster, B.C., 1910	"	10	"	26.6	7.9	2.8	4	3	New Westminster, B.C	J. Henley, Chilliwack, B.C.

(1) Foreign name, Queen. (2) Foreign name, Reliance. (3) Foreign name, Blancbe.

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA DURING JAN. AND FEB., 1911.

Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners
Breton	126,927	Lotbiniere, Que., 1906	Schr.	68.8	22.5	5.8	47	Quebec, Que	Z. Castonguay, Riviere Blanche, Que.
Corporal Trim	97,258	Essex, Mass., 1860	"	68.6	19.9	7.3	57	Charlottetown, P.E.I.	P. McNutt, Malpeque, P.E.I.
Ethel McLeod (4)	103,261	Long Beach, N.B., 1896	"	76.2	26 4	7.4	96	St. John, N.B	C. E. Brewster, Harvey, N.B
Gordon M. Hollet	126,664	Shelburne, N.S., 1910	"	100.0	24.0	10.5	99	Shelburne, N.S	W. H. Hollett, Burin, Nfld.
Joseph Earle	126,825	Tancook, N.S., 1910	"	54 0	14.2	7.6	29	Lunenburg, N.S.	A. Slaunwhite, M.O., Terence Bay, N S.
Jennie E. Ritcey	126,822	Shelburne, N.S., 1910	"	112.0	25.8	10.6	97	" "	A. Ritcey, M.O., Riverport, N.S.
Lloyd George	126,821	" " "	"	108.0	26.0	10.5	99	" "	G. Himmelman, M.O., Riverport, N.S.
Marion Mosher	126,820	Lunenburg, N.S., 1910	"	105.0	25.3	10.5	93	" "	M. Rodenheizer, M.O , Lunenburg, N.S
Nobility	126,827	LaHave, N S., 1910	"	97.5	25.8	10 5	99	" "	H. Ritcey, M.O., Riverport, N.S.
P A. No. 3	130,306	New Westminster, B.C., 1910.	Scow	62.6	26.1	5.5	82	Vancouver, B.C.	W. F. Brougham, Vancouver, B.C.
P. A. No. 4	130,307	North Vancouver, B.C., 1910.	"	73.4	28.2	6.7	125	" "	" " " "
Rosie L.	126,823	Tancook, N.S., 1910	Schr.	47.6	13.2	6.7	20	Lunenburg, N.S.	G. Little, Terence Bay, N S.
Stanley & Frank	126,665	Shelburne, N.S., 1911	"	82.0	23 0	9.0	74	Shelburne, N.S.	G. T. Bond, Fortune Bay, Nfld.

(4) Formerly Rowena.

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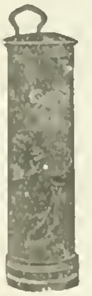

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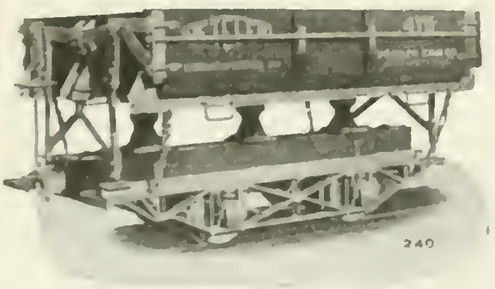

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the open air promenade and roof garden at the sea end.

Counting out the space allotted to offices, boiler and fuel rooms and a 30 by 25 ft.. garage, the deckage available for the handling of freight is about 440 by 104 ft. There are firewalls distributed freely through the dock, in which the openings are closed by automatic steel shutters of exceptional size, some being 14 ft. wide and 14.8 ft. high, with the widest 24 ft. Ship hydrants along both sides every 80 ft. and scattered on the inside of the building, furnish further fire protection.

The engineer in charge of construction and much of the planning was F. T. Lucas, who was born at Hamilton, Ont., in 1883. After passing through the Royal Military College at Kingston, Ont., and McGill University, Montreal, he graduated in 1905, spent a year in G.T.R. maintenance of way service at Allandale, Ont., then went west on G.T.P.R. mountain surveys, and afterwards was given charge of laying out the Prince Rupert, B.C., townsite and the harbor works there.—Abridged from Marine Review.

Notices to Mariners.

The Department of Marine has issued the following:

20 Feb. 23. 47. British Columbia, Vancouver island, west coast, Nootka sound, Friendly cove, lighthouse established.

21. Feb. 24. 48. Quebec, River St. Lawrence, ship channel between Quebec and Montreal, Lake St. Peter, lightship to be replaced by gas buoy.

22. Mar. 2. 49. New Brunswick, River St. John, Glenwood, light established on wharf. 50. Prince Edward Island, south coast, Hillsborough bay, St. Peters island light station, explosive fog signal, erratum. 51. Quebec, River St. Lawrence, Crane island, character of light.

23. Mar. 9. 52. British Columbia, Johnstone strait, Helmcken island, gas lighted beacon established. 53. British Columbia, Lama passage, Camp island, gas lighted beacon established.

24. Mar. 10. 54. British Columbia northern waters between Vancouver island and mainland, slack water in passes.

25. March 11. 55. British Columbia, Johnson strait, rock point, Ripple point, and West Thurlow island, day beacons erected. 56. British Columbia, Lama passage, Denny island, day beacon erected. 57. British Columbia, Seaforth channel, Regatta rock, beacon rebuilt.

26. Mar. 13. 58. British Columbia Malaspina strait, Welcome pass, and Pender harbor, existence of rocks.

27. Mar. 16. 59. Nova Scotia, south coast, Lunenburg bay, Halifax harbor, lights of gas buoys placed for testing purposes showing irregularly. 60. Nova Scotia, south coast, submarine bell attached to Sambro gas and whistling buoy not to be relied on. 61. Nova Scotia, south coast, Island harbor, buoy established north of Harbor island. 62. Quebec, Gulf of St. Lawrence, Aylmer sound, existence of a rock. 63. Quebec, Gulf of St. Lawrence, Point Peter, buoy to be established.

28. Mar. 16. 64. Ontario, Lake Huron, Goderich, bearing of range lights. 65. Manitoba, Lake Winnipeg, Gull harbor, change in character of light. 66. United States of America, St. Lawrence river, Comfort island shoal, gas buoy to be established. 67. United States of America, Lake Erie, Cleveland harbor entrance, intended change in lights.

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The Reid Wrecking Co., is building an extension of 600 ft. to its dry dock at Port Huron, Mich. The work will be carried on throughout the summer, and when completed, it is said that the dock will be large enough to accommodate any vessel operating on the lakes.

G. T. P. Coast Steamship Co.

We are officially advised that the Grand Trunk Pacific Steamship Co., has purchased the s.s. Amethyst, in England, for its Prince Rupert and Queen Charlotte Islands service, and has decided to re-name her Prince John. She was built at Bowling, Eng., in 1910, and has accommodation for 50 first-class and 150 steerage passengers. The accommodation also includes a smoke room on the main deck, opening from the shade deck, decorated in Flemish oak, a dining room occupying the full width of the vessel immediately aft, with a seating capacity of 44, furnished in mahogany with leather upholstering, lavatories, chief steward's office, pantries and galley all complete with the most modern equipment for a comfortable service. The principal first class staterooms are situated on the shade deck, all decorated in white enamel and gold, and forward of these is a circular fronted observation room enclosed by plate glass, while the texas and pilot house are placed on the deck above, which also affords ample promenade space. The machinery consists of triple expansion engines with cylinders 17, 28 and 45 ins. diar., by 33 ins. stroke, supplied with steam by single ended Scotch boilers, 12 ft. long by 12 ft. diar., and equipped with well arranged bunkers containing about 100 tons of coal. The steerage accommodation is arranged on the lower deck with entrance from the quarter deck aft of the galley. Cargo space is provided on the main deck, with capacity of about 450 tons. It is anticipated that she will make 12 knots an hour on a consumption of about 12 tons of coal a day. Her dimensions are, length 185 ft. between perpendiculars; beam, 29½ ft.; depth, 13 ft.; tonnage, 622 gross, 446 register. A number of minor changes are being made at Port Glasgow, Scotland, after which she will sail on her voyage to the coast, by way of the Horn, and it is anticipated that she will be in service some time in June.

Vessels Removed from the Register.

During Jan. and Feb., the following vessels were removed from the register, for the reasons assigned:—Steam—Ethelwold, Montreal, 533 tons, transferred to London, Eng.; Gordon McDonald, Kenora, Ont., 14 tons, sold to foreigners; Hawywa, Ottawa, 3 tons, broken up; Jean, Port Burwell, Ont., 14 tons, burnt; Lillian B., Ottawa, 3 tons, dismantled; Stella, Vancouver, B.C., 13 tons, broken up; Strathcona, Vancouver, B.C., 376 tons, broken up; W. J. Strong, Southampton, Ont., 28 tons, burnt. Sailing—Arkona, Lunenburg, N.S., 144 tons, transferred to West Indies; Audacieux, Weymouth, N.S., 99 tons, broken up; Blanche, Barrington, N.S., 24 tons, sunk; Brookside, Yarmouth, N.S., 672 tons, sold to foreigners; C. W. Bangs, Ottawa, 152 tons, broken up; Elfreda May, Shelburne, N.S., 78 tons, missing; Ellen A. Read, Yarmouth, N.S., 18 tons, broken up; Genesta, Barrington, N.S., 32 tons, wrecked; Greenwood, Shelburne, N.S., 71 tons, transferred to Newfoundland; Henry Swan, Sackville, N.S., 63 tons, broken up; J. A. McLean, Lunenburgh, N.S., 80 tons, transferred to Newfoundland; L. C. Larned, Chatham, N.B., 43 tons, broken up; Lone Star, Halifax, N.S., 29 tons, wrecked; Novelty, Lunenburg, N.S., 246 tons, transferred to West Indies; Roseway, Shelburne, N.S., 244 tons, stranded; S. A. Fownes, Dorchester, N.B.M., 123 tons, wrecked; Shannon, Lunenburg, N.S., 63 tons, transferred to Newfoundland; Thomas Beckett, Ottawa, 151 tons, broken up; Tormentor, Halifax, N.S., 15 tons, wrecked; Utowana, Lunenburg, N.S., 71 tons, transferred to Newfoundland.

Atlantic and Pacific Ocean Marine.

The Allan Line is reported to have granted increases of pay to officers of its fleet, with shore subsistence allowances, and certain privileges, not hitherto allowed.

W. McK. Roden has been appointed General Passenger Manager Allan Line Steamship Co., for Great Britain and Europe, with office at 14 Cockspur St., London, Eng.

The contract with Pickford and Black for a fortnightly steamship service from St. John, N.B., and Halifax, N.S. to the West Indies, has been renewed, subject to the concurrence of the British Government. The contractors are required to use vessels on the British register.

The s.s. Henley, which has been under charter to the Canadian Mexican Pacific Steamship Co., for some time, arrived at Vancouver, from Salina Cruz, Mexico, Mar. 6, on her last trip for that company. The next sailings are being taken by the s.s. St. Ronald.

Prior to sailing from New York, Mar. 8, for a combined business and holiday trip to Europe, Sir Thos G. Shaughnessy is reported to have stated that he expects to place orders for the building of two steamships for the Pacific service, of a tonnage of about 15,000 each.

The Canada Line, which inaugurated a steamship service between Germany and Canada, last season, will it is announced, extend the service, this year, by operating a weekly service, with six vessels. The first sailing was announced to be the s.s. Barcelona, from Hamburg, Mar. 24.

The Thomson Line's s.s. Gerona was launched at Wallsend-on-Tyne, Eng., Mar. 8. She is to be an up-to-date vessel, equipped with Marconi wireless telegraph apparatus, submarine signal system, refrigerating and cooling appliances and with a capacity for 10,000 tons of cargo and 200 saloon and 1,500 third class passengers.

The Australian Government which recently decided to withdraw from the arrangement whereby it paid a portion of the subsidy for a steamship service between Canada, New Zealand and Australia, has announced its intention to reopen the question and to negotiate for a continuance of the service to Australia.

In connection with the recent reports as to the proposed establishment of a steamship service by the C.P.R., between Canada and the West Indies, it is reported that a deputation of business men from the West Indies, is coming to Canada to interview the Government and the C.P.R. on the matter, especially with regard to subsidies, and the possible amount of business.

A London, Eng., cablegram of Mar. 1, says:—"The Cunard Steamship Co. today purchased the Cairn Line steamships operating between London and Canada under the name of the Thomson Line. In addition to the vessels now being operated, the Cunard Co. takes over three new passenger liners now in course of completion on the line, and will institute a weekly service."

On his arrival in Montreal, Mar. 9, W. T. Payne, Manager C.P.R. Trans-Pacific Steamship Service, Yokohama, Japan, is reported to have said, that rumors have been freely circulated as to what the company intends doing with regard to the Pacific service, but that it is for the management to make its announcement on this point, in its own time. He is also reported to have stated that the present service, though very good, is not of a character to do justice to the traffic and that Canadian interests should be protected by a more efficient service.

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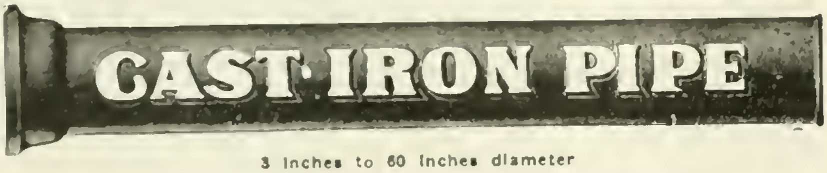

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Maritime Provinces and Newfoundland.

The Newfoundland sealing fleet, consisting of 19 vessels, sailed on its annual cruise in the Gulf of St. Lawrence, Mar. 13.

The returns for the past fiscal year of the Nova Scotia Legislature, show that $66,798, was paid in steamboat and ferry subsidies.

The P.E.I. Public Works Department received tenders, Mar. 28, for leasing any, or all of the public wharves and bridges, owned by the Government, from Apr. 1 to Mar. 31, 1912.

The P.E.I. Public Works Department received tenders, Mar. 27, for carrying passengers, baggage, vehicles, cattle, etc., across the Cranberry and Poplar Point ferries, for three years, from Apr. 1.

A petition has been presented to the Nova Scotia Legislature, from the residents of Little Harbor and vicinity, asking for an increased subsidy for transportation by water, between Port L'Hebert and Lockeport.

The French steam trawler Baleine is to be sold by public auction, to satisfy claims against her. She is of the latest type, fitted with patent steam capstans, hoisting gear and with an acetylene light plant for night work.

The affairs of the Star Line Steamship Co., Ltd., are being investigated in the New Brunswick courts, as the result of an auditor's examination of the books, which were stated to be in an unsatisfactory and deplorable condition.

The Dominion Coal Co., is reported to have chartered the Norwegian steamships Storstad and Sandefjord, and the British steamship Batiscan, for its coal service during the forthcoming season. These vessels were all built in England recently.

The Government ice breaking steamship Stanley was towed into Halifax, N.S., Mar. 12, by the Government s.s. Montmagny, with a broken propeller. It is not anticipated that the replacement can be made to enable her to resume operations before the early part of April.

A correspondent at Charlottetown P.E.I., writes us that the s.s. Earl Grey, which is now perfoming her second winter's service between Pictou, N.S., and Georgetown, P.E.I., is doing excellent work. Last winter there was but little ice but this winter it has been very heavy, and she has proved herself a good boat.

Application is being made to the New Brunswick Legislature to incorporate the Clair and Fort Kent Bridge Co. to build a bridge across the St. John River, between Clair and Fort Kent, to be not less than 24 ft. wide, with sufficient passage ways for boats, etc. Slipp and Hansom are solicitors for applicants.

A cable dispatch from England, Mar. 18, states that the Sydney, Cape Breton and Montreal Steamship Co., has been registered in London, Eng., with a capital of £70,000. Amongst those named as interested in the scheme, are E. F. and W. Roberts, Liverpool, Eng.; Bowring and Co., Liverpool, Eng., and St. John's, Nfld., and the Dominion Coal Co.

The Bridgetown Steamship Co., has been organized with headquarters at Bridgetown, N.B., to operate a vessel between Bridgetown and St. John, with calls at intermediate points. It is stated that an order has been placed in Yarmouth, N.S., for the construction of a steamship for the purpose, delivery to take place by July 15.

The N.B. Government has made an appropriation for the repair of the public wharf at St. Stephen, and it is announced that the work will be commenced as soon as the weather conditions are favorable. It is stated that the C.P.R. is also undertaking some improvement work there, and that some dredging work will be undertaken in the river.

The Eastern trust Co., and H. McInnes, trustees under the will of the late M. Dwyer, Halifax, have deposited with the Public Works Department at Ottawa, plans and description of a proposed wharf extension in Halifax harbor, from Lower Water St., 200 ft. into the harbor, thence southerly at right angles for 81 ft. 7 ins., and westerly for 200 ft., and thence northerly for 81 ft. 7 ins.

The Steamship Senlac So.'s s.s. Senlac, is being offered for sale by Wm. Thomson and Co., St. John, N.B., and, unless disposed of by private treaty, will be sold by public auction at Dalhousie, N.B., Apr. 5. She is a screw driven vessel, with engine of 66 n.h.p., capable of a speed of 11 knots an hour, and she was built at St. John in 1904. Her dimensions are, length 182.4 ft., breadth 33 ft., depth 16.1 ft.; tonnage, 1,011 gross, 615 register.

The Imperial Dredging and Construction Co., Ltd., has been incorporated under the New Brunswick Companies Act, with a capital of $40,000, and offices at Oromocto, to own and operate dredges, dredging steamers, etc., and to build wharves, docks, bridges, terminals and other shipping facilities. The provisional directors are: W. J. McMulkin, Upper Gagetown; R. B. Smith, Oromocto; H. B. Bridges, Gagetown; P. J. Smith, Blissville; and G. C. Currier, Upper Gagetown, N.B.

The Eastern Transportation Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $20,000 and office at Bathurst, N.B., to build, own and operate steam and other vessels, docks, warehouses and other terminal facilities; to carry on a general towing, wrecking and salvage business, and to carry on the business of carriers of passengers and freight, etc. The provisional directors are A. E. Loosen, O. Page, C. M. Mersereau, A. Hains and A. McLean, Bathurst, N.B.

At a recent meeting of the Dartmouth Ferry Commission, to consider the question of the provision of a new ferry steamboat, it was decided that the mayor be authorized to go to Great Britain to place a contract for the construction of a steel steamer for the service. Tenders were recently invited for a vessel, and negotiations were entered into with a British firm which submitted a tender, but the commission has been unable to satisfactorily close the contract with the firm, as the commission's plans were not acceptable to the tenderer.

The Dominion Department of Public Works is having a dipper dredge built at Pugwash, N.S., for use in the smaller bays and harbors of Prince Edward Island. The contract has been awarded to Burns and Waters, Ottawa. The dimensions are, length 65 ft., breadth 25 ft., depth 6ft., with a maximum working depth of 16 ft. The capacity of the dipper is to be one cubic yard, with a daily output of 400 cubic yards. The hull is being built of B.C. fir or white pine, except the corner posts, transom pieces, spud casing, overhead beams, engine keelsons, foundations for boom base plate and bow planking, which are of white oak. The main engines will have cylinders 8½ ins. diar by 12 ins. stroke, flat valves, locomotive type link motion and hand reversing gear to be operated from the engineer's platform The main hoisting drum is to be 2¾ ft. long between the flanges and 15 ins. diar. Deck house 47 by 17 ft., with accommodation for 12 men. The construction is being carried on under the supervision of the Department's engineers, and it is anticipated that the dredge will be ready for operation by May 7.

Province of Quebec Marine.

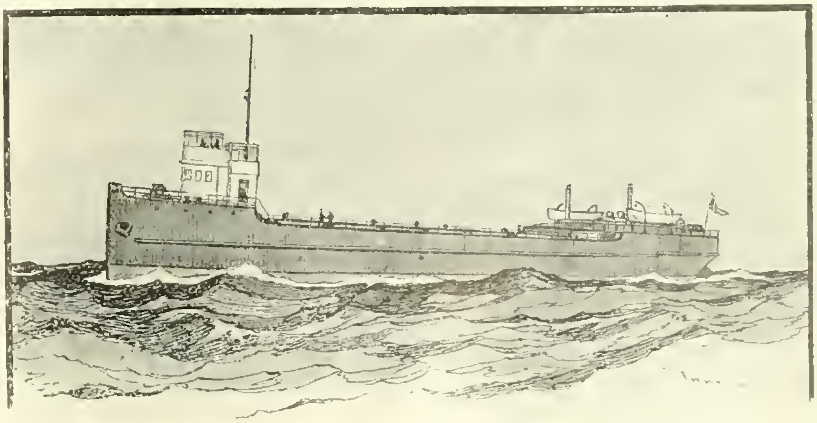
The Dominion Public Works Department will receive, to Apr. 4, tenders for the construction of a wharf at Chateauguay.

The Montreal Harbor Commissioners received tenders, Mar. 29, for the construction of a ferry wharf and approaches to be built in the harbor on the west side of St. Helen's island.

The contract for the erection of a bascule span bridge across the St. Charles River, near Quebec, has been awarded to Lemoine and Co., Montreal, at a cost of about $156,200. The bridge will be 150ft. long, and it is understood that the work will be undertaken at once.

The Marine Department has awarded the contract for the construction of a twin screw survey inspection steamboat for the St. Lawrence ship channel service below Quebec, to the Kingston Shipbuilding Co., Kingston, Ont. The vessel, which is to be named Bellechasse, will be 130ft. long, 27ft. beam and 13½ft. molded depth.

The Quebec city council ferry committee, at a meeting, Mar. 9, agreed to grant berthing facilities for the steamships Cascapedia and Gaspesian at the Champlain market wharf, at a yearly rental of $700 for the former and $400 for the latter. A letter was read from the Minister of Marine to the effect that if all parties were agreed he would



The Steamship Toiler.

The above is a somewhat crude illustration, but the best available of the s.s. Toiler, which is being built in England for the Canadian canal and lake trade, and which was fully described in our last issue.

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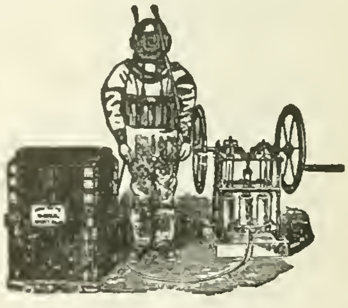

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send an expert to report on the question of horse power of the engines on the ferry boats. The matter has been referred to the city council for advice.

The steamship Canada, formerly owned and operated by the Fraserville Navigation Co., recently liquidated, which was sold by order of the Admiralty Court, has been purchased by G. A. Binet, and a considerable sum has been spent on overhauling it. It is stated that it will be placed in service on the Baie des Chaleurs route on the opening of navigation, and that the Dominion Government has promised a subsidy of $15,000 a year for two years for such service.

Judgment was delivered, Mar. 8, in a case, which was tried about six months ago, to decide whether a captain of a vessel is also entitled to act as its pilot. The case was brought by Capt. J. J. Riley, master of pilots for the port of Montreal, against Capt. B. St. Denis, for having piloted the s.s. McCormick within the pilotage district of Montreal he not being a licensed pilot within that district. It was held that the master's certificate held by Capt. St. Denis does not authorize him to act as a pilot, and he was fined $1 and costs.

It is reported that the negotiations between the interests which have undertaken to build a dry dock at Montreal, and the Dominion Government, regarding the subsidy agreement, are about concluded, and that a subsidy of 3½% for 35 years, on an expenditure of $3,000,000 will be paid, dating from the completion of the work. The floating dock, which will be of the first class, to accommodate the largest St. Lawrence vessels, will be built in England, and towed across the Atlantic. The preparation of the site at Molson's Creek is well advanced.

At a meeting of the Canadian Society of Civil Engineers, at Montreal, Mar. 16, a paper was read on the Upper St. Lawrence, its navigation and future possibilities, with regard to both navigation and power purposes, by H. Holgate, C.E. As a result of the discussion which followed, the following resolution was carried: "That the council of the Canadian Society of Civil Engineers be requested to take up and study the suggestions made that the Dominion Government be urged to make a study of the River St. Lawrence and its possibilities, and that a comprehensive report be submitted before any commitment be made by the Government for the damming of the St. Lawrence at any point, or the carrying out of any other great scheme of canal transportation, and that the council be requested to take this matter up, and, if advisable, make a report to the Dominion Government."

Ontario and the Great Lakes.

In the House of Commons, Mar. 13, an attempt to raise a discussion as to the advisability of commencing the construction of the proposed Georgian Bay Canal forthwith, was ruled out of order.

The Montreal Board of Trade, Mar. 15, decided to request the Minister of Marine to order that the St. Lawrence canals, from Montreal to the west, be opened not later than Apr. 25.

A deputation, representing the city council of Toronto, waited on the Minister of Marine, recently, and obtained a promise that the Gibraltar Point lighthouse would not be discontinued, as had been proposed.

H. Holgate, M. Can. Soc. C.E., spoke before the Canadian Club, Montreal, Mar. 6, on some facts regarding the Upper St. Lawrence, and dealt, at some length, with the international aspect of the proposed Longue Sault dam.

It is reported that the work of widening the Livingstone channel in the lower Detroit River, is to be proceeded with at once and carried on to completion, the necessary authority having been received by Col. McD. Townsend, the U.S. Engineer in charge of the work.

The disused lighthouse at the south end of the International bridge at Sault Ste. Marie, was burned, Mar. 13, by order of the U.S. Lighthouse Department, it having been rendered useless, and it being found cheaper to destroy it in this way than to remove it otherwise.

A resolution was introduced into the U.S. House of Representatives, Mar. 3, authorizing the President to investigate, as in his discretion may seem best, the advisability of entering into a treaty with Canada, providing for a deep waterway between the Great Lakes and the Atlantic, by way of the St. Lawrence River.

A press report from New Liskeard states that a company is being organized to acquire the steamboat Aileen, formerly operating on the Montreal River, and to run her in the passenger and freight traffic, between White River, North Timiskaming, Gigue and New Liskeard. The Aileen is stated to be 80ft. long, with 12½ft. beam.

In addition to the companies mentioned in our March issue, pg. 267, the following have joined the Canadian Lake Protective Association; Algoma Central and Hudson Bay Ry. Co., Forwarders, Ltd., International Steamship Co., Jaques Transportation Co., Montreal, and Great Lakes S. S. Co., Montreal, and Lake Erie S. S. Co., Western Navigation Co.

In connection with recent press reports to the effect that the Northern Navigation Co., intended to equip its vessels with wireless telegraph apparatus this year, we are officially advised that as there are no receiving stations on the Canadian side of the lakes, it would be useless to so equip the vessels at present.

The Buffalo, Lockport and Rochester Ry. will operate a steel steamboat this season, between Olcott Beach, N.Y., and Toronto, in conjunction with its electric railway having a connection with Buffalo, Lockport and Syracuse. The vessel to be utilized has a carrying capacity for 700 passengers, and formerly plied on Lake Erie between Cleveland, Ohio and Port Stanley.

The Minister of Railways and Canals, in the House of Commons, Mar. 10, speaking on the Welland canal, stated that the total cost to the present was $28,338,616. He also stated that during the session he intended to explain a definite proposal to widen and deepen the river, and said that he desired to do all he could to aid the proposed Welland and Georgian Bay canal schemes.

An order in council has been passed, changing the limits of the ferry across the Rainy River, between Ontario and Minnesota, so that they shall be co-terminous with the town of Fort Frances, and the land adjacent on the north bank of the river between the west boundary of the town and Pither's Point, where the rivers join the lake, and such points on the Minnesota side as may be arranged by competent authority there.

The Dominion Public Works Department is considering the question of inviting tenders for the construction of a dock at New Liskeard. Preliminary work in connection with the proposal has been carried out and estimates made. The matter of acquiring the Temiskaming Navigation Co.'s dock there, to incorporate with the new work, is being considered, if it can be obtained at a reasonable figure, but if not, the new dock will be built immediately to the south of it.

The Grant Cartage and Forwarding Co., Ltd., has been incorporated under the Ontario Companies Act, with a capital of $40,000 and office at Hamilton, to carry on a general business of warehousing, wharfinger, transportation and forwarding company, and act as ocean and inland carriers; to acquire similar companies, and to build, own and operate steam and other vessels, wharves, docks, and other transportation facilities. The provisional directors are, R. S. Rider, W. J. Shaw, P. Grant, C. K. Armstrong and C. Morin, Hamilton.

A deputation of Owen Sound citizens waited on the Ontario Government, Mar. 21, in support of a bill before the Legislature to empower the city to take $50,000 of stock in the company which proposes to build a dry dock and ship building plant at Owen Sound. The proposals include a dry dock 600 ft. long, 20 ft. deep, and sufficiently wide to accommodate lake vessels of the broadest beam; and the shipbuilding yards will have ways for three 600 ft. vessels, one of 400 ft., and two of 200 ft. An application has already been made to the Dominion Government for a 3% subsidy, under the act granting aid to dry docks.

At the annual meeting of the Temiskaming Navigation Co., at Haileybury, Mar. 9, a dividend of 5 per cent. was declared, making the third dividend paid. In 1908 and 1909 dividends of 10% were paid, but owing to an accident to one of the company's vessels last year the profits were considerably reduced. The steamboat Temiskaming is being partially remodelled, and some additional cabins are being placed on the upper deck. The steamboat City of Haileybury is having another deck added and the other vessels are being thoroughly overhauled. Following are the officers and directors for the current year: President, G. H. Rochester; Vice President, M. J. Malone; other directors, S. McChestney, A. Ferland, J. M. Wood, and A. E. Way.

Manitoba, Saskatchewan and Alberta.

The Hyland Navigation and Trading Co., Ltd., Winnipeg, has been granted supplementary letters patent increasing its capital stock from $200,000 to $1,000,000.

The Gainsford Coal Co., Ltd., has been incorporated under the Manitoba Companies Act, with a capital of $750,000, and office at Winnipeg, with power, among other things, to own and operate steam and other vessels, docks, warehouses, wharves, etc., and to carry on a general transportation business in passengers and freight. The provisional directors are: W. Pace, H. McLennan, J. Osborne, T. B. Campbell and W. Thorburn, Winnipeg.

The Lake Winnipeg and Red River Navigation Co., Ltd., has been incorporated under the Manitoba Companies Act, to carry on the business of carriers of passengers and freight, the construction of wharves, the acquisition and operation of steamboats and ferries, and generally such business as is usually carried on by a navigation company. The company has deposited with the Dominion Public Works Department, plans of a dock, which it proposes to build on the bank of the Red River, extending along the water frontage from Water St., to Broadway bridge.

The survey of the Saskatchewan River, which was partly done last season, is to be completed this year, and an estimate made of the cost of making the river navigable from Edmonton to Grand Rapids. The survey is in charge of L. R. Voligny, and he is reported to have stated that the work will chiefly consist of sounding and the taking of levels. What was done last year was more to see if the scheme to make the river navigable were feasible. It having been decided that it is so, an estimate of the cost is the first consideration.

B.C. and Pacific Coast Marine.

The C.P.R. recently received tenders for the erection of a wharf, including material, at Nanaimo.

The North Vancouver ferry receipts for Feb. were $4,319.40, of which $251.75 was for freight.

The Esquimalt and Nanaimo Ry. has filed plans with the Dominion Public Works Department for a proposed wharf to be built in Stamp harbor, Port Alberni, Vancouver Island.

During 1910, over 300 ocean going vessels with a tonnage of about 325,000 and 1,200 coasting vessels with a tonnage of 450,000, were reported to have called at Prince Rupert.

The Dominion Public Works Department, received tenders, Mar. 23, for the charter of a steam tug boat, to tend the elevator dredge working at the First Narrows, Vancouver.

The Department of Marine is preparing plans for the erection of a lighthouse of the first order of the re-inforced concrete type, near Cape Cook, similar to those at Estevan and Triangle.

Evans, Coleman and Evans, Ltd., has added to its docking facilities at Victoria, by taking in the Victoria Dock Co.'s wharf, adjoining the G.T.P. wharves, which are also operated by it.

Reports from Prince Rupert state that a company is being formed with the object of operating a steamship service between Canada and Chinese ports, with Prince Rupert as the Canadian headquarters.

The G.T.P. Coast Steamship Co.'s s.s. Prince George, owing to a recent breakdown of her starboard engines is being thoroughly overhauled, in preparation for the summer work and her place has been taken by the s.s. Prince Rupert.

The Grand Trunk Pacific Coast Steamship Co. has received at its Vancouver offices a model, 7ft. long, of its steamships Prince Rupert and Prince George, which is complete in every detail.

Evans, Coleman and Evans, Vancouver, announce that they have chartered the British barque Gulf Stream for a trip from Glasgow, Scotland, to Vancouver, with general cargo. She is expected to sail about Apr. 1.

The Dominion Government survey steamboat Lillooet, which has been lying up at Esquimalt, is preparing for a summer cruise in the neighborhood of Hecate Strait, where it is anticipated, she will remain until about November.

It is reported that an application will shortly be made to the Dominion Government for a subsidy for the establishment of a shipbuilding plant at Port Mann., B.C. A. P. Gillies, Toronto, and N. Thompson, Vancouver, B.C., are reported to be interested in the matter.

The C.N.R. is reported to have decided to increase the dock accommodation at Port Mann, in an eastward direction. The s.s. Fitzpatrick recently unloaded the first consignment of steel rails at the port without difficulty, a depth of 35 ft. being reported at the dock, so that the largest ocean going vessels can be accommodated.

The C.P.R. barge Robert Kerr, conveying coal for the Empress of India, was wrecked on Danger reef near Ladysmith, Mar. 5. It is stated that she will be a total loss but that the coal can be salved. The barge was built at Quebec in 1866, her dimensions being: Length 190.6 ft.; breadth, 38.1 ft.; depth, 23.7 ft.; 1,123 tons register.

The Scandia Trading Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of $25,000, to carry on a general mercantile business in the province, and in connection therewith to own and operate steam and other vessels, for the transportation of passengers and merchandise, and to act as general carriers by land and water.

The All Red Line, Ltd., which was recently incorporated under the B.C. Companies Act, as mentioned in our last issue, has acquired the s.s. Selma, formerly a steam yacht, which was purchased in England recently and taken to the Pacific coast. She has been put into service between Vancouver and Powel River points, making three trips weekly.

The Queen Charlotte Cold Storage and Black Cod Fishing Co., Ltd., has been incorporated under the B. C. Companies Act, with a capital of $300,000, to carry on a general fishing and fish dealing business, and in connection therewith to own and operate steam and other vessels, and other shipping facilities, and to act as forwarders, warehousemen, etc.

The Kitsumkallum Timber Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $1,500,000, and office at Toronto, to carry on a general lumbering business; and in connection therewith to own and operate steam and other vessels, wharves, docks, etc. The incorporators are W. J. Rooney, G. F. Morrison, R. F. Pack, P. Davies and R. Nevitt, Toronto.

The C.P.R. s.s. Charmer is being thoroughly overhauled and repaired at Victoria, prior to being replaced in the B.C. Coast Service, as a relief vessel. A considerable amount of heavier framing has been fitted, and 75 new plates have replaced the old ones. She is also being equipped with new boilers and the necessary installation is being made to convert her into an oil burner.

The B.C. Public Works Department, recently invited applications for a charter for a ferry to ply across the Skeena River, above Kitsequecla Creek, the limits to extend for 1½ miles below the Beaver dam and half a mile above Kitsequecla Creek, and the ferry to be operated whenever required between 7 a.m., and 7 p.m., each day, except Sundays. The charter will be for two years ending Mar. 31, 1913.

The North Vancouver ferry steamboat North Vancouver No. 3, was launched there, Feb. 27. She is 165 ft. long, with a beam of 45 ft. over guards, and has fore and aft compound inverted engines of about 600 h.p. It is claimed that she is the first steel hull to be built on the Burrard Inlet, others having only been put together there. It was anticipated that she would be completed and ready for service by the end of March.

The G.T.P. Coast Steamship Co. is reported to have purchased the old schooner North Bend, which it intends to alter somewhat, and utilize in carrying unwieldy cargo to little known ports, where it would not be wise to risk more expensive vessels. The North Bend was built at Coos Bay, Ore., in 1877, her dimensions being: Length, 152.6 ft.; breadth, 32 ft.; depth, 11 ft.; tonnage, 392 register. She was formerly owned by Mackenzie Bros.

The interests which have acquired the Fort George Lumber and Navigation Co., are reported to have decided to place a steamboat service on the Fraser River between Fort George and Tete Jaune Cache, this summer. The first time such a trip was undertaken, was in July last,

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The Grand Trunk Railway Company of Canada.

NOTICE is hereby given that the Ordinary General Half-Yearly Meeting of the Grand Trunk Railway Company of Canada will be held at the City Terminus Hotel, Cannon Street, London, E.C., on Thursday, the 20th April, 1911, at twelve o'clock noon precisely, for the purpose of receiving a report from the Directors, for the election of Directors and Auditors, and for the transaction of other business of the Company.

Notice is also given that a resolution will be submitted to the Meeting to assent to and accept an Act of the Parliament of Canada, entitled "The Grand Trunk Act, 1911," and to authorize the Directors to exercise the powers conferred by the said Act.

Notice is also given that the Transfer Books of the Company in London and Montreal will be closed from Saturday the 18th day of March, to the day of the Meeting, both days inclusive.

By Order,

Alfred W. Smithers, Chairman.
H. H. Norman, Secretary.

Dashwood House, 9 New Broad
Street, London, E.C.
March 10th, 1911

CITY OF TORONTO

TENDERS WANTED

For Construction Equipment.

Separate or bulk tenders, on prescribed forms, will be received, by registered post only, addressed to the Chairman of the Board of Control, City Hall, Toronto, Canada, up to noon on Tuesday, April 11th, for the delivery of the following:—

(1) Two (2) full circle swing traction steam shovels, one and a quarter (1¼) yard dipper.
(2) Six (6) saddle tank locomotives, 36 in. gauge.
(3) Forty (40) four yard (4 yd.) dump cars, or fifty-four (54) three yard (3 yd.) dump cars, 36 in. gauge.
(4) Four (4) double track flat cars, 36 in. gauge.
(a)
(5) Two hundred (200) tons 30 lb. steel rail.
(b)
Twenty-four (24) No. 5 switch leads.
(c)
Seventy-five (75) kegs of spikes.
(d)
Eighteen hundred (1800) pair of fish plates.
(d)
Twenty (20) kegs bolts and nuts.

Envelopes containing tenders must be plainly marked on the outside as to contents.

Specification and form of tender may be obtained upon application from Department of Railways, Bridges and Docks, City Engineer's Office, Toronto.

The lowest or any tender not necessarily accepted.

G. R. GEARY (Mayor),
Chairman Board of Control.
City Hall, Toronto, March 27th, 1911.

NICKEL
THE CANADIAN COPPER COMPANY
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when Capt. J. H. Bonser took the steamboat Fort George beyond the Grand Canyon, to Tete Jaune Cache, with ten tons of freight and 18 passengers, without encountering any special difficulties.

The North Vancouver Ferry Co.'s ferry boat which was recently launched there, was given a trial trip, Mar. 14, when everything passed off satisfactorily.

The Columbia River Lumber Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $5,500,000, and office at Toronto, to conduct a general lumbering and timber business, and in connection therewith to own and operate vessels of every description, wharves, docks, piers, etc. The incorporators are, F. H. Phippen, K.C., G. G. Ruel, G. F. Macdonnell, R. H. M. Temple and R. P. Ormsby, all of whom are connected with the Canadian Northern Ry. legal department, Toronto.

The Public Works Department's twin screw bucket dredge, no. 508, which was recently built at Glasgow, Scotland, and ordered through John Reid and Co., Montreal, arrived at Victoria, Mar. 9, and created considerable interest there on account of her somewhat strange appearance. She sailed from Glasgow, Nov. 16, 1910, and maintained a speed of about 6½ knots an hour, calling at seven ports for coaling and supply purposes. The machinery is of the latest type, each bucket having a capacity of 28 cub. ft., while the dredge will be able to handle about 1,200 tons an hour and dredge to a depth of 50 ft.

The Dominion Public Works Department has awarded a contract to the Wallace Shipyards Co., North Vancouver, for the construction of a steel dredge tender, to be attached to the new dredge, which recently arrived on the coast from Scotland, and which is to be used in dredging at the First Narrows. She is to be named Trojan. Another dredge tender, to be named Achilles, is, at present, under construction, and it is anticipated that she will be ready for operation by the end of June, in connection with the dredge Ajax, replacing the tender Petrel. A third tender, gasoline driven, to be named Satellite, for the dredge King Edward, is also being built at Vancouver.

We are officially advised that the G.T.P. Coast Steamship Co., which recently purchased the Albion Iron Works site at the foot of Westminster Ave., Vancouver, with a water frontage of about 470 ft., will proceed rapidly with the carrying out of the improvements contemplated, which include wharves with accommodation for vessels of any tonnage, and warehouses fully equipped for the expeditious handling of passengers and freight. The plans for this work are being prepared, and the erection of a suitable terminal building, with offices and stores, with railway and steamship offices, waiting rooms, ticket offices, etc., fronting on the end of Westminster Ave., is also under consideration, but no plans have, as yet, been undertaken.

The Northern Navigation Co., of Vancouver's steamship British Empire, which is laid up at St. Vincent, owing to damage sustained while on her way from England to Vancouver, will, it is reported, have to await the arrival of new parts to replace the defective machinery, from England. The company recently purchased two steamships in England, one of 1,200 tons, and one of 800 tons carrying capacity. The latter one is the British Empire, which left Liverpool, Jan. 21, but, owing to the delay, it is expected that the former vessel will arrive first. The British Empire, on her arrival, will be put on the run between Prince Rupert and Vancouver, in conjunction with the S.S. Cetriana, and the other vessel will be operated between Vancouver, Queen Charlotte, Portland Canal, Ketchikan and Skagway.

The C.P.R. tow car float, which is to be operated in the Proctor-Kootenay Landing service, as mentioned in our February issue, is being built at the Polson Iron Works, Toronto, and on completion, it will be taken to pieces and shipped to Nelson, re-erected there and completed for launching. It will be built entirely of steel, and be of the following dimensions: length, 224 ft.; beam 42 ft.; depth 7¾ ft. It has no sheer, but the beams are cambered, bilges rounded with 18 ins. radius, channel floors and angle side frames and beams, plating, generally ⅜ in. thick and all seams joggled, thereby avoiding liners for the outside strakes. The longitudinal strength is maintained by two longitudinal bulkheads, running all fore and aft, and three angle and plate trusses. There are also nine transverse bulkheads; all bulkheads are water tight and sub-divide the hull into 30 separate water tight compartments. Three tracks of rail are to be laid on the deck, resting on steel casting stools about 4 ft. apart. The capacity of the float will be 18 loaded freight cars. The weight of the total shipments will be about 500 tons, and it is expected to be completed about the end of July.

Northern Navigation Co. Ltd.

Very full particulars of the terms under which Jas. Playfair, of Midland, Ont., and his associates proposed to acquire control of this company, which has its headquarters at Collingwood, Ont., were given in our last issue. The offer of 125 for the stock met with the approval of a considerable majority of the shareholders. On March 12 some 7,600 shares out of 10,000 had been deposited in the bank in accordance with the offer, and the buyers had in addition secured considerable stock by buying in the market, so that they now have control of over 90% of the total capital.

Cheques for the stock deposited in the bank were mailed to the shareholders March 20, with interest at 6% on par value from Dec. 31 to Mar. 18. Some of the shareholders have objected to interest being paid only on the par value of the stock, as the N.N. Co.'s directors' circular apprising them of Mr. Playfair's offer and advising its acceptance said that it was at "the uniform price of $125 per share, together with interest thereon at the rate of 6% from Dec. 31, 1910, to date of payment." We understand that the balance of interest on $125, instead of $100, is to be paid.

The last list of shareholders prepared on Jan. 16 showed a total of 358 shareholders. The directors' holdings were as follows:—W. J. Sheppard, President, 270 shares; H. Y. Telfer, Vice President, 85; C. E. Stephens, Secretary Treasurer, 40; H. B. Smith, 100; F. A. Lott, 77; C. D. Warren, 20; Hon. J. S. Hendrie, 50; W. D. Matthews, 40; W. E. Davis, 10. The Manager, H. H. Gildersleeve, held 190. The following were the other principal individual holdings of 100 shares and over, the addresses being Toronto, unless otherwise mentioned:—Estate H. C. Hammond, 350; S. F. McKinnon, 200; W. H. Knowlton, 198; Jas. Henderson, 100; E. W. Langley, 100; E. B. Osler, 100; F. F. Telfer, Collingwood, 100; R. W. Leonard, St. Catharines, 100; T. McNamara, Peterboro, 100.

The brokers and banks having 100 shares in their names were:—Osler and Hammond, 742; Colonial Investment and Trust Co., 724; Bank of Nova Scotia, 185; Imperial Bank, 158; National Trust Co., 137; Union Bank, 136; Manufacturers Life Assurance Co., 115; Bank of Hamilton, 100; Merchants Bank, 100.

At a meeting of the N.N. Co.'s board in Toronto, Mar. 24, all the directors retired except W. E. Davis, P.T.M. Grand Trunk Ry., and H. B. Smith, Owen Sound, and it having been decided to increase the directorate from 10 to 11, the following were also elected:—President, Jas. Playfair, Midland, Ont.; Vice President, J. R. Binning, Manager Furness, Withy and Co., Ltd., Montreal; Secretary, F. A. Magee, Hamilton, Ont. Other directors: J. E. Dalrymple, Assistant Freight Traffic Manager, G.T.P.R., Winnipeg; E. Bristol, M.P., Toronto; W. G. Morden, director Canada Securities Corporation, Montreal; T. P. Birchall, General Manager Canada Securities Corporation, Montreal; H. W. Richardson, vessel owner, Kingston, Ont.; F. F. Pardee, M.P., Sarnia, Ont. H. H. Gildersleeve was reappointed Manager, and C. A. Macdonald, heretofore Assistant Manager, was appointed Treasurer and Assistant Manager.

It was decided to invite tenders for an additional vessel to comply with the G.T.R. Co.'s request that another one of the Hamonic type be place on the Lake Huron-Lake Superior run.

As stated in our last issue, Lord Furness, of Furness, Withy and Co., is largely interested in the purchase of the N.N. Co.'s stock, and the others associated in it with Mr. Playfair are principally in Montreal. The financial arrangements were carried through by the Canada Securities Corporation.

While a merger between the Northern Navigation Co. and the Inland Lines Ltd., of which Mr. Playfair is President, has been discussed, nothing appears to have been definitely settled, but it is probable that a holding company to control them may be decided on. In this connection a larger merger, to include the Richelieu and Ontario Navigation Co., is also much talked of.

Welland and Georgian Bay Canals.

In referring to inland marine transportation in the House of Commons, Mar. 10, the Minister of Railways said, while Canada must of necessity increase her railway facilities, she must not lag behind in keeping her waterways transportation as fully developed as possible. It was a curious coincidence that the greater the increase in railway traffic the greater the increase in canal and waterbourne traffic. That arose from the fact that the volume of traffic is greater and that the regulating force of the waterways on the rates of railways attracts traffic to those particular routes that are so governed. Following is a statement of tons of freight passed through the various canals during the years 1909 and 1910:—

	1909.	1910.	Increase.
Sault Ste. Marie	27.861.245	36.395 687	8.534.442
Welland	2.025.951	2.326.290	300.399
St. Lawrence	2,410 629	2.760,752	350.123
Chambly	752.117	669,299	82 818
Ottawa	336 938	385.261	48.322
Rideau	91.774	134.881	43.107
St. Peter's	78.850	85.951	6,101
Murray	102 291	177.941	75 650
Trent Valley	59,952	46 263	13.699
St. Andrews	.....	8.283	8,283
Total	33 720,748	42,990.608	9 269,860

1901 5,665,259
1910 .... 42,990.608

Increase for 10 years....... 37,325,349 tons.
Equal to 660 per cent.

If we are to continue to have this traffic, he went on, we must develop this branch of our transportation system. The figures show that traffic on these waterways has increased more rapidly than the railways, of which they are the regulators, and consequently, if Canada is to maintain her hold on the carrying trade she must be alert to the greater improvement of her waterways.

In connection with the Welland Canal, he gave a detailed description of the present canal and a statement of its total cost, and went on to say that while surveys for improvements had been in progress for some years, it was

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AMALGAMATION NOTICE.

NOTICE is hereby given that a duplicate original of an agreement between the Canadian Northern Railway Company and the Edmonton and Slave Lake Railway Company, dated 4th January, 1911, amalgamating the said companies under the name of the Canadian Northern Railway Company, as sanctioned by the Governor General in Council under the provisions of section 361 of The Railway Act, was filed in the office of the Secretary of State of Canada on the 20th day of February, 1911. the Secretary of State of Canada on the 20th day of February, 1911.

Toronto, 21st February, 1911.

GEO. F. MACDONNELL,
Assistant Solicitor.

The Parry Sound Lumber Co.
Limited
1315 Traders Bank Bldg., Toronto.
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only within the last two or three years that there had been any great activity shown. Surveys had been made in order to find, if possible, a route for a better and bigger canal, if it is deemed better to build a new one rather than to deepen the old one. He could not define the policy of the Government on this matter, more especially as to the time at which any work would be done, but he could say that three routes had been surveyed, and since Oct. 8, 1910, survey work had been practically confined to the third route, and the location had been determined and plotted on the plan. This route commences at Lake Erie, east of Morgan's point, thence across the marsh to Chippewa Creek, east of Marshville, thence curving to the west in the vicinity of Boyle, through the divide by a deep cut to the rocky gorge on Twenty Mile creek, near Jordan. Borings had been made to rock between Lake Erie and Boyle, and another boring machine was being used in determining the surface of the rock in the gorge between Jordan and Lake Ontario. The starting point on Lake Erie for this route would be several miles from Port Colborne, and he would say, personally, that the advantages of this route would have to be very great to justify the Government in giving up the work done at Port Colborne. Before finality was reached upon the matter the Government would gather the best opinions upon the subject.

It had been stated that the Georgian Bay Canal was the route which should be developed. That project did not come before his department, but he believed that it would be in the interests of Canada from one end to the other to enter upon the construction, not only of the Georgian Bay Canal, but also of a new Welland Canal, at a not very distant date. He believed that no greater interest would accrue from any investment that the people could make than would result from the development of these two waterways.

◆

The Progressive Steamboat Co. recently ordered new machinery in England for its tug Progressive, the displaced engines being transferred to the recently built tug Prospective. The latter, which was launched at False Creek, is 72 ft. long, with 17 ft. beam.

The Vancouver Insurance and Vessel Agency, Ltd., has been incorporated under the B.C. Companies Act, with a capital of $50,000, to carry on a general insurance business and vessel agency; to own and operate steam and other vessels, wharves, docks, etc., and act as wharfingers, warehousemen and general carriers.

The Hastings Mill Co.'s steam tug Haro, which has been built at Vancouver and recently put into service towing log booms for the company, is of the following dimensions. length over all, 116 ft.; beam, 24¾ ft.; depth, molded, 13½ ft. She has a keel 16 by 18, all in one length, and clamp streak 9 by 17 by 95 ft. long, all in one piece. She is equipped with triple expansion engines, built in Glasgow, Scotland, of 300 n.h.p., supplied with steam by a Scotch marine boiler at 180 lbs. pressure.

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J. T. Gardner ....Chicago, Ill.
Hart-Otis Car Co., Ltd.........Montreal.
The Males Co., ... Cincinnati, O.
Ottawa Car Co., Ltd.............Ottawa.
Pay-As-You-Enter Car Co....New York.
Preston Car and Coach Co., Ltd..Preston.
Russel Wheel & Fdry Co...Detroit, Mich.
Western Wheeled Scraper Co. Aurora, Ill.
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American Vanadium Co....Pittsburg, Pa.
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Russel Wheel & Fdry Co...Detroit, Mich.
Standard Steel Works Co..Philadelphia, Pa.
Castings, Brass
Canadian Bronze Co. ....Montreal.
Canada Iron Corporation, Ltd...Montreal.
Kerr Engine Co. ....Walkerville, Ont.
Lumen Bearing Co.....West Toronto, Ont.
Tallman Brass & Metal Co., Ltd.Hamilton.
Castings, Car
Am. Brake Shoe & F"dry Co., Mahwah, N.J.
Canada Iron Corporation, Ltd...Montreal.
Russel Wheel & Fdry.. Co..Detroit, Mich.
Castings, Iron
Allis-Chalmers-Bullock Ltd. ....Montreal.
Canada Iron Corporation, Ltd...Montreal.
Kerr Engine Co..........Walkerville, Ont.
Russel Wheel & Fdry.. Co..Detroit, Mich.
Castings, Iron and Steel
Am. Brake Shoe & F"dry Co., Mahwah, N.J.
Castings, Malleable
Taylor & Arnold ....Montreal.
Castings, Manganese Steel
Lumen Bearing Co,....West Toronto, Ont.
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Castings, Steel
American Vanadium Co....Pittsburg, Pa.
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Nova Scotia S. & C. Co., New Glasgow, N.S.
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Allis-Chalmers-Bullock Ltd. ....Montreal.
The American Well Works...Aurora, Ill.
Canadian Rand Co. ....Montreal.
The Holden Co., Ltd............Montreal.
John Inglis Co., Ltd. ....Toronto.
Concrete Mixers and Rock Crushers
F. H. Hopkins & Co............Montreal.
Mussens, Limited ....Montreal.
Contractors' Supplies
American Hoist & Der. Co.St. Paul Minn.
F. H. Hopkins & Co............Montreal.
Rice Lewis & Son................Toronto.
Peteler Car Co. ......Minneapolis, Minn.
Russel Wheel & Fdry.. Co..Detroit, Mich.
Western Wheeled Scraper Co..Aurora, Ill.
Williams & Wilson, Ltd .... Montreal.
Conveyors, Coal and Ash
Babcock & Wilcox, Ltd.........Montreal.
Williams & Wilson, Ltd ....Montreal.
Copying Presses
James Smart Mfg. Co.....Brockville, Ont.

Couplers, Car and Locomotive
Canadian Car & Foundry Co...Montreal.
McConway & Torley Co....Pittsburg, Pa.
Montreal Steel Works, Ltd.....Montreal.
Taylor & Arnold ....Montreal

Couplers, Steam
Consolidated Car Heating Co., Albany, N.Y

Cranes
Brown Hoisting Machinery Co..Cleveland.
Northern Engineering Wks..Detroit, Mich.
Williams & Wilson, Ltd ....Montreal.

Cranes, Electric
Babcock & Wilcox ....Montreal.
Dominion Bridge Co. ....Montreal.
Mussens, Limited ....Montreal.
Northern Engineering Wks, Detroit, Mich.

Cranes, Locomotive
American Hoist & Derrick Co., St. Paul, M.
The Males Co., ... Cincinnati, O.

Cranes, Wrecking
Mussens, Limited ....Montreal.

Crowbars
B. J. Cogblin & Co..............Montreal.

Curtains and Fixtures, Car
The Holden Co., Ltd............Montreal.
Preston Car & Coach Co...Preston, Ont.

Cuts
Acton Burrows, Limited ....Toronto.

Cylinders
American Vanadium Co....Pittsburg, Pa.

Derricks
American Hoist & Derrick Co., St. Paul, M.
M. Beatty & Sons ....Welland, Ont.
Mussens, Limited ....Montreal.

Derricks, Car
American Hoist & Der. Co.St. Paul, Minn.

Diaphragms, Vestibule
Guilford S. Wood....... ......Chicago, Ill

Dies
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co. ......Hespeler, Ont.

Ditchers
American Hoist & Der. Co St. Paul, Minn.
M. Beatty & Sons ....Welland, Ont.

Diving Outfits
John Date ....Montreal.
Mussens, Limited ....Montreal.

Doors, Steel Rolling
Mussens, Limited ....Montreal.

Door Signs
Acton Burrows, Limited ....Toronto.

Draft Gear
The Holden Co., Ltd............Montreal
McCord & Co. ....Chicago, Ill.
Standard Coupler Co.....New York City.
T. H. Symington & Co.....Baltimore, Md.

Draughtsmen's Supplies
John A. Hart & Co ....Winnipeg

Dredges
M. Beatty & Sons ....Welland, Ont.
Polson Iron Works, Ltd.........Toronto.

Drills, Air
Canadian Rand Co...............Montreal.

Drills, Flat Twisted
Cleveland Punch & Shear Wks., Cleveland.

Drills, Radial
London Machine Tool Co., Ltd., Hamilton.

Dry Goods
The Hudson's Bay Co.....................

Dump Cars, Contractors'
Dominion Equip. & Supply Co., Winnipeg
F. H. Hopkins & Co............Montreal.
Peteler Car Co. ......Minneapolis, Minn.
Western Wheeled Scraper Co..Aurora, Ill.

Dump Cars, Hand
Meaford Wheelba'ow Co., Ltd., Meaf'd, Ont.

Dynamos
Northern Electric & Mfg. Co.....Montreal

Dynamo and Electric Castings
Am. Brake Shoe & F'dry Co., Mahwah, N.J.

Economizers
Babcock & Wilcox, Ltd.. ....Montreal.

Electric Apparatus
Allis-Chalmers-Bullock Ltd. ....Montreal.
Chapman & Walker, Ltd........Toronto
Northern Electric & Mfg. Co.....Montreal.

Electric Car Route Signs
Acton Burrows, Limited ....Toronto.
Preston Car & Coach Co...Preston, Ont.

Electric Light Plant
Allis-Chalmers-Bullock Ltd ....Montreal

Elevators, Grain
John S. Metcalf Co. ....Chicago, Ill.

Enameled Iron Signs
Acton Burrows, Limited ....Toronto

Engines, Automatic
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S
Russel Wheel & Fdry Co. Detroit, Mich

Engines, Corliss
Allis-Chalmers-Bullock Ltd ....Montreal.
John Inglis Co., Ltd. ....Toronto.
Robb Engineering Co., Ltd. Amherst, N.S

Engines, Gas
Allis-Chalmers-Bullock Ltd ....Montreal
Williams & Wilson, Ltd ..... .Montreal

Engines, Gasolene
Canadian Fairbanks Co., Ltd ..Montreal.
Ontario Wind Engine & Pump Co. Toronto.

Engines, Hoisting
Allis-Chalmers-Bullock Ltd. ....Montreal.
American Hoist & Derrick Co., St. Paul, M.
M. Beatty & Sons ....Welland, Ont.
Dominion Equip. & Supply Co., Winnipeg.
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Russel Wheel & Fdry. Co..Detroit, Mich.
Williams & Wilson, Ltd ....Montreal.

Engines, Pumping
John Inglis Co., Ltd. ....Toronto.

Engines, Stationary and Marine
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

Engines, Stationery, Appliances
Nathan Manufacturing Co......New York.

Engines, Steam
Allis-Chalmers-Bullock Ltd. ....Montreal.

Engineers, Consulting
Alfred Lovell ....Philadelphia, Pa.

Explosives
Curtis & Harvey (Canada) Ltd...Montreal

Express Office Signs
Acton Burrows, Limited ....Toronto.

Fencing
Owen Sound Wire Fence Co., Ltd., O'n S'd.

Ferro-Vanadium
American Vanadium Co. ..Pittsburg, Pa.

Flags
The Hudson's Bay Co.....................

Flour
The Hudson's Bay Co.....................

Forgings
American Vanadium Co. ..Pittsburg, Pa.
Canadian Car & Foundry Co...Montreal.
Cleveland City Forge & Iron Co., Cleveland.
Crossen Car Mfg. Co........Cobourg, Ont.
Nova Scotia S. & C. Co., New Glasgow, N.S.
Standard Steel Works Co., Philadelphia, Pa.
Steel Co. of Canada, Ltd. ..Hamilton, Ont.

Foundry Appliances
Goldschmidt Thermit Co. ....Toronto.
Ont. Wind Eng. & Pump Co., Ltd., Toronto.

Frames, Steel for Cars
Canadian Ry. Equip't Co., Welland, Ont.

Frogs
Canadian Ramapo Iron Wks.Niagara Falls.
Johnson, Wrecking Frog Co..Cleveland, O.
Peteler Car Co. ......Minneapolis, Minn.

Furnaces, Corrugated
Continental Iron Works....Brooklyn, N.Y.

Furnaces, Oil
Railway Materials Co. ....New York.

Furnaces, Shop
Railway Materials Co. ....New York.

Fuse Batteries
Curtis & Harvey (Canada) Ltd...Montreal

Fuse Detonators
Curtis & Harvey (Canada) Ltd...Montreal

Fuses, Electric
Curtis & Harvey (Canada) Ltd...Montreal

Gaskets
The Holden Co., Ltd............Montreal.
McCord & Co. ....Chicago, Ill.

Gates
Owen Sound Wire Fence Co., Ltd., O'n S'd.

Gates, Crossing
The N. L. Piper Ry. Supply Co...Toronto.
Whyte Railway Signal Co. ....Toronto

Gauge Cocks
Nathan Manufacturing Co......New York.

Gauges, Locomotive
Taylor & Arnold ....Montreal.
Utica Steam Gauge Co...........New York.

Gauges, Water
Nathan Manufacturing Co......New York.

Gears
American Vanadium Co. ..Pittsburg, Pa

Generators, Electric
Dorner Railway Equip. Co....Chicago, Ill
Northern Electric & Mfg. Co.....Montreal.

Graders and Ditchers
Western Wheeled Scraper Co ..Aurora, Ill.

Grates, Shaking
Babcock & Wilcox, Ltd..........Montreal
Polson Iron Works, Ltd.........Toronto.

Groceries
The Hudson's Bay Co.....................

Hammers, Cast Steel
American Brake Shoe & Fdry Co.Mahwah.
James Smart Mfg. Co....Brockville, Ont.

Handcars
Canadian Fairbanks Co., Ltd...Montreal.
Crossen Car Mfg. Co.......Cobourg, Ont.
Dominion Equip. & Supply Co., Winnipeg.
F. H. Hopkins & Co............Montreal.
Mussens, Limited ....Montreal.
Rice Lewis & Son...............Toronto
Whyte Railway Signal Co. . ...Toronto

Hardware
The Hudson's Bay Co.....................
Rice Lewis & Son................Toronto.

Hats
W. H. Coddington .. Hamilton, Ont.

Headlights
Commercial Acetylene Co.........Toronto.
The N. L. Piper Ry. Supply Co...Toronto.
Pyle National Elec. Headlight Co..Chicago.

Headlinings
Crossen Car Mfg. Co ......Cobourg, Ont.

Heaters, Feedwater
Robb Engineering Co., Ltd .Amherst, N.S.

Heaters, Oil-burning
Tate, Jones & Co. Inc. ..... Pittsburg, Pa.

Heating, Car
Canadian Gold Car H'g & L'g Co..Montreal.
Consolidated Car Heating Co., Albany, N.Y.
Safety Car Heating & L'ting Co.New York.
United States Light & Heat. Co.New York

Hoists
Dake Engineering Co..Grand Haven, Mich.

Hoists, Electric
American Hoist & Derrick Co., St. Paul, M.

Hoists, Pneumatic
Taylor & Arnold ....Montreal.

Hoppers, Car, Wet or Dry
Duner Co. ....Chicago, Ill.

Hose, Air Brake and Steam
Guilford S. Wood..............Chicago, Ill

Hydrants
Canadian Fairbanks Co., Ltd...Montreal
Kerr Engine Co..........Walkerville, Ont

Illustrations
Acton Burrows, Limited..........Toronto

Injectors
T. McAvity & Sons ....St. John, N.B.
Nathan Manufacturing Co......New York.

Inspections
R. W. Hunt & Co...............Montreal.
Alfred Lovell ....Philadelphia, Pa.

Insurance, Accident
Can. Casualty & Boiler Ins. Co...Toronto.
Canadian Ry. Accident Ins. Co...Ottawa.
Imp. Guarantee & Acc. Ins. Co..Toronto.
London Guar. & Accident Co., Ltd.Toronto.

Insurance, Boiler
Can. Casualty & Boiler Ins. Co...Toronto.

Interlocking Plant and Signals
Montreal Steel Works, Ltd......Montreal.
Railway Signal Co. of Canada....Montreal.
Saxby & Farmer, Ltd...........Montreal.

Iron, Pig
Nova Scotia S. & C. Co., New Glasgow, N.S.

Iron Signs
Acton Burrows, Limited..........Toronto.

Iron Staybolt Bars
Falls Hollow Staybolt Co..Cuyahoga Falls.

Jacks
Canadian Fairbanks Co., Ltd...Montreal.
Dominion Equip. & Supply Co., Winnipeg.
H. & E. Lifting Jack Co..Waterville, Que.
F. H. Hopkins & Co., Ltd.....Montreal.
Montreal Steel Works, Ltd......Montreal.
Mussens, Limited ....Montreal.
A. O. Norton ....Coaticook, Que.
James Smart Mfg. Co....Brockville, Ont.
Whyte Railway Signal Co. ....Toronto
Williams & Wilson, Ltd ....Montreal.

Japans
The Dougal Varnish Co., Ltd...Montreal.

Journal Bearings
Canadian Bronze Co. ....Montreal.
Crossen Car Mfg. Co. .....Cobourg, Ont.
Kerr Engine Co. ....Walkerville, Ont.
Jas. W. Pyke & Co. ....Montreal

Journal Boxes
The Holden Co., Ltd............Montreal.
McCord & Co. ....Chicago, Ill.

Lager Beer, &c.
E. L. Drewry ....Winnipeg

Lagging and Covering, Locomotive
Canadian H. W. Johns-Manville Co., Ltd. ....Toronto
Taylor & Arnold ....Montreal.

Lamps, Arc
Northern Electric & Mfg. Co.....Montreal.

Lamps, Gas
Commercial Acetylene Co.........Toronto.

Lamps, Incandescent
Canadian Westinghouse Co..Hamilton, Ont.

Lamps and Lanterns
The Hudson's Bay Co....................
The Hiram L. Piper Co..........Montreal.
The N. L. Piper Ry. Supply Co..Toronto.

Lamps, Switch
The N. L. Piper Ry. Supply Co..Toronto.

Lathes
John Bertram & Sons Co.....Dundas, Ont.
Williams & Wilson, Ltd ....Montreal.

Lighting, Buoy
Blaugas Co. of Canada, Ltd.....Montreal
International Marine Signal Co. .. Ottawa.
Safety Car Htg. & Ltg. Co.......New York

Lighting, Car
Blaugas Co. of Canada, Ltd.....Montreal
Canadian Gold Car H'g & L'g Co.Montreal.
Commercial Acetylene Co.........Toronto.
Safety Car Heating & L'ting Co.New York.
United States Light & Heat. Co.New York

Lighting, Signal
Commercial Acetylene Co.........Toronto.

Lights, Contractors' and Wrecking
F. H. Hopkins & Co., Ltd.....Montreal.
Mussens, Limited ....Montreal

Locomotives, Compressed Air
Baldwin Locomotive Works..Philadelphia.
Canadian Locomotive Co..Kingston, Ont.
International Marine Signal Co...Ottawa.
Montreal Locomotive W'ks (Ltd.).Montreal.

Locomotives, Contractors'
Dominion Equip. & Supply Co., Winnipeg.

Locomotives, Electric
Baldwin Locomotive Works..Philadelphia.
Montreal Locomotive W'ks (Ltd.).Montreal.

Locomotives, Logging
Baldwin Locomotive Works..Philadelphia.
Canadian Locomotive Co..Kingston, Ont.

Locomotives, Rack
Baldwin Locomotive Works...Philadelphia.
Canadian Locomotive Co..Kingston, Ont.
Montreal Locomotive Works.....Montreal.
Locomotives, Steam
Baldwin Locomotive Works...Philadelphia.
Canadian Fairbanks Co., Ltd...Montreal.
Canadian Locomotive Co. ..Kingston, Ont.
J. T. Gardner ....Chicago, Ill.
The Males Co., ... Cincinnati, O.
Montreal Locomotive Works.....Montreal.
Vulcan Iron Works .....Wilkesbarre, Pa.
Lorries, Tracklaying
Crossen Car Mfg. Co.......Cobourg, Ont.
F. H. Hopkins & Co...........Montreal.
Lubricators
McCord & Co. ....Chicago, Ill.
Nathan Manufacturing Co......New York.
Taylor & Arnold ....Montreal.
Lumber
Imperial Timber & Trading Co., Vancouver.
Parry Sound Lumber Co. ....Toronto.
Machines and Plant, Contractors'
American Hoist & Derrick Co., St. Paul, M.
M. Beatty & Sons ....Welland, Ont.
Canadian Fairbanks Co., Ltd...Montreal.
J. T. Gardner ....Chicago, Ill.
F. H. Hopkins & Co. ....Montreal.
Mussens, Limited ....Montreal.
Machines and Tools, Prospecting
The American Well Works...Aurora, Ill.
Machines and Tools, Well Drilling
The American Well Works...Aurora, Ill.
Machines, Boring and Turning
John Bertram & Sons Co.....Dundas, Ont.
Machines, Car Shop
John Bertram & Sons Co., Ltd.Dundas, Ont.
Greenlee Bros. & Co. ....Chicago, Ill.
Machines, Cement
James W. Pyke & Co. ....Montreal.
Machines, Drilling
John Bertram & Sons Co. ..Dundas, Ont.
Machines, Earth and Stone Handling
Western Wheeled Scraper Co..Aurora, Ill.
Machines, Hoisting
American Hoist & Derrick Co. St. Paul, M.
Brown Hoisting Machinery Co..Cleveland.
Machines, Logging
Russel Wheel & Fdry. Co..Detroit, Mich.
Machines, Milling
John Bertram & Sons Co. ..Dundas, Ont.
Machines, Planing and Shaping
John Bertram & Sons Co. ..Dundas, Ont.
Cleveland Punch & Shear Wks., Cleveland.
Machines, Radial Drilling
John Bertram & Sons Co. ..Dundas, Ont.
Machines, Rivetting
Long & Allstatter Co. .... Hamilton, Ohio.
Machines, Slotting
John Bertram & Sons Co. ..Dundas, Ont.
Machines, Straightening
Cleveland Punch & Shear Wks.Cleveland.
Machines, Tire Welding
Long & Allstatter Co. .... Hamilton, Ohio.
Machines, Track
Greenlee Bros. & Co. ....Chicago, Ill.
Machines, Tracklaying
F. H. Hopkins & Co. ....Montreal.
Machines, Wood and Iron Working
Canadian Fairbanks Co., Ltd...Montreal.
Williams & Wilson, Ltd ....Montreal.
Machine Tools
John Bertram & Sons Co. ..Dundas, Ont.
Pratt & Whitney Co. ....Dundas, Ont.
Manhole Frames and Covers
American Brake Shoe & F'dry Co.Mahwah.
Canada Iron Corporation, Ltd...Montreal.
Marine Repairs
Goldschmidt Thermit Co. ....Toronto.
Marine Supplies
Rice Lewis & Son.................Toronto.
Metal, Babbit
Tallman Brass & Metal Co., Hamilton. Ont.
Metals
Goldschmidt Thermit Co. ....Toronto.
Metal Work, Structural
Canadian Bridge Co.....Walkerville, Ont.
Dominion Bridge Co.............Montreal.
Montreal Locomotive Works.....Montreal.
Jas. W. Pyke & Co. ....Montreal.
Milepost Numbers
Acton Burrows, Limited..........Toronto.
Motors
Canadian Fairbanks Co., Ltd...Montreal.
McCord & Co. ....Chicago, Ill.
Motors, Electric
Allis-Chalmers-Bullock Ltd. ....Montreal.
Chapman & Walker, Ltd........Toronto.
Northern Electric & Mfg. Co.....Montreal.
Motor Generator Sets
Allis-Chalmers-Bullock Ltd. ....Montreal.
Chapman & Walker, Ltd.........Toronto.
Motors, Turntable
Taylor & Arnold ....Montreal.
Nickel
The Orford Copper Co. ....New York.
Nickel for Nickel Steel
The Orford Copper Co. ....New York.
Numbers
Acton Burrows, Limited ....Toronto.
Nut Locks
Positive Lock Washer Co. ..Newark, N.J.
Nuts, Clevis
Cleveland City Forge & Iron Co.Cleveland.
Oakum
The Hudson's Bay Co....................
Office Fittings
Can. Office & Sch'l Furn. Co....Preston.

Office Signs
Acton Burrows, Limited ....Toronto.
Oil Cups
Nathan Manufacturing Co......New York.
Oils
Galena Signal Oil Co..Franklin & Toronto.
Packing
Anchor Packing Co. of Can., Ltd.,.Montreal
Greene, Tweed & Co. ....New York.
The N. L. Piper Ry. Supply Co...Toronto.
Pile Drivers, Railway
F. H. Hopkins & Co. ....Montreal.
Mussens, Limited ....Montreal.
Pinch Bars
The N. L. Piper Ry. Supply Co..Toronto.
Pipe, Culvert, Cast Iron
Gartshore-Thompson Pipe Co...Hamilton.
Pipe, Gas, Cast Iron
Gartshore-Thompson Pipe Co...Hamilton.
Pipe, Sewer, Cast Iron
Gartshore-Thompson Pipe Co...Hamilton.
Pipe Stocks
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co........Hespeler, Ont.
Pipe, Water (Cast Iron)
Gartshore-Thompson Pipe Co...Hamilton.
Planers
John Bertram & Sons Co. ..Dundas, Ont.
Platforms, Steel
Standard Coupler Co. ....New York City.
Ploughs, Contractors'
Meaford Wheelba'ow Co., Ltd., Meaf'd, Ont.
Mussens, Limited ....Montreal.
Western Wheeled Scraper Co..Aurora, Ill.
Porter
E. L. Drewry ....Winnipeg.
Preservative for Hose
Guilford S. Wood..............Chicago, Ill.
Printing
Southam Press ....Toronto.
Propellor Wheels
W. Kennedy & Sons, Ltd., Owen So'd, Ont.
Pumps
Canadian Fairbanks Co., Ltd...Montreal.
S. F. Bowser & Co., Ltd........Toronto.
Ontario Wind Engine & Pump Co..Toronto
James Smart Mfg. Co....Brockville, Ont.
Pumps, Centrifugal
The American Well Works...Aurora, Ill.
M. Beatty & Sons ....Welland, Ont.
John Inglis Co., Ltd. ....Toronto.
Pumps, Deep Well, Steam and Power
The American Well Works....Aurora, Ill.
Pumps, Fire Pressure
The American Well Works....Aurora, Ill.
Pumps, Irrigating
The American Well Works....Aurora, Ill.
Pumps, Reclamation
The American Well Works....Aurora, Ill.
Pumps, Sprinkler Systems
The American Well Works....Aurora, Ill.
Pumps, Underwriters' Fire
The American Well Works....Aurora, Ill
Punches and Shears
Cleveland Punch & Shear Wks., Cleveland.
Long & Allstatter Co. .... Hamilton, Ohio.
Williams & Wilson, Ltd ....Montreal.
Rail Benders, Roller
Dominion Equip. & Supply Co., Winnipeg.
F. H. Hopkins & Co. ....Montreal.
Montreal Steel Works ....Montreal.
Whyte Railway Signal Co. ....Toronto
Rail Drilling Machines
A. B. Jardine & Co. ....Hespeler, Ont.
Whyte Railway Signal Co. ....Toronto
Rails, new
Dominion Iron & Steel Co....Sydney, N.S.
Drummond, McCall & Co.......Montreal.
J. T. Gardner ....Chicago, Ill.
J. J. Gartshore ....Toronto.
F. H. Hopkins & Co. ...... .Montreal.
Peteler Car Co. ......Minneapolis, Minn.
Rails, for relaying
F. H. Hopkins & Co. ....Montreal.
J. J. Gartshore ....Toronto.
Mussens, Limited ....Montreal.
Provincial Steel Co., Ltd. .. Cobourg, Ont.
Jas. W. Pyke & Co. ....Montreal.
Rail Joints
Goldschmidt Thermit Co. ......Toronto.
The Rail Joint Co. of Canada...Montreal.
Whyte Railway Signal Co. ....Toronto
Rails, Re-rolled
Provincial Steel Co., Ltd. .. Cobourg, Ont
Railway Supplies
Canadian Fairbanks Co., Ltd..Montreal.
Canadian H. W. Johns-Manville Co.,
Ltd. ....Toronto
T. McAvity & Sons ....St. John, N.B.
Burton W. Mudge & Co......Chicago, Ill.
The Hiram L. Piper Co........Montreal.
The N. L. Piper Ry. Supply Co..Toronto.
Rice Lewis & Son................Toronto.
Russel Wheel & Fdry. Co..Detroit, Mich.
Whyte Railway Signal Co. ....Toronto
Williams & Wilson, Ltd ....Montreal.
Reamers
Butterfield & Co.......Rock Island, Que.
Cleveland Punch & Shear Wks.Cleveland.
A. B. Jardine & Co. ......Hespeler, Ont.
Rivet Snaps
Cleveland Punch & Shear Wks., Cleveland.
Rock Crushers
Allis-Chalmers-Bullock Ltd.......Montreal.
Western Wheeled Scraper Co. Aurora, Ill.
Rope
F. H. Hopkins & Co.............Montreal.
The Hudson's Bay Company ....

Ropes, Derrick
Dominion Wire Rope Co. ....Montreal
Ropes, Switch
F. H. Hopkins & Co., Ltd.......Montreal
Rubber Goods, Mechanical
Guilford S. Wood.............Chicago, Ill.
Scales
Canadian Fairbanks Co., Ltd., Montreal.
Safes
J. & J. Taylor...................Toronto.
Scows, Dump and Deck
M. Beatty & Sons..........Welland, Ont.
Scrapers, Wheel and Drag
F. H. Hopkins & Co... ......Montreal.
Meaford W'lbarrow Co., Ltd., Meaford, Ont.
Mussens Limited ....Montreal
Western Wheeled Scraper Co...Aurora, Ill.
Screw Plates
Butterfield & Co.........Rock Island, Que.
A. B. Jardine & Co.........Hespeler, Ont.
Seats, Station
James Smart Mfg. Co. ....Brockville, Ont.
Semaphore Arms
Acton Burrows, Limited ....Toronto.
Semaphores
The N. L. Piper Ry. Supply Co., Toronto.
Saxby & Farmer, Ltd. ....Montreal
Shapers
London Machine Tool Co., Ltd., Hamilton.
Shears, Angle, Bar and Plate
Cleveland Punch & Shear Wks.Cleveland
Shingles
Imperial Timber & Trading Co. Vancouver.
Ships
Polson Iron Works, Ltd ....Toronto
Shop Equipment, Car and Locomotive
London Machine Tool Co., Ltd., Hamilton.
Shops
The Hudson's Bay Company ....
Signal House Numbers
Acton Burrows, Limited ....Toronto
Signals
Railway Signal Co. of Canada..Montreal.
Hall Signal Co. ....Chicago, Ill.
The Hiram L. Piper Co., ...Montreal.
The N. L. Piper Ry. Supply Co...Toronto.
Saxby & Farmer, Limited ......Montreal.
Union Switch & Signal Co., Swissvale, Pa.
Whyte Railway Signal Co. ......Toronto.
Signals, Fog
International Marine Signal Co....Ottawa.
Signs
Acton Burrows, Limited ....Toronto.
Sills, Steel for Cars
Canadian Ry. Equip't Co..Welland, Ont.
Skidders and Loaders
Russel Wheel & Fdry Co...Detroit, Mich.
Slack Adjusters
Chicago Railway Equipment Co...Chicago
Sledges
James Smart Mfg. Co....Brockville, Ont.
Snow Ploughs
.Canadian Car & Foundry Co....Montreal.
Crossen Car Mfg. Co ....Cobourg, Ont.
Solder
Tallman Brass & Metal Co. Hamilton Ont.
Spikes, Railway, Ship or Pressed
F. H. Hopkins & Co............Montreal.
Nova Scotia S.& C. Co. New Glasgow, N.S.
Standard St'l Co. of Can. Ld.Hamilton, Ont.
Spreader Cars
F. H. Hopkins & Co.,..........Montreal.
Western Wheeled Scraper Co .Aurora, Ill.
Spring Dampeners
McCord & Co., ...Chicago, Ill.
Springs
American Vanadium Co. ....Pittsburg, Pa.
B. J. Coghlin & Co. ....Montreal.
F. H. Hopkins & Co.,..........Montreal.
Montreal Steel Works ....Montreal.
Standard Steel Wks. Co.,Philadelphia, Pa.
Sprinklers, Electric
Preston Car & Coach Co...Preston, Ont.
Stand Pipes
John Inglis Co., Ltd. ....Toronto.
T. McAvity & Sons ....St. John, N.B.
Steam Traps
Consolidated Car Heating Co., Albany, N.Y.
Station Name Signs
Acton Burrows, Limited ....Toronto
Staybolt Bars, Charcoal Iron
Falls Hollow Staybolt Co..Cuyahoga Falls.
Staybolt Iron
Tayor & Arnold ....Montreal.
Staybolt Iron or Steel Bars, Hollow
Falls Hollow Staybolt Co..Cuyahoga Falls.
Staybolts, Flexible
Flannery Bolt Co. ....Pittsburg, Pa.
Staybolts, Locomotive
Falls Hollow Staybolt Co..Cuyahoga Falls.
Flannery Bolt Co. ....Pittsburg, Pa.
Staybolt Taps
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co., ...Hespeler, Ont.
Steam Couplers
Safety Car Heating & L'ting Co. New York.
Steam Hammers
John Bertram & Sons Co. ..Dundas, Ont.
Steam Shovels
F. M. Beatty & Son ....Welland, Ont.
F. H. Hopkins & Co.,..........Montreal.
The Males Co., ...Cincinnati, O.
Mussens, Limited ....Montreal.
Steamship Signs
Acton Burrows, Limited ....Toronto.

Steel
Hermann Boker & Co. ....Montreal.
Nova Scotia S. & C Co. New Glasgow, N.S.

Steel, Fire Box
Tayor & Arnold ....Montreal.

Steel for Axes
Montreal Steel Works . ...Montreal.

Steel for Saws
Montreal Steel Works . . .Montreal.

Steel for Springs
Jas. Hutton & Co., ...Montreal.

Steel Shafting
Nova Scotia S & C Co. New Glasgow, N.S.

Steel, Nickel for Nickel
The Orford Copper Co. ....New York.

Steel Plates
Jas. W. Pyke & Co., ...Montreal.

Steel, Tool
Montreal Steel Works . ...Montreal.

Steering Gears
Dake Engineering Co..Grand Haven, Mich.

Stokers, Mechanical
Babcock & Wilcox, Ltd ....Montreal.

Stoves
James Smart Mfg. Co....Brockville, Ont.

Superheaters
Babcock & Wilcox, Ltd ......Montreal.

Switches
Can. Ramapo Iron Wks. Ltd. Niagara Falls
Montreal Steel Works ....Montreal.

Switch Stands
Can. Ramapo Iron Wks. Ltd. Niagara Falls

Switch Targets
Acton Burrows, Limited ....Toronto.

Tanks and Tank Fixtures
John Inglis Co., Ltd. ....Toronto.
Ontario Wind Engine & Pump Co.Toronto.
Polson Iron Works ....Toronto

Tanks, Oil
S. F. Bowser & Co., Limited.....Toronto.

Tanks, Portable Acetylene, for Welding
Commercial Acetylene Co. ....Toronto.

Tapes, Measuring
Lufkin Rule Co. ....Saginaw, Mich.

Taps
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co., ...Hespeler, Ont.

Telegraph and Telephone Apparatus
Northern Electric & Mfg. Co. ...Montreal.

Telegraph and Telephone Office Signs
Acton Burrows, Limited ....Toronto.

Thermit
Goldschmidt Thermit Co. ....Toronto

Ticket Cases
Can. Office & School Furniture Co.Preston.

Tie Plates
B. J. Coghlin & Co. ....Montreal.
Hamilton S. & I. Co., Ltd., Hamilton, Ont.
Nova Scotia S. & C. Co. New Glasgow, N.S.
Guilford S. Wood ....Chicago, Ill.

Ties
Parry Sound Lumber Co. ....Toronto.

Tires, Steel
Jas Hutton & Co., ... Montreal.
Jas W Pyke & Co.. ....Montreal.
Standard Steel Wks. Co.,Philadelphia, Pa.

Tools and Supplies
Canadian Fairbanks Co., Ltd....Montreal.
Jas. Smart Mfg. Co. .....Brockville, Ont.
A. B. Jardine & Co., ...Hespeler, Ont.
Pratt & Whitney Co. ....Dundas, Ont.
Williams & Wilson, Ltd ....Montreal.

Tools, Track
John Bertram & Sons Co Dundas, Ont.
B. J. Coghlin & Co. ....Montreal.
F. H. Hopkins & Co.,..... . .Montreal.
Montreal Steel Works ....Montreal.
Mussens, Limited ....Montreal.

Tools, Pneumatic
The Holden Co., Ltd. ....Montreal.

Tools, Cast Steel Track
American Brake Shoe & Fdry. Co. Mahwah

Track Equipment
Can. Ramapo Iron Wks. Ltd. Niagara Falls

Tramway Equipment
J. J. Gartshore ....Toronto.

Transformers
Allis-Chalmers-Bullock Ltd .....Montreal.

Transmission Appliances
Canadian Fairbanks Co., Ltd ..Montreal.
Williams & Wilson, Ltd ....Montreal.

Trolley Poles, Steel
Dorner Engineering Co.......Chicago, Ill.

Trolley Wheels
Tallman Brass & Metal Co..Hamilton, Ont.

Trucks
Jas. Smart Mfg. Co. ......Brockville, Ont.

Trucks, Electric Car
Baldwin Locomotive Works..Philadelphia.
Montreal Steel Works ....Montreal.

Trusses, Roof
Canadian Bridge Co. ....Walkerville, Ont.
Dominion Bridge Co. ....Montreal.

Tubes, Boiler
Jas. W. Pyke & Co., ...Montreal.

Turbines, Steam
Allis-Chalmers-Bullock Ltd .....Montreal.

Turnbuckles
Cleveland City Forge & Iron Co..Cleveland.
Montreal Steel Works ....Montreal.

Turntables
Canadian Bridge Co. ....Walkerville, Ont.
Dominion Bridge Co. ....Montreal.

Typewriters
Royal Typewriter Co. ....New York

Valves
Consolidated Car Heating Co. Albany, N.Y.
Williams & Wilson, Ltd. ....Montreal.

Valves, Angle and Globe
Kerr Engine Co. ....Walkerville, Ont.
Nathan Manufacturing Co. ....New York.

Valves, Brass Gate
Kerr Engine Co. ....Walkerville, Ont.

Valves, Check
Nathan Manufacturing Co. ....New York.

Valves, Iron and Brass
Canadian Fairbanks Co., Ltd....Montreal.

Valves, Iron Gate
Kerr Engine Co. ....Walkerville, Ont.

Valves, Locomotive Pop
T. McAvity & Sons ....St. John, N.B.
Taylor & Arnold ....Montreal.

Valves, Steam
Nathan Manufacturing Co. ....New York.

Vanadium Steels
American Vanadium Co ....Pittsburg, Pa.

Varnishes
Berry Bros. ....Walkerville, Ont.
The Dougal Varnish Co., Ltd....Montreal.

Ventilators, Car
Burton W. Mudge & Co. ....Chicago, Ill.

Vessels
Polson Iron Works, Ltd ....Toronto

Wagons, Dump
Western Wheeled Scraper Co..Aurora, Ill.

Waste
B. J. Coghlin & Co. ....Montreal.
N. L. Piper Railway Supply Co...Toronto.

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Babcock & Wilcox, Ltd ....Montreal.
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Goldschmidt Thermit Co. ....Toronto.

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Meaford Wheelba'ow Co. Ltd. Meaf'd, Ont.

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Canadian Car & Foundry Co....Montreal.
Peteler Car Co. ....Minneapolis, Minn.
Jas. W. Pyke & Co., ...Montreal.
Standard Steel Wks. Co.,Philadelphia, Pa.

Wheels, Locomotive
Canada Iron Corporation, Ltd.,..Montreal.

Wheels, Rolled, solid Forged
Standard Steel Wks. Co.,Philadelphia, Pa.

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THE

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Old Series, No. 241.
New Series, No. 159

TORONTO, CANADA, MAY, 1911.

For Subscription Rates, See page 433.

Team Work in Transportation.

By C. Murphy, General Superintendent of Transportation, C.P.R. Eastern Lines.

While I realize the scope that this subject affords, it is not my intention to go into statistical details, of which we have abundance in our libraries and offices, but rather to give a short talk on the necessity of team work in transportation, and induce a discussion which may be both interesting and beneficial to all concerned with railroading.

The department generally referred to as the transportation department might lead one to believe that it was somewhat separate from the other departments of a railway, but the deeper we go into it, the more we realize how closely it is identified with all the other departments; in other words, the transportation department, so far as team work is concerned, takes in every other department.

First, we have our maintenance of way, which is really the foundation of the transportation department, and takes a very important part on the team. It is absolutely necessary to have a good foundation in the way of up-to-date track upon which to carry on the work of transportation. Therefore, the roadmaster and his sectionmen are important factors in economic transportation. If the track is not in condition to allow of smooth running, trains have to be slowed down in order to negotiate bad spots. Again, flags carelessly displayed by sectionmen may cause stopping of trains, which in turn may lead to stalling and doubling, thus causing serious detention and helping to increase the fuel bill. In addition to this, is the possible serious delay to the delivery of freight at its destination. It is a well known fact that it costs more to handle tonnage over a poorly put up track than over a smooth running track, not only in the matter of fuel consumption, but in the wear and tear of the equipment, and you all know that a poorly put up track sometimes results in damage to rolling stock and may cause serious accident and great loss of life and property, all of which help to swell the expense of transportation.

I think, next to the maintenance of way department, we should bring in the motive power department, as part of the transportation team, and this might be styled "The Man in the Box." It is therefore of the utmost importance that the members of the motive power department realize their importance to the success of the team, and keep the locomotive power always in fit condition, since it is this part of the great transportation team that has most to do with running up or cutting down the cost of transportation. I often wonder if the mechanic doing a job on an engine realizes the jump he may cause in the cost of transportation by being careless in his work and turning out an engine that will fail before reaching its destination, or cause the engine to burn double the coal and take twice the time necessary to get over the road than would be the case if the repairs had been properly attended to. It is far more economical to allow a train to stand in a terminal for a number of hours waiting an engine that may be under repair, to have such repairs properly made, rather than skimp the work to avoid such delay at the terminal, and the general policy of the motive power department should be never to turn out an engine if it is not in fit shape to take the train through to its destination. Nay, I would go still further and say that the engine should not be turned out if it is not in shape to make the round trip from its home station. I am of the opinion that a close supervision and attention to the power on the part of the superintendents and others would result in better and cheaper transportation.

H. E. Whittenberger,
Superintendent Eastern Division, G.T.R

Another important place on this team is that occupied by the car department. too much value cannot be placed on the importance of careful inspection of their rolling stock by those responsible for this duty. Transportation has to stand the cost of carelessness on the part of any member of the team, and the inspectors and others connected with the car department should be broadened out to realize that they are a big factor in the earning power of the road. I say earning power, meaning that every cent that we can save in the cost of transportation is so much earned. A careless car inspector or repairer, by allowing rolling stock to be taken out of a terminal or other station under his jurisdiction in faulty condition, could easily wipe out the receipts of a whole division in what might occur through defective running gear or other parts failing, thereby causing serious accident. The improper packing of an axle box, which would cause it to run hot, means increased cost of transportation. How many of our axle box packers realize what a saving they might make if they were particular about this small matter, and it is generally the small things carelessly done that sooner or later result in serious loss. Therefore, if the men who are entrusted with these smaller jobs and responsibilities were coached in proper methods and disciplined for wilful neglect of the smaller things, the big losses which neglect of small details lead to would be avoided.

Another source of economy in connection with this team work could be developed by the train dispatchers, agents and operators, as no doubt many of them, in their anxiety to further the interests of the service in their special line, overlook the question of cost. Unfortunately a number of cases come up where it would appear the sole object in mind is to get the train in and out of their station, or over their division, or probably leave it for the next trick man to straighten out. I am inclined to believe that the average dispatcher does not consider what it means in the way of piling up the cost of transportation when he makes a bad meet, keeping a train in a side track for an hour or two through an oversight on his part, or want of thought or knowledge as to the work or running of the train he is handling. The engine crew, when they enter a side track, do not, as a rule, expect to be there more than from 10 to 20 minutes, and of course they are burning fuel keeping their fire up, until presently, after they have been there about an hour, throwing steam into the air, they let their fire cool down. Just about this time the other train usually comes along. Then they make a start, and the result is possibly leaky tubes and a struggle from there to the next terminal. Of course, there are times when such delays cannot be avoided, but I think a large proportion are due to that branch of the team not realizing how important a bearing their work is to that of the whole. An operator may have a signal up, causing a heavy freight train to stop

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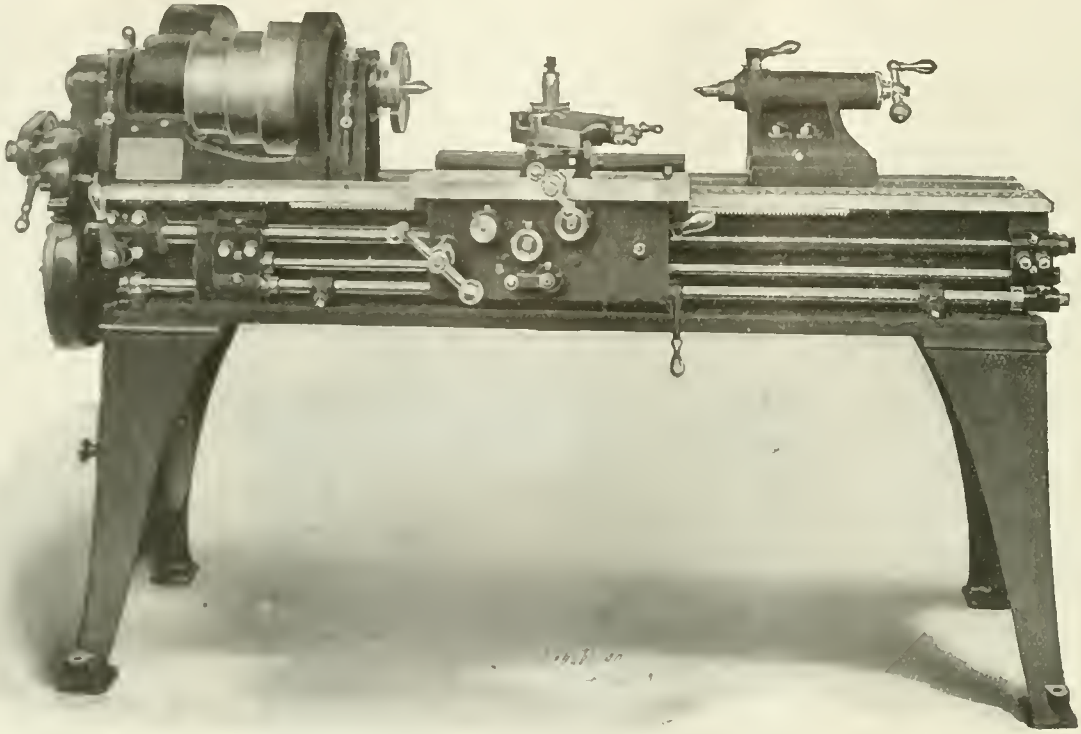

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before he realizes that he should have had the signal at "clear," and so have avoided the unnecessary loss of time and expense in fuel, to say nothing of the energy that the crew are liable to expend in "hot air." I am not forgetting that if the engineer is having trouble with his engine, or the conductor has work to perform along the line, that they should do all in their power to keep the dispatcher and agents thoroughly posted as to their movements, so that other trains may not be unnecessarily delayed. Not only this, but many other small delays could be avoided, which, in the aggregate, mean a great deal, both as regards cost to the company and delaying delivery of freight to consignee contrary to contract. Enginemen, trainmen, yard crews, call-boys, checkers, agents, pumpers, and, in fact, every man in any way connected with the transportation department, can all assist in keeping down the cost of transportation by doing their part, no matter how small or insignificant it may appear. You may ask in what way the call-boy could assist in reducing the cost of transportation. I might answer by asking a question in return. Did you ever suddenly find yourself in the midst of busy hours minus a call-boy? His position may seem of little importance, being merely to notify men of the hour at which they are required for duty, but if the caller neglects his duty and fails to call a number of men who are required for important fast trains, and his neglect is not discovered until the time arrives for the departure of the trains, then you learn that all these important trains have been seriously delayed—possibly the train crew waiting for the engine or the enginemen waiting for the trainmen—all owing to the failure of the call boy. Then you begin to realize that the team is being weakened because the boy "fell down" in his duty. The call boy may be likened to the lad who blows the organ in church. You all know the old saying, "If the boy sleeps, the music stops." There is not a false move made, but what adds to the cost of transportation. It is therefore necessary for every member in this great game of transportation to be ever on the alert, ready to do his part at the critical moment. The failure of one player to do his part is liable to cause loss, to recover from which it may cost a great deal in time and money.

There is another important feature in connection with the prompt movement of traffic that is probably not kept before us with sufficient force to enable us to get all the good out of it that is possible. I refer to the handling of our local way freight trains. These trains are becoming more numerous and the work increasing as our country progresses. The one important feature in this connection is to have the freight for local delivery properly loaded at the shipping points. It therefore becomes necessary for the freight handlers to join our team, and their aid is necessary if we are to look for success. I have seen cases where the train crew have been called upon to unload a good half car of freight to get out a small shipment for a way station, all because the freight is not properly loaded at the shipping point. This results in loss of time, disappointment to consignees, dissatisfaction to shippers, and in some cases damage to freight, besides being a general "black-eye" to the system handling the freight. Compare this with a good system of loading freight for local delivery, where it is loaded in station order, carefully packed and properly trimmed, which ensures prompt delivery when unloaded by the train crew; the train gets over the road on time without damage to freight, the consignees are satisfied, shippers inclined to give you extra freight because it has been handled so well before; overtime of train and engine crews is cut out, with less fuel consumption and low cost of handling. I might say just here that the shippers themselves could encourage this team work a great deal by shipping their goods in strong packages, fully and properly addressed. This all helps to reduce delays at terminals and expedite shipments en route, thereby resulting in economy both to the consignee and the company by preventing freight going astray or becoming damaged on account of frail packages. Another good feature in this connection is the early closing of freight houses to permit of the forwarding of all freight the same day it is received, thus enabling the fast freights to be dispatched on time.

Another important member of this team is the stores department. This may be termed the "handy department," since, when everything else fails, we are apt to say, "requisitions have been placed" and we are probably too much inclined to let the matter rest there. The part which this department plays is one that has great significance, and the difference in handling transportation is very apparent on a section that is fortunate enough to have a good live storekeeper, with a thorough knowledge of the requirements in the way of stock for the different seasons on his section. A great deal more depends upon economical operation in transportation on the stores department than is generally supposed. If the stores department fails to keep up the supply of material principally required for repairs to engines and cars or for train supplies, a very great increase in the cost will be noticeable, from the fact that in many cases, owing to this shortage, material has to be robbed—that is, taken from one engine or car to repair another. This not only causes double work, but involves keeping power and other equipment out of service, oftentimes when badly needed. A better departmental showing may possibly be made in this particular department by keeping stock short, but the transportation department suffers more loss through this lack of material than would probably pay for the shortage ten times over. It is therefore of the utmost importance that the officers of the stores department and those of the other departments keep in close touch as to the stock requirements, and this can only be obtained by their working very closely together.

FROM A RAILWAY CONTRACTOR, AND RAILWAY ENGINEERING, MAINTENANCE OF WAY AND OPERATING OFFICIAL.

T. J. Kennedy, President Superior Construction Co., which is building 43 miles of the Manitoulin and North Shore Railway, and who was for many years, until recently, General Superintendent of the Algoma Central and Hudson Bay Ry., and was formerly in the C.P.R. engineering and maintenance of way departments, writes from Espanola, Ont:—

"Dear Mr. Burrows,—In my opinion The Railway and Marine World is a publication that all Canadian railway men should feel very proud of, from the fact that each issue contains a mass of accurate, useful and interesting information well classified, nicely printed and got up in convenient form.

"I congratulate you upon the great advance that you have made since I first became one of your subscribers some years ago.

"Frankly, I do not consider that we pay enough for what you give us.

"Faithfully yours,
"T. J. KENNEDY."

The fuel department brings up a burning question. It is frequently made the scapegoat for all difficulties that interfere with successful transportation; at times its officials have even to defend themselves against complaints which are really due to weather conditions, and they are good natured enough to try and have the weather altered to suit. The fuel department should be credited with trying to do its best to obviate cause for complaints, but we should benefit by the experience of expert fuel men, who should investigate, and if fuel has been supplied to the company that does not meet requirements, the cause of complaint should be ascertained, so that the next order placed will ensure a betterment of quality. In other words, while the motive power department must realize that the fuel on the dump is what it has to use and make a success of, on the other hand, when difficulty is being experienced with it, and investigation shows there is just cause for complaint, the fuel department should in turn, as above stated, take steps necessary for an improved quality in the next order placed.

There are other departments having a certain influence in connection with transportation, but the ones I have mentioned are the most closely connected and are really a part of the transportation system. I think I am safe in saying that my experience in the transportation department has shown that it is absolutely necessary for the heads of the different departments, so closely associated, to work together for the general good, even to a greater extent than we could look for from the other employes. As a general rule, if the heads of the different departments are not working in harmony, it will be found that the employes of their departments are working at cross-purposes, and that means disorganization and serious increase in cost. On the other hand, we find that where the heads of the different departments are working together with the one end in view—that of obtaining the best possible results—the employes of their department work in the same way, and one department working with the other, helping with every member willing and ready to do his part, and being coached along by his captain, a combination so strong is formed that nothing can stand up against it, and, under these conditions, the lowest possible cost of operation is the result.

Another feature in connection with the effect on transportation in this climate of ours is the necessity of team work to turn out power in the earlier part of the day, thus giving the crews the benefit of the higher temperature during the day to get their trains over the road. Where this combination of team work does not exist, the motive power department will often hold power in that may need repairs during the day, and then flood the operating department with a lot of power between noon and midnight, thus causing extra trains to be on the road during the night at a time when the cost of transportation runs away up owing to severe weather.

There is another point I desire to bring out in connection with this team work that appears to me to be rather detrimental to the successful carrying out of the work of transportation between the different departments, and that is, the excessive amount of correspondence that occasionally drifts in, until one realizes that in many cases it is a useless waste of time and energy. I maintain that more can be accomplished by one visit to the heads of the different departments, or to the different places on the division requiring attention, than by a voluminous correspondence. In many cases, by the time correspondence gets through the different channels, the opportunity for good, with which object it was started, has passed. Many matters connected with transportation need prompt action, and the system of correspondence is too slow in such cases to accomplish any

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S. A. MEGEATH,

PRESIDENT

good, and in many instances a great saving and improvement can be accomplished by that intercourse between the heads of departments that is essential to the successful operation of the transportation end of a railway system.

I do not think there can be much opposition to the placing of the superintendent of a division or district as captain of the team, and it should be his earnest effort to become thoroughly acquainted with the work that every player has to perform, and he should be as much interested in one department as another as members of such team. He should be quick to observe any weakness or lack of energy on the part of any player, and work the whole team so that there will be the greatest harmony and co-operation. He should not be allowed to feel that any trouble in the locomotive department does not mean trouble for him, or that if any member of the team falls down in the proper performance of his duty, he is not responsible. I am afraid that we have some superintendents who feel that the failure of some department to carry out their part of the transportation game is up to that particular department and he is not to blame. There can only be one captain if the team is to be successful, and it is the captain's duty to watch for the weak spots and see that ample support and assistance are given whenever this weakness appears. If any difficulty develops on the track, he should not rest until that difficulty has been overcome; if time is lost owing to poor coal, probably on account of snow and ice being mixed with it, he should make it his business to see that that kind of mixture for making steam is avoided, and he should not miss an opportunity of bringing all the departments associated in the transportation game into the closest harmony and co-operation, and make all realize that any weakness on the part of a single player might easily turn what would otherwise mean victory into dismal failure.

In concluding, I would draw atention to the importance of heads of departments insisting on premises being maintained at all times in a neat and tidy condition, and in endeavoring to have clean, knifty men in charge who will see to it that employes under them are kept up to tidy habits and a proper attention to their personal appearance, since the natural result of slovenliness is carelessness, and this is largely a question of how the officer in charge may look at it. Some will see accumulations of rubbish and dirt at a glance, while to others this state of affairs does not appeal. As an illustration, I may be permitted to recall a case where a colored man, on visiting a museum where all kinds of curiosities were exhibited, when asked what he thought of it, replied, "They were the best whitewashed walls he had ever seen." Another case, a guest at a banquet, from a lumber camp, when called upon to speak, in his endeavor to express his feelings of the good things provided, wound up by stating it was the "finest salt he had ever tasted." It is therefore important, when selecting men for positions, to see that they possess the qualifications necessary for the post they are to take charge of, and if the spirit of self-respect can be infused into the rank and file, the result cannot but be a beterment to the service.

The foregoing paper was read before the Canadian Railway Club recently.

◆

Farrelly Brothers, Ltd., has been incorporated under the Manitoba Companies Act, with a capital of $20,000, and office at Winnipeg, to carry on a general contracting business, and to build and control public works of all kinds, including railways, tramways, docks, harbors, piers, wharves, canals, etc. Among the incorporators are, T. P., G. J. and F. E. Farrelly, contractors, Winnipeg.

Government Railways Wages for Telegraphers, Etc.

The Intercolonial and Prince Edward Island Railways telegraphers, train dispatchers and station agents applied some time ago for a board of conciliation and investigation, the application alleging that the differences related to the failure of the management to live up to the terms of the existing schedule of rules and rates of pay with respect to certain employes; also to the refusal of the management to agree to certain proposed amendments to the same schedule. The board consisted of J. H. Gilmour, Brockville, Ont., nominated by the Government Railways Managing Board; J. G. O'Donoghue, nominated by the employes, and Judge Barron, of Stratford, Ont., recommended by the other members of the board.

The parties having agreed upon all other points there remained but two matters to be disposed of by the board, which were unanimously agreed to as follows:

1. The claim for an increase in wage rate. The board is of the opinion that $35,000 a year should be allotted for this purpose to be distributed by increasing the minimum salaries as set forth in article 24 of the schedule, and the balance to be apportioned to the regular salaries of the men now employed, as may mutually be agreed upon between the committee of the employes and the Board of Management. This increase to date from October 1, 1910.

2. As to the number of hours operators should be required to work per day. At present the men work 12 hours per day with the exception of train dispatchers, who work eight hours. The board does not, for the present, recommend any change in this regard except in the case of operators employed at terminal points indicated in article 20 of the schedule, in which case the board recommends that an eight hour day be instituted for these men.

Article 20 of the schedule is as follows:

"Twelve consecutive hours, including meal hours, will constitute a day's work for a telegrapher except as otherwise provided for in this schedule. Eight consecutive hours train dispatching and time for transfer will constitute a day's work for telegraphers who are train dispatchers. Eight consecutive hours will constitute a day's work for telegraphers at the following points: Levis, Riviere du Loup, Campbellton, Moncton, Truro, Newcastle and New Glasgow. The hours of duty will be defined from time to time by the superintendent of the district, and when telegraphers are required to exceed the above named hours they will receive an official order and will be excused in the same manner, and will be allowed overtime. On the Prince Edward Island Ry. the hours of duty of the train dispatchers are to remain as at present subject to the discretion of the superintendent."

Article 24 is as follows: "The minimum monthly salaries for train dispatchers will be as follows: 1st year, $110.00; 2nd year, $115.00; 3rd year, $120.00; 4th year, $12.00; relieving dispatchers, $105.00; and 50 cents per day for expenses when away from headquarters, and allowed for travelling expenses if moved.

"On the Prince Edward Island Ry. the monthly salaries will be as follows: senior dispatcher, $125; assistant dispatcher, $110.00.

The minimum monthly salaries for telegraphers will be as follows: Agent and telegrapher with dwelling, fuel and light, $53.00; agent and telegrapher without dwelling, fuel and light, $58.00; telegraphers, $53.00; telegraphers at Levis, Riviere du Loup, Campbellton, Moncton, Truro, Newcastle and New Glasgow, $70.00; relief agents, $80.00."

May Birthdays.

Many happy returns of the day to—

W. R. Baker, Secretary and Assistant to President, C.P.R., Montreal, born at York, Eng., May 25th, 1852.

G. S. Cantlie, General Superintendent Car Service, C.P.R., Montreal, horn there May 2, 1967.

M. Donaldson, M. Can. Soc. C.E., Superintendent Ottawa Division, G.T.R., Ottawa, Ont., born near Edinburgh, Scotland, May 1, 1851.

A. E. Duff, District Passenger Agent, G.T.R., Toronto, born at Sherbrooke, Que., May 1, 1872.

G. C. Dunn, District Engineer, G.T.P.R. Winnipeg, born at Quebec, May 13, 1862.

J. D. Evans, Chief Engineer, Central Ontario Ry., Trenton, Ont., born at Goderich, Ont., May 27, 1843.

E. T. Galt, President, Alberta Ry., and Irrigation Co., Montreal, born at Sherbrooke, Que., May 24, 1850.

C. M. Hays, President, G.T.R., and G.T.P.R., Montreal, born at Rock Island, May 16, 1856.

G. H. Hedge, Assistant Master Mechanic, C.N.R., Winnipeg, born at Neath, Wales, May 26, 1865.

R. B. Hepburn, President and General Manager, Ontario and Quebec Navigation Co., Ltd., Picton Ont., born there May 27, 1876.

G. A. Hoag, Superintendent, Central Ontario Ry., Trenton, Ont., born at Walker's Falls, Ont., May 31, 1866.

W. T. Huggan, Accountant and Auditor, Prince Edward Island Ry., Charlottetown, P.E.I., born at Halifax, N.S., May 24, 1851.

J. Irwin, Superintendent, District 5, Canadian Northern Ry., Saskatoon, Sask., born at Clinton, Ont., May 28, 1866.

W. Marshall, Superintendent, Ontario Division, C.P.R. Telegraphs, Toronto, born at Garden Island, Ont., May 18, 1859.

M. Neilson, C.E., Consulting Engineer, Montreal St. Ry., born at Almonte, Ont., May 26, 1852.

A. L. Ogilvy, General Purchasing Agent, National Transcontinental Railway Commission, Ottawa, Ont., born at Richwood, Oxford County, Ont., May 23, 1868.

H. B. Sherwood, Superintendent, Bay of Quinte Ry., Napanee, Ont., born at Auburn, N.Y., May 25, 1847.

W. Stapleton, General Agent, Canadian Northern Steamships, Ltd., Winnipeg, born at Bristol, Eng., May 20, 1884.

E. Tiffin, Member Government Railways Managing Board and General Traffic Manager, I.C.R., Moncton, N.B., born at Hamilton, Ont., May 5, 1849.

J. H. Walsh, General Manager, Quebec Central Ry., Sherbrooke, Que., born at Quebec, May 12, 1860.

H. K. Wicksteed, B.A.Sc. M. Can. Soc. C.E., Chief Engineer of Surveys, Mackenzie, Mann & Co., Ltd., Toronto, born at Quebec, May 25, 1855.

James Yeo, ex-Roadmaster, Intercolonial Ry., Riviere du Loup, Que., born at Bideford, Devonshire, Eng., May 1, 1830.

◆

The Board of Railway Commissioners, will on May 2, take up for discussion the matter or railway companies providing some form of protection to its employes against death and injury through falling from tenders of locomotives.

Hereafter where an application is made to the Board of Railway Commissioners by a railway company for the approval of the location of its line under sec. 159, or for approval of a deviation under sec. 167, of the Railway Act, the Board will not approve of such location or deviation, until application has been made for approval of all highway and railway crossings affected thereby.

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Rotary Snow Plows have been in successful operation under the
most trying conditions for over twenty-five years.
They keep the road open.
Work with certainty and regularity.
Do not spread the rails.
Do not derail.

Heavy snowstorms and deep drifts increase operating expenses.
No snow too heavy or too hard for the Rotary.
No drift too deep.

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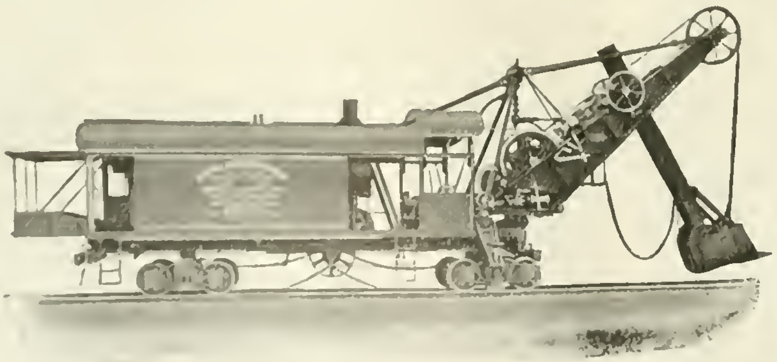


For heavy or light digging.
No chain troubles.
Few repairs.
Not top heavy.
Saves fuel.

MONTREAL LOCOMOTIVE WORKS, LTD.

BANK OF OTTAWA BUILDING, MONTREAL, CANADA

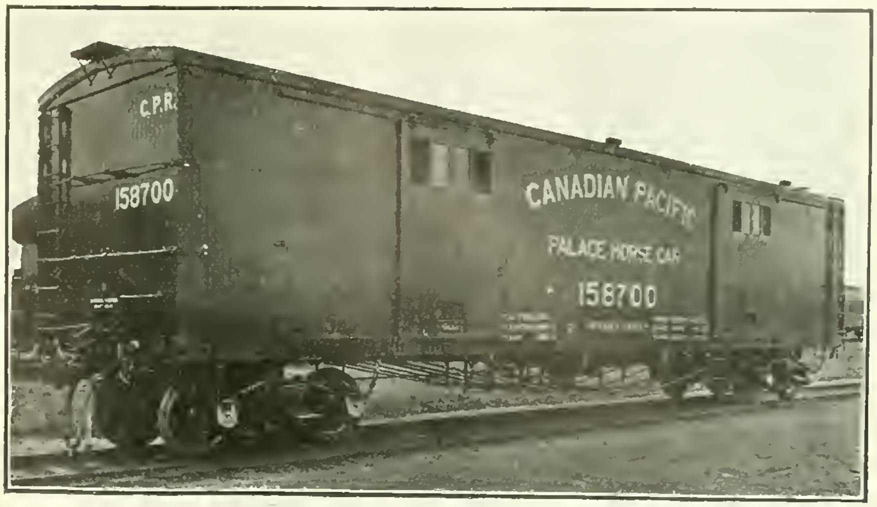
C. P. R. Palace Horse Cars.

The C.P.R. has built recently, at its Angus shops, Montreal, fifty 47 ft. horse cars, of which the following are the principal particulars:

Weight of body	34,240 lbs.
Weight of trucks	18,000 lbs.
Total weight	52,240 lbs
Capacity	16 horses
Cubic capacity	3,330 cb. ft.
Outside general dimensions:	
Length over couplers	50 ft. 1 in.
Length over frame	47 ft.
Width over fame	9 ft. 4⅝ in.
Height over brake mast	13 ft. 10 in.
Height over running board	13 ft. 3 15-16 in.
Height at centre of roof	13 ft. 2 3-16 in.
Height at eaves	12 ft. 7½ in.
Width at eaves	9 ft. 8½ in.
Inside:	
Length inside	46 ft. 1⅞ in.
Width inside	8 ft. 9 in.
Centre height inside	8 ft. 4 15-16 in.
Width at eaves	9 ft. 8½ in.
Side height inside	8 ft. 0 15-16 in.

The following are the principal features: Body—Arched roof, canvas covered; running board; side and end ladders; sheathed inside and outside; ceiling lined; special hardwood sheathing to height of 4 ft. at ends inside; iron carlines.

The doors are in two sizes, of the freight type, fitted with windows; one pair 6 ft. 9½ in. wide by 8 ft. ½ in. high; one pair 5 ft. 3½ in. wide by 8 ft. ½ in. high. The door openings are, one pair 6 ft. 6 in. wide by 7 ft. 8¾ in. high; one pair 5 ft. wide by 7 ft. 8¾ in. high. Iron angle door posts.

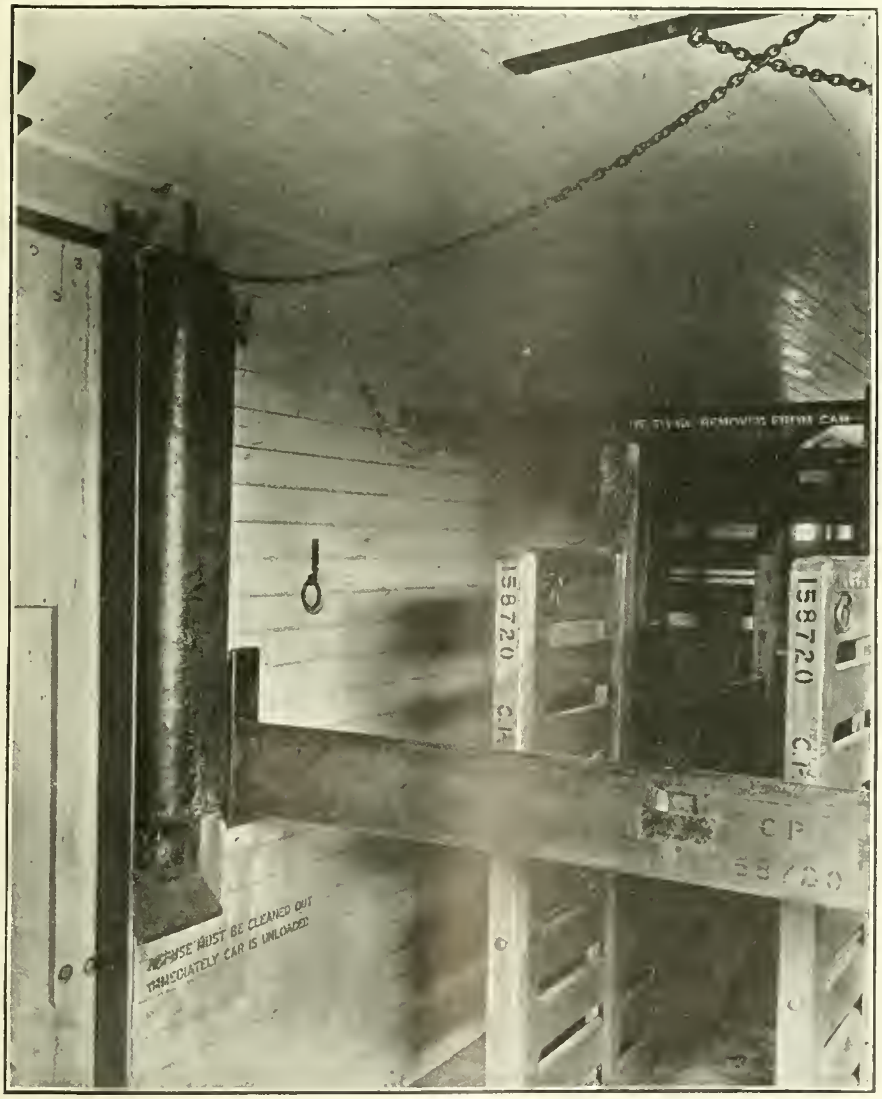


The windows in doors have 10 in. by 20 in. glass, and there are also two ventilators 11¾ by 20 in in line at upper part of each door, the ventilators being covered with wire netting and situated one at either side of window, which are central as regards the width of the door. The ventilators are closed by a sliding iron shutter, which, when ventilator is open, covers the adjoining window. One ventilator is also situated in central position at lower part of door, shutter being operated in the same manner as those above. There are four globe ventilators in the roof.

The underframe has Z bar centre sills, wooden intermediate and side sills; steel flitch plates on inside of side sills; friction draft gear, safety chains, steam train pipe, air signal pipe; 40 ton trucks of the freight type, with elliptic springs; 34 in. steel tired wheels.

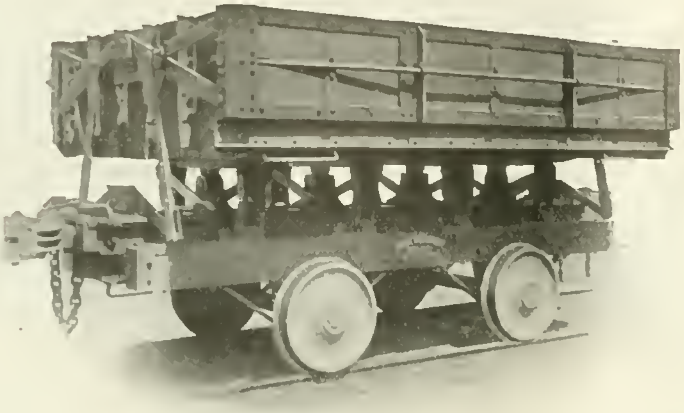
The interior is fitted with 12 removable stall partitions which rest in cast iron sockets, sunk flush into floor. Partitions are supported overhead by removable lengths of 2 in. iron pipe, pipes being supported by brackets on side sheathing. The stalls when not in use or stored at the side of the car, can be stacked six at each end of car, leaving a distance of 42½ ft. between them and the full width of the car, except for the transverse partitions. A transverse partition in two sections is located centrally in the car, one section extending from car side to first stall partition and the other meeting it, swinging from the other side of the car. The transverse partition rests in sockets similar to the ones used for the stall partitions, but each section is supported by hinges at side of car, the larger section having a lever device by which it can be raised with one hand out of the floor sockets and swung around to its stored-away position at the side of the car, where it again sinks into floor sockets on the lever being released. The small section is swung round similarly, but it is so light that no lever device is required to operate it. The stall and transverse partitions are protected to a height of 4 ft. from the floor, by hardwood sheathing. Breast bars are fitted into socket castings on either side of car and extend across immediately in front of stall partitions, the top of breast bar being 4 ft. from floor. When not in use, the breast bars are removed and stored above doors, brackets being provided for this purpose.

A special feature of these cars is the pressed steel feed troughs which are hinged to the car sides and hooked to breast bars at the other end when in use, each trough extending nearly half way across the car and supplying two stalls. An additional support for the feed troughs consists of a chain of such a length that the end of the trough is supported from the roof of the car. When not required, the feed troughs are stored away in recesses formed between the angle iron door posts and the wooden intermediate posts, the upper line of belting being stopped short at the wooden post, the only connection between the iron and the wooden posts above the lower belt rail being the outside sheath-

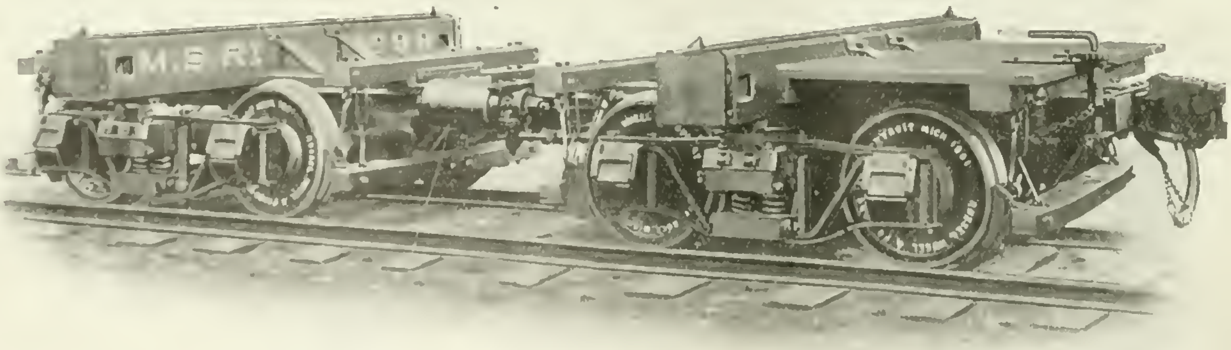


C.P.R. Palace Horse Car. Interior showing trough up.

Russel Heavy Duty Dump Cars



The only dump car built that will stand the severe service of the heaviest steam shovels. Acknowledged by the operator to be the best car on the Mesaba Range.



RUSSEL LOGGING CARS

Superior in design. Built to accommodate any length of logs and of any capacity desired. ∴ ∴

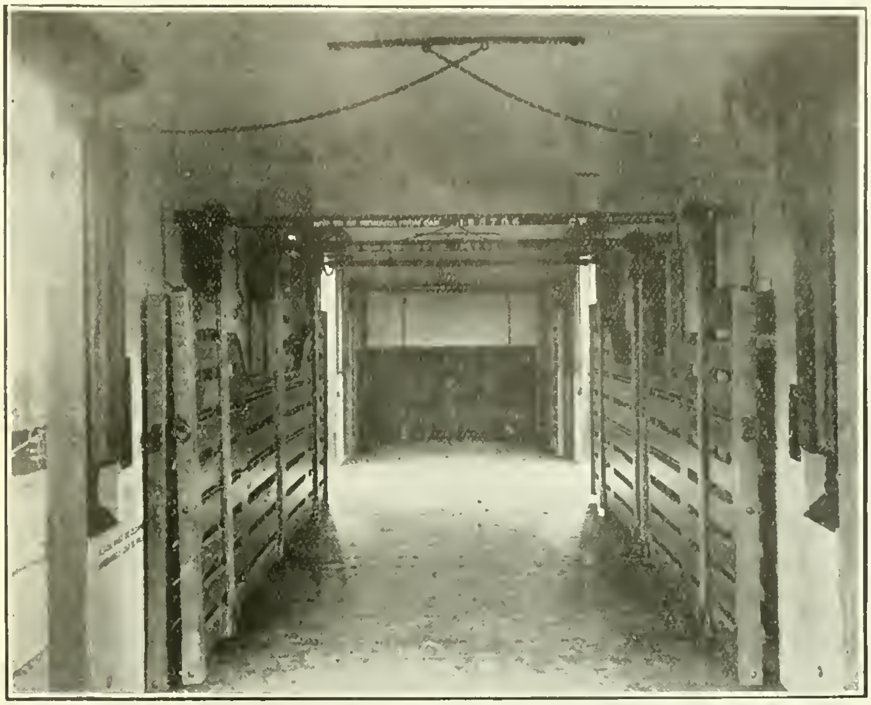
RUSSEL WHEEL & FOUNDRY CO.

Detroit, Mich., U.S.A.

ing. This device enables the feed troughs to be stored away without interfering much with the inside clearance of the car.

The specialties used on these cars are the C.P.R. standard ones.

For the foregoing data and the photographs from which the accompanying illustrations are made, we are indebted to R. W. Burnett, General Master Car Builder C.P.R.



Interior of C.P.R. Palace Horse Car.

Recent Ontario Legislation.

The Ontario Legislature at its recent session passed the following acts affecting transportation interests:—

Belleville Radial Ry. — Amending charter.

Canada Foundry Co.—Respecting company's property at Bridgeburg, Ont. This land was originally acquired for a shipbuilding yard.

Dunnville, Wellandport and Beamsville Electric Ry.—Extending time for construction.

Fort William.—Respecting city's relations to Port Arthur and Fort William Electric Ry.

Guelph Radial Ry.—Extending time for construction and confirming agreements with People's Ry.

International Ry.—Respecting International Ry. and the International Traction Co.

Mount McKay and Kakabeka Falls Ry.—Confirming bylaw of Paipoonge municipality exempting line from taxation.

Navigable Rivers.—For protection of public interest in beds of navigable rivers.

Niagara Frontier Electric Ry.—Incorporation.

Ottawa and St. Lawrence Electric Ry.—Extension of time for construction.

Ottawa, Smiths Falls and Kingston Ry.—Incorporation.

Owen Sound. — Confirming bylaw granting bonus to dry dock.

Peoples Ry.—Extending time for construction and authorizing building of additional lines.

Port Arthur.—Confirming bylaws authorizing expenditures on Port Arthur and Fort William Electric Ry.

Railway Act.—Two acts amending Ontario Railway Act, 1906.

Railway and Municipal Board.—Amending powers.

St. Thomas.—Confirming bylaw with respect to taxation of Michigan Central Ry. property.

Sandwich, Windsor and Amherstburg Ry.—Amending powers.

Stratford Ry.—Incorporation.

Temiskaming and Northern Ontario Ry.—Respecting powers of Commissioners.

Toronto.—Granting city various powers in respect of Toronto and Mimico Electric Ry., etc.

Toronto and York Radial Ry.—Extending powers.

Toronto Interurban Ry.—Incorporation.

Toronto Suburban Ry. — Extending time for construction and giving power to build additional lines.

Interior of C.P.R. Palace Horse Car.

Crow's Nest Pass Coal Co's. Railway.

The board of conciliation and investigation which was appointed to adjust a dispute between the Crow's Nest Pass Coal Co. of Fernie, B.C., and its employes, has made a unanimous report. In the employes application for the establishment of this board the differences in question were embodied in two complaints, namely: the increased charge by the company for the use of special trains to convey those of its employes who were members of the United Mine Workers of America from Coal Creek, B.C., to Fernie, and return; and an alleged reduction in the wages of certain employes in contravention of the existing agreement between the company and its employes.

The company claimed that the trains and tracks belong to the Morrisey, Fernie and Michel Railway Co., and that the schedule of rates objected to was passed by the directors of the latter company on March 11, 1910.

On the first point involved in this dispute the award of the board is substantially in favor of the men, the board considering that the relations between the Crow's Nest Pass Coal Co. and the Morrisey, Fernie and Michel Ry. Co. are so close that it is impossible to find the distinction between the two; and that therefore, the Crow's Nest Pass Coal Co. should, during the life of the agreement, continue to supply trains at the old rate. Regarding the question of the alleged unfair reduction of wages of certain employes, the finding of the board is also in favor of the men with the exception of one instance where the company's action is upheld.

During Feb., 24 employes were killed, and 26 were injured in the course of their employment on Canadian railways. Of the fatalities, nine were due to being run over, six to collisions, five to an explosion of powder, three to derailments and one to exposure, while of the other accidents, nine were due to derailments, six to falls, five to being run over, two to collisions and one each to being caught between cars, to being struck by a passing object, to falling material and to an explosion of gasoline.

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MANUFACTURERS OF

Steel Castings (Acid Open Hearth System)

Switches and Track Work

For Steam and Electric Roads

Manganese Steel Castings

For Wearing Parts, insuring Great Hardness and Durability

Springs of All Kinds

TOWER, CLIMAX and SHARON COUPLERS and PARTS THEREOF
for PASSENGER and FREIGHT CARS and LOCOMOTIVES

Interlocking Plants

Trucks for Electric Cars

AGENTS FOR CANADA FOR

BARROW HÆMATITE STEEL CO. Barrow-in-Furness, England

Quotations for Tee Rails, Fish Plates, etc., promptly furnished.

Catalogues sent on application.

Toronto Office: 702 TEMPLE BUILDING P. O. BOX 82

Representative for British Columbia, E. G. BLACKWELL, 821 Powell St., Vancouver.

American Railway Engineering Association.

This Association, formerly the American Engineering and Maintenance of Way Association, met in Chicago, March 21 to 23. The attendance was large, and there was the usual evidence of very active interest in the consideration of the various subjects submitted and discussed. The proceedings opened with the address of the President, L. C. Fritch, Chief Engineer, Chicago Great Western Ry.; this reviewed the purpose, policy, organization and growth of the association, and touched upon some developments in railway affairs and railway engineering.

The officers for 1911 are as follows: President, W. C. Cushing, Chief Engineer of Maintenance of Way, Pennsylvania Lines Southwest System, Pittsburg, Pa.; Vice Presidents, C. S. Churchill, Chief Engineer, Norfolk & Western Ry., and E. F. Wendt, Assistant Engineer, Pittsburg & Lake Erie Ry.; Treasurer, G. F. Bremner, District Engineer, Chicago, Burlington & Quincy Ry.; Secretary, E. H. Fritch, Chicago.

In the proceedings there was evident the usual difficulty in keeping the discussions to the really important matters. In several cases time was spent in discussing minor matters of wording or phrasing while matters of general principle or larger importance were passed by. A good part of the discussion also related to proposed changes in the "Manual of Recommended Practice," published by the association, and while it is desirable to have this accurate and complete it should be recognized that the manual is not a statement of the best and only practice, to be accepted and used as the highest authority. It is simply a compilation requesting and suggesting approved methods in certain lines of work. The value of the committee reports is largely in their collection of information and opinion, and the value of the meeting is largely in its opportunity for discussing the material thus presented.

Every one of the 19 standing and three special committees had a report, and all the reports were called up for consideration. Naturally some received much more attention than others, and for some of them there was lttie or no opportunity for discussion. This was inevitable, when 22 reports had to be disposed of at six sessions. One trouble with the work of this association is that its enthusiasm has led it to undertake rather too much work. Some of the committees had from four to eight subjects assigned to them, and while not all of these were taken up in detail, their consideration serves to disperse rather than to concentrate the energy of the committee members. It is true that in some cases the work is divided among sub-committees, but it would be better to have the full committee give its attention to a smaller field of investigation. Furthermore, the various reports and appendices swell the annual volumes of Proceedings to an undesirable extent.

A change in some of the methods of management and procedure is necessary, and that these conditions are recognized by the officers of the association is shown by the fact that a part of one session was devoted to a frank discussion of them. At the same time, the subject of continuing the publication of the Manual was discussed. It was the universal opinion that this should be continued, but that it should be under control of a board of review to see that the matter is properly condensed, that unnecessary matter is not included, and that there is proper harmony and agreement between the various recommendations. It was originally intended to become a book of standard specifications, but its present most useful purpose is as a hand-book of good and approved practice in different lines of work.

158720
158720
REFUSE MUST
IMMEDIATELY CAR IS

C.P.R. Palace Horse Car. Interior showing trough down.

All the reports were printed in advance, with their appendices and illustrations; they aggregated some 670 pages, exclusive of the 550 pages of the rail committee report (which forms one complete volume of the 1911 Proceedings. We give below a brief review of the reports and of the proceedings in connection with them.

ROADWAY.

The work of this committee is divided among five sub-committees, only one of which had a report. This was an excellent one, however, and dealt with the one subject of formulas for waterway openings. Special efforts have been made to bring together all known formulas for determining the size of such openings, and appended to the report was a digest of information compiled by A. F. Gilman and G. W. Chamberlain, Univ. of Wisconsin, in the course of their investigation on this subject. About 27 formulas were given and discussed (beginning with that of Major E. T. D. Myers. 1879). There was also an extended bibliography accompanying the report. The committee stated that it was not prepared to modify its former conclusions that "no single waterway formula can be recommended as fitting all conditions of practice. Nevertheless, as a result of its investigations it felt warranted in calling particular attention to certain relationships which point to the development of such a general formula. The report was accepted as information, without discussion.

RAILS.

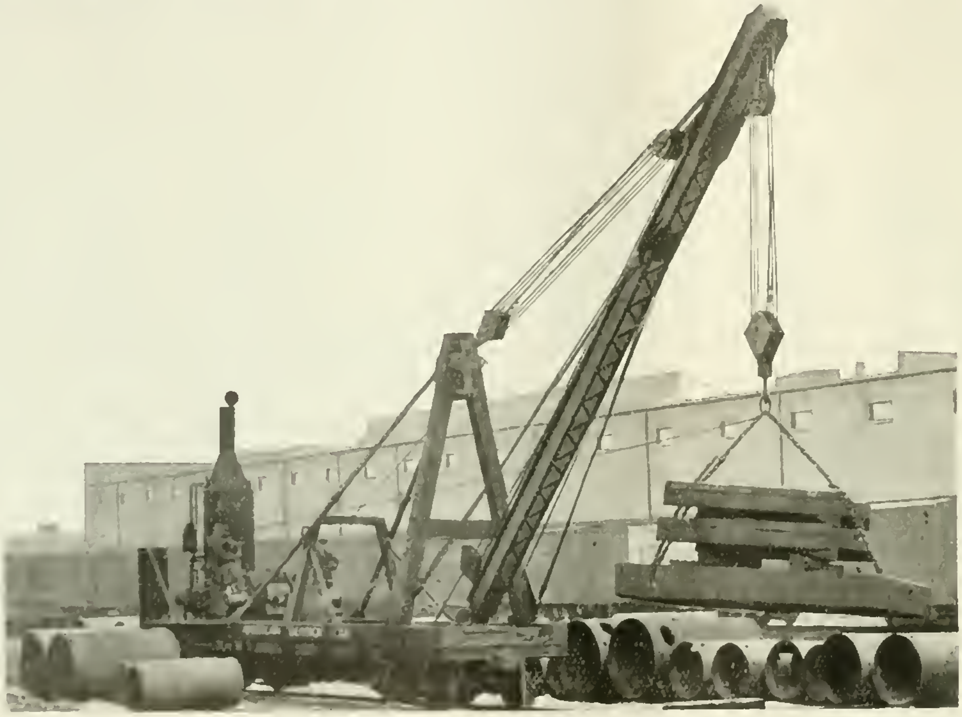
This committee is conducting a comprehensive and systematic investigation with a view to improving the quality of rails. Its report proper was only one of progress, but the reports of its work for the year (including the investigations by M. Wickhorst, its Testing Engineer) fill 550 pages. Among this material is a large collection of information and engravings relating to rail failures, and to the use of rails of open-hearth and alloy steels. One important indication of the committee's work is that differences in the production of ingots and of the finished rails from them may annihilate all advantages that might be derived from any particular section of rail. The design of rail sections, therefore, is not the main cure for defective material. As a matter of fact, the principal defects connected with rail manufacture seem to have their origin in the making of the ingot. Some tests have been made as to the strength of rail head in different sections, in order to throw light on the controversy as to the respective merits of thin and thick heads. These tests will give some information also as to the claim that the rail head is broken down by excessive wheel loads even though there is no physical defect in the metal.

The discussion related mainly to rail breakages and records of breakages. It appears that on some roads from 90 to 100% of these failures occur in the left-hand rail, and it was suggested that on

ROLLING STOCK NOTES

"AMERICAN"

BRIDGE BUILDERS' DERRICK CAR



This Derrick Car is SELF-PROPELLING. Engine will propel the car about five miles per hour.

In traveling any distance in train, mast can be quickly swung back onto rest, boom unstepped and slid back onto car, shipping all as one compact load.

ENGINE: Double cylinder, double drum fitted with friction driven reversing motions for operating the car in either direction.

Four Winch Heads are furnished.

The following are among the Railroads that are building Bridges, etc., with "AMERICAN" Car Derricks:

Chicago, Rock Island and Pacific Ry. Union Pacific Ry.

Northern Pacific Ry.

Cincinnati, New Orleans and Texas Pacific Ry.

Minnesota and International Ry.

National Railways of Mexico.

The cost is not great and the Derrick will pay for itself on a few good operations.

Let us send you Proposition "A".

American Hoist and Derrick Co.

ST. PAUL, MINN.

Name..........................

Address..........................

Please send us Proposition "A"

"American" Bridge Builders' Derrick Car

American Hoist &

Derrick Co.,

St. Paul, Minn.

double track this might be due to defective drainage in the middle of the track, causing the roadbed to be soft and the ballast loose under the ties. Mr. Elliott, N.Y. Central Ry., remarked that in tests of locomotive counter-balancing made by the Railway Master Mechanics' Association in 1892 the greatest load was found to be on the front left-hand driver of a 4-4-0 engine. The difference was not great, however. He suggested that this matter be taken up again in regard to engines having three driving axles. The committee's investigations and tests of rail joints (not yet completed) indicate that it is very necessary to see to the character of the steel used in any form of joint.

The principal work of the committee is the preparation of standard specifications and while those adopted tentatively in 1910 have not been followed in any purchases, the differences between these and the specifications of some large railways are not great and are growing less. Speaking for the committee, Mr. Churchill, N. & W. Ry., remarked that differences between the railway engineers and the rail manufacturers as to specifications are becoming less and less. He gave the manufacturers credit for really trying to improve their work.

TIES.

This committee made a report of progress, but presented several appendices. These included statistics of tie renewals, and information as to the use of steel and concrete ties (supplementing the information given in a previous report). The increasing use of cypress for ties led the committee to make some enquiries as to its service. From the returns of over 20 railways it appears that the life averages from 10 to 12 years, with a range of 4 to 15 years. Another matter dealt with was the abrasion and cutting of ties by the rails. The results of observations indicate that the use of steel flanged tie-plates on tangents and curves will increase the life of ties by one to three years, while at the same time the track will be maintained in better condition and at less cost.

There was very little discussion, but Mr. Wendt, P. & L. E. Ry., gave the results of maintenance cost of track laid with steel ties and oak ties for 3½ years. From Sept., 1907, till Nov., 1908, no surfacing was done; the cost of track labor for this period was $417 per mile per year where wooden ties were used and $28 where steel ties were used. Both pieces of track were again surfaced in Nov., 1909, and the cost was $95 and $153 respectively. During the next 12 months, however, the wood tie track was surfaced only once, while the steel-tie track had to be surfaced three times. The respective costs for this last period therefore were $128 and $428.

WOOD PRESERVATION.

This report presented two conclusions, both of which were adopted: (1) that accurate records of life of ties should be kept on certain specific lengths of track, instead of attempting to keep such records for the entire mileage (from which only very incomplete and unreliable returns can be received; (2) that timbers should be framed before treatment. The first was referred to the Board of Direction for consideration. As to framing timber before treatment this is not always practicable; where treated timber is framed, the parts are usually mopped with creosote oil or asphalt. Mr. McDonald, N C. & St. L. Ry., advocated immersion for 20 minutes in hot creosote oil and 20 minutes in cold creosote oil, where the size of the timber permits of this. It seemed to be the general opinion that present methods of field treatment in such cases were not satisfactory, and the committee was requested to look into the matter. W. F. Goltra advocated kiln drying or artificial seasoning of ties as superior to seasoning in open air, being quicker and more effective.

Appendices to the report covered the following subjects: Specifications for creosote oil, specifications for piles which are to be treated, descriptions of patented preservative processes, grouping ties for treatment, electrical resistance of treated timber, strength of ties treated with crude oil, the use of track scales in weighing timber at treating plants, statistics of consumption and treatment of ties.

GRADING AND INSPECTION OF LUMBER.

This committee submitted classification, grading and inspection rules and specifications for lumber used in maintenance-of-way work. These follow the lines of similar specifications adopted by the Master Car Builders' Association and various lumber associations for material to be used in railway car work. The desirability of such uniform specifications is evident, and has been proved by the results of experience with timber for bridge, trestle and car work. J. H. Waterman, C., B. & Q. Ry., submitted a letter from the Railway Storekeepers' Association, requesting that the specifications be adopted.

TRACK.

This report dealt with several subjects. It included specifications for switches and frogs, but stated that it is too early to prepare specifications for manganese-steel in such track work, as there is insufficient information regarding the character and life of this metal. As to special fastenings for attaching rails to treated ties, it reported that experience with these (and even with treated ties) in this country is too limited to permit of conclusions being drawn.

FROM THE MANAGER OF THE QUEBEC AND SAGUENAY RAILWAY.

J. F. Guay, M. Can. Soc. C.E., Quebec, who is Manager of the Quebec and Saguenay Railway, a contract for the construction of 56 miles of which was recently awarded, writes:—

"The Railway and Marine World is indeed very interesting and contains a lot of valuable information.

"Your recent enquiry of me is another proof of what I told you in a former letter about the reliability of the information published in your paper."

A sub-committee had a long report on spiral transition curves, supplemented by a paper on the length of such curves. This latter aimed to establish a relation between the length of the curve and the elements of radius, super-elevation, speed and the rate of rise of train on the outer rail. The committee recommended an increase of 50% in length of transition for minor curves when this will not seriously affect the cost or adversely affect the degree of curve. The 10-chord spiral was recommended also. The report stated that spiral curves need not be used when the super-elevation for highest permissible speed does not exceed 2 ins. Prof. Talbot, University of Illinois, moved that this should apply also where the distance between the tangent and the parallel tangent of the offset is less than 0.2 ft., or ¼ in. It is a question whether it will pay to put in a spiral where the track will not be shifted more than ¼ in. from a tangent and circular curve. However, this change was not adopted.

BALLAST.

The principal feature of this report was a discussion as to the proper depth of ballast. No conclusions were presented, but a table was given to show the practice on various railways. The discussion, however, bore almost exclusively upon the subject of the proper size of stone ballast, and there was the usual wide variation in opinion. The committee recommended ¾ in. to 2½ in. Mr. Morse, A., T. & S. F. Ry., preferred to raise the maximum to 2¾ ins., while Mr. Meade, of the same road, preferred to reduce it to 1½ ins., on the ground that track cannot be surfaced properly when laid with 2½ in. stone. Some members proposed also to reduce the minimum size to ⅝ in., but it was pointed out that this would not be a commercial product. Further, while this size might be satisfactory with hard trap rock, it would be otherwise with limestone and similar material that is liable to pulverize under load.

The committee had specified also that the stone should pass "in any position" through a 2½ in. ring. This was considered to be an impracticable requirement, while it enforced it would mean the use of 1½ in. stone. M. L. Byers, Mo. Pac. Ry., has had experience in re-ballasting track laid originally with stone of such size that it seemed the only requirement was that it should go between the ties. Such track was very hard to maintain in surface, but by filling in finer material and raising track so as to get the large stones well below the ties the result was to get a very good track and a solid foundation. Where large stone is laid in re-ballasting, it should be distributed and track first brought to within 1 in. of final grade. Then a top layer of finer material should be distributed to complete the surfacing. It was suggested also that the committee should determine the proportions of stone of different size in the ballast.

FENCES, CROSSINGS AND SIGNS.

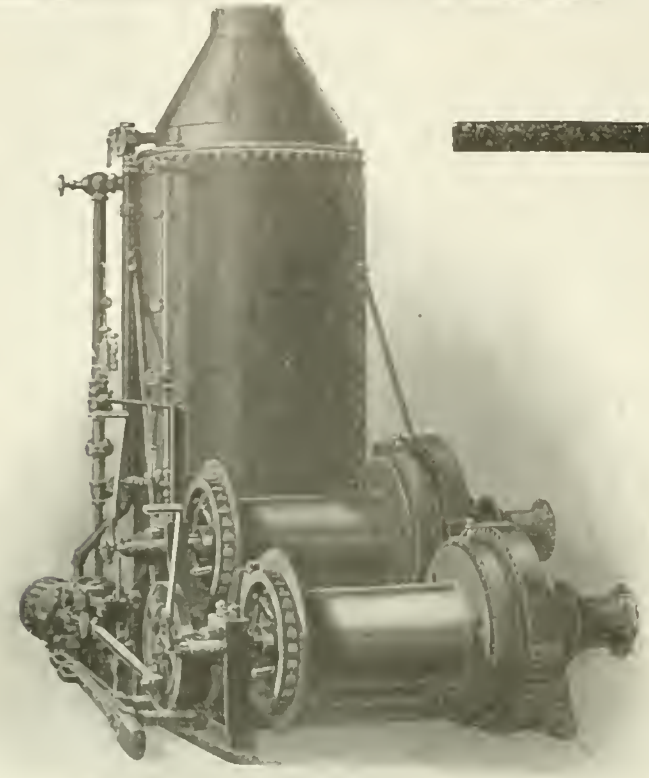
As a result of careful and continued investigations as to means of obtaining fence wire that will resist corrosion, this committee finds that no new process offers any advantage over the old, and that the applied galvanized coating (by special treatment) is the best and only known economical process for protecting fence wire against corrosion. The committee recommends the use of wire which has received a special galvanized coating to stand four one-minute immersions in the standard copper-sulphate solution. The galvanizing to be done preferably after weaving. Concrete posts were recommended for railway fences. By request of the committee the report was referred back to it in order that it might be made more complete for next year.

WATER SERVICE.

The committee recommend specifications for wooden and steel water tanks, and submitted tentative specifications for reinforced-concrete tanks. The subject of track tanks was dealt with very fully in an appendix; this included a discussion of the action of the tender scoop in taking water. The specifications for wooden tanks were discussed at considerable length, the discussion including criticisms of several features. The hoops are specified to be round, half-round or half-oval; some members considered that flat hoops should be included, but a motion to make this change was lost. Last year the committee submitted specifications in skeleton form, and was requested to make them more specific; this year it was criticised as being too specific. Eventually the specifications (modified in several respects) were accepted as information.

SIGNALS AND INTERLOCKING.

This committee submitted specifications for insulated signal wire, aerial and underground cables, copper and iron line wire, copper-clad steel line wire, and iron bond wire. These were accepted without discussion. In answer to an inquiry as to what has been done in regard to



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the subject of uniform signal practice, it was stated that nothing can be done by this association until the subject is reported upon by the American Railway Association committee which now has it under consideration.

YARDS AND TERMINALS.

This report dealt mainly with the important features to be considered in the design of passenger stations of medium size, including particularly the track layout and the facilities for handling passengers and baggage. General plans were submitted for through and terminal stations, with tabulated information as to a number of existing stations. Other matters discussed were (1) the mechanical handling of freight, baggage and mails, and (2) the provision of special yards for interchange freight. It was recommended that at stations where large quantities of baggage are handled, this should be done at a level below or above the train floor. This was objected to by Mr. Courtenay, L. & N. Ry., who thought this would apply only to stations of the largest size. In reply, it was pointed out that at many places where grades are not already separated there is increasing demand for separating the grade of tracks and streets. In such revision, it is desirable to include the removal of baggage handling from the train platforms. Of 26 stations listed by the committee 13 are either above or below the steel level.

The committee recommended also that in planning passenger terminals, provision should be made for economical and efficient operation during the periods of activity which may be experienced within a period of 10 years. It was voted to change this to 20 years, although the committee pointed out that it would be very difficult to foresee the traffic developments of 20 years, and that such provision might involve apparently extravagant first cost. Mr. Kittredge, N. Y. Central Ry., thought that a 10-year plan would be outgrown before its completion, and referred to the way in which traffic increase has continually overtaken the several enlargements of the Grand Central Station in New York. Mr. Temple, Pennsylvania Ry., said that at the Broad St. station, in Philadelphia, the business increases 50% every 10 years; for 30 years the company has been enlarging the station every 10 years, and is now again facing the problem.

In regard to mechanical handling of freight, T. L. Condron, Chicago, referred to a terminal freight station now being built in which the freight will be handled by an electric telpherage system. The building is 240 by 400 ft., with 12 tracks on the lower floor and the team driveways and platforms (at right angles to the tracks) on the upper floor. A series of overhead runways on the upper floor (which is 34 ft. high) will carry travelling trolley hoists which will handle packages or trucks between the team platforms and the car platforms. Numerous hatchways are provided in the former platforms. W. A. Thompson, B. & O. Ry., stated that a pier of the Baltimore & Ohio Ry. at Baltimore is equipped with the telpherage system.

ECONOMICS OF RAILWAY LOCATION.

The report of this committee was to the effect that it has not been able to obtain the detailed operating statistics which are necessary for proceeding with its work in regard to the economics of line and grade revision. It has prepared a statement of the information desired, and it is for the railways to undertake the time and expense of preparing this if they desire to benefit by the work proposed by the committee. Mr. Kittredge, N.Y. Central Ry., stated that in regard to operating results many railways know that grade reductions, etc., do produce very substantial economy, but they have not (and cannot get) the detailed analysis of such results, as desired by the committee. Mr. Begier, B. & O. Ry., referred to experiments showing that the train resistance at very low speeds (below 5 m. p. h.) is exceptionally high. This has been the experience in starting heavy trains out of yards, and as a result some $60,000 have been spent in reducing grade at two yards to enable trains to start readily. No action was taken upon this report.

ELECTRICITY.

This is a new committee appointed to investigate matters relating to the track equipment, etc., of steam railways having electrically operated sections. The principal part of its report related to the clearance limits between car equipment and track equipment on third rail lines. These limits were shown for several steam and interurban railways (the latter handling steam railway cars). The maintenance of track (including organization and methods), the protection of metal structures, the protection of the third rail, and the connections employed at switches and drawbridges, were among the other subjects touched upon. There was also an extended bibliography of reports and papers on electric traction. The plan of organization for maintenance recommended that this work should be in the hands of the regular maintenance-of-way department. There were a few remarks as to the proper determination of the gauge of the third rail, and also as to the proposed organization for maintenance, but further than this there was no discussion.

IRON AND STEEL STRUCTURES.

This committee submitted specifications for the erection of railway bridges. It made the suggestions that someone be employed to collate reports of special interest on subjects connected with the design and maintenance of steel bridges, and that a study of the design of large steel columns be taken up. A sub-committee report the results of impact tests on long truss spans of the Baltimore & Ohio Ry. bridge at Havre de Grace, Md.; these do not appear to modify the conclusions presented in a former report. No work has been done in tests for impact on short spans, but special apparatus is being designed for these tests as well as for tests of secondary stresses.

There was an extended discussion of the specifications for bridge erection. Several clauses were discussed and modified, and eventually the specifications were referred back for further consideration. A clause requiring the contractor to check the engineer's measurements was objected to by some, while others approved it as tending to provide against possible trouble in fitting the superstructure to the masonry. As a rule the engineer who has established the line and levels is not on the work during erection, and it has happened in several cases that the steel work proved too long to fit the masonry. Mr. Loweth, C., M. & St. P. Ry., thought that the specifications should permit the use of sheet lead under bed plates, but the committee explained that after due consideration it had decided against this practice. Its specifications require the use of cement grout or mortar or rust cement. Much of the discussion dealt with clauses concerning the relations between the railway company and the contractor.

WOODEN BRIDGES AND TRESTLES.

The report dealt with various aspects of piling, including wood and concrete piles, sheet piling, pile driving, pile drivers, and pile protection. As to this last question it was concluded that an effective protection against wood borers is afforded by filling sand between the pile and vitrified clay pipe extend from 12 or 24 ins. below the same distance above mud line; owing to the expense this method is warranted only for treated piles.

The subject of pile driving is one of very general interest and experience, and the committee's statement of principles of practice for this work received considerable discussion. A good part of this related to the proper methods of using the water jet. Mr. Courtenay, L. & N. Ry., did not think it would be economical to use this for boring holes in clay soil, previous to setting the piles; he had used it in this way in exceptional cases to enable 70 ft. piles to be set in the leads of a 50 ft. pile driver. Mr. Steffen, Bos. & Albany Ry., spoke of using a clay auger to loosen the ground and facilitate the driving of piles in hard soil. Mr. Courtenay was of opinion that the jet pipe should be attached to the pile, especially for work in deep water, but Prof. Jacoby, Cornell University, thought that in several there is more difficulty of the pipe clogging when it forms a part of the pile. The tendency of present practice is to use the jet pipe separately. The questions of sharpening the points and using pile shoes were discussed also. Mr. McNab, Grand Trunk Ry., objected to the committee's suggested use of a cap in driving, but Prof. Jacoby remarked that the advantages of this detail are not sufficiently well appreciated. He referred to a case where long yellow-pine piles could not be driven without injury unless a cap was used. Mr. Stevens, Ph. & Read. Ry., had had similar experience, using caps of soft wood; if these were not used, the piles would split, in spite of the usual rings.

MASONRY.

A prominent feature of this report was its discussion and analysis of different methods of waterproofing concrete. A large amount of information was presented, including the description of methods used on a number of individual structures, but the information was not of such a character as to warrant any definite conclusions. Other matters briefly considered were the use of reinforced-concrete trestles and the ability of monolithic concrete masonry to resist failure under various conditions.

The discussions related almost entirely to the merits of wood and concrete trestles, and it was stated that if the cost of creosoted timber trestles is capitalized it does not compare favorably with that of reinforced-concrete trestles. On the Illinois Central Ry. several thousand feet of creosoted trestles were burned last year, in spite of the fact that they had ballasted floors. This timber does not take fire readily, but when the fire is well started it becomes uncontrollable. On the Chicago, Milwaukee & Puget Sound Ry. all decks of timber structures are protected by metal or ballast, and the cost of such fire protection must be taken into account in a comparison of costs. The Nashville, Chattanooga & St. Paul Ry. uses galvanized metal covering over the stringers and caps at a cost of 50 cts. per ft. of structure. The metal will last from three years on main track to six years on branches, but it is expected that the new so-called pure iron will last for an average of seven years. Stringers protected in this way show practically no deay after many years service.

A comparison of cost was made by one member as follows: For a timber trestle costing $8 per ft. maintenance, 75 cts.; fire losses, 5 cts.; interest ($8 at 5 per cent.), 40 cts.; total, $1.20. For a reinforced-concrete trestle costing $30 per ft.; interest charges, $1.50; track maintenance, 20 cts.; total, $1.70.

BUILDINGS.

The special feature of this report was an extended discussion of roof coverings for railway structures, with their respective merits, and their relation to the fire protection question. There were submitted also papers dealing with the work of

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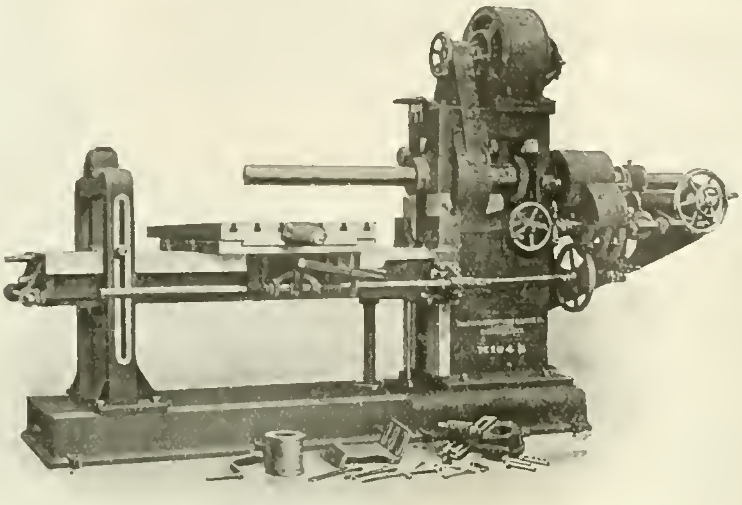

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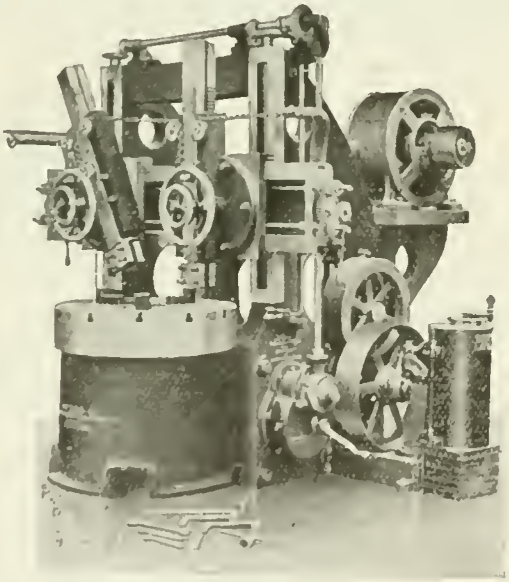

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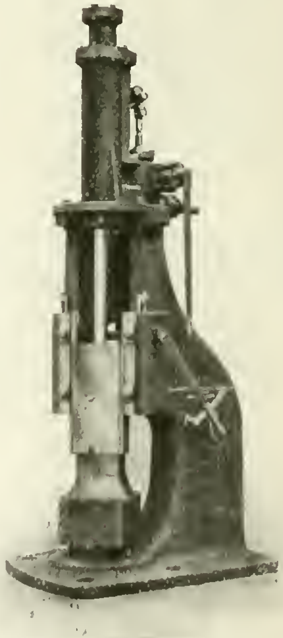

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UNIFORM GENERAL CONTRACT FORMS.

This special committee submitted a form of agreement and contract. The first is a two-page sheet or folder having the introductory statement on one page and the space for signatures on the other page. This alone will suffice for small or unimportant contracts, but for more important work the contract can be enclosed and thus made a part of the agreement. Specifications also may be enclosed, or they may be attached to the outside.

RULES AND ORGANIZATION.

This committee recommended some changes in the general rules for track employes. It presented also an interesting compilation of the rules of different railways covering certain specific matters (ballast, ballasting, track drainage, loading cars, care of signal batteries, etc.); for each subject the committee gave its own suggested rule. Beyond a few suggestions as to verbal changes there was no discussion.

RECORDS AND ACCOUNTS.

This committee submitted proposed standard forms for sidetrack records, bridge estimates, building service estimates and water service estimates. One object of the first of these is to give to the officers having charge of maintaining and changing sidetracks information as to the conditions of maintenance; this is especially valuable where the tracks are owned in part by private parties or corporations who are charged with a proportion of the cost of the maintenance work done by the railway.

BRINE DROPPINGS FROM REFRIGERATOR CARS.

This special committee reported that hte Master Car Builders' Association has approved the recommendations of its own committee acting jointly with this committee and has made its report to the American Railway Association. The American Railway Engineering Association therefore should request the American Railway Association to adopt the recommendations, and should request the maintenance-of-way departments of the railways to provide the facilities recommended. The plan provides for retaining all salt water in the ice tanks, and for draining these tanks only at icing stations. These stations must be provided with facilities for the disposal of the brine thus drained from the cars. The report was adopted and the committee discharged with thanks for the completion of its work.

CONSERVATION OF NATURAL RESOURCES.

This report reviewed the conservation movement undertaken by the federal government in connection with various technical and commercial organizations. It gave also the resolutions in regard to fire protection of forests and protection of timber resources in general, which were adopted by the Lake States Forest Conference as a result of the very serious forest fires of last year.—Engineering News.

◆

Railway Lands Patented.—Letters patent were issued during February in respect of Dominion lands in Manitoba, Saskatchewan, Alberta and British Columbia, to railway companies, as follows:—

	Acres.
Calgary and Edmonton Ry.	156.00
Canadian Northern Ry.	1.760.13
Canadian Pacific Ry.	545.93
Grand Trunk Pacific Ry.	256.91
Manitoba and North Western Ry......	6.37
Manitoba and South Eastern Ry......	160.00
Total	2,885.34

Recent Dominion Legislation.

The Governor General assented April 4 to the first lot of acts passed by the Dominion Parliament at its current session. Of these 37 were in connection with steam and electric railways, and one in connection with a canal company. Following is a list:—

Alberta Central Ry.—Authorizing the building of additional lines.

Athabasca Northern Ry.—Extending time fixed for construction.

Bay of Quinte Ry.—Respecting company's powers.

British Columbia Central Ry.—Incorporation.

British Columbia Southern Ry.—Extending time for building lines authorized.

Brockville, Westport and North Western Ry. — Respecting company's powers.

Burrard, Westminster Boundary Ry. and Navigation Co.—Extending time for construction.

Campbellford, Lake Ontario and Western Ry.—Extending time fixed for construction, and authorizing building of line from Bathurst to near Locust Hill, as an alternative to route previously authorized.

Canadian Inter-Mountain Ry.—Incorporation.

Canadian Northern Branch Lines Co.—Incorporation.

Canadian Northern Ontario Ry.—Extending time for construction, and authorizing building of additional lines.

Canadian Northern Quebec Ry.—Extending time for construction.

Canadian Western Ry.—Respecting company's powers.

Collingwood Southern Ry.—Extending time fixed for construction.

Dominion Atlantic Ry.—Authorizing amalgamation with C.P.R.

Georgian Bay and Seaboard Ry.—Extending time fixed for construction.

Grand Trunk Ry.—Respecting company's financial powers and authorizing acquiring of certain properties.

Guelph and Goderich Ry.—Extending time for construction.

Hamilton, Waterloo and Guelph Ry.—Extending time fixed for construction.

Indian River Ry.—Extending time for construction.

Kettle River Valley Ry.—Extending time for construction and changing name to the Kettle Valley Ry. Co.

Kootenay and Arrowhead Ry.—Extending time for construction.

Lachine, Jacques Cartier and Maisonneuve Ry.—Authorizing company to connect its lines with those of certain other companies.

Lake Champlain and St. Lawrence Ship Canal Co.—Extending time for construction.

London and North Western Ry.—Extending time for construction.

Manitoba and North Western Ry.—Extending time for building of uncompleted lines.

Manitoba Radial Ry.—Extending time for construction.

Niagara, Welland and Lake Erie Ry.—Incorporation.

Ontario, Hudson's Bay and Western Ry.—Extending time for construction.

Ontario Northern and Timagami Ry.—Extending time for construction.

Ottawa, Northern and Western Ry.—Extending time for construction.

Orford Mountain Ry.—Extending time for construction.

Pacific, Northern and Omineca Ry.—Extending time for construction.

Pontiac Central Ry.—Extending time for construction.

Quebec, Montreal and Southern Ry.—Extending time for construction.

Southern Central Pacific Ry.—Extending time for construction.

South Ontario Pacific Ry.—Authorizing building line from Hamilton to Guelph, Jct., Ont., and extending the time for construction of other lines.

Walkerton and Lucknow Ry.—Extending time for construction.

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Quebec and Lake St. John Railway.

At a meeting in London, Eng., Mar. 17, to which a short reference was made in our last issue, to confirm an agreement provisionally entered into with the Canadian Northern Ry., to exchange the Q. & L. St. J. R. Co.'s bonds for new 4% debenture stock guaranteed as to principal and interest by the Canadian Northern Ry. Co. it was stated that the agreement provides that the Q. & L. St. J. R. Co. is to create a new debenture stock, secured by trust deed in favor of the National Trust Co., and the British Empire Trust Co., to be secured as a first charge on the whole property of the company, and sufficient to provide for the taking over at the conversion price the whole of the company's bonds and the Lake St. Joseph Hotel bonds; further to pay for additional rolling stock, $430,000; to provide an amount equal to $30,000 a mile of railway that may hereafter be built by the Q. & L. St. J. R. Co.; for an amount equal to the amount by which any mortgages guaranteed by the Dominion or Provinces that may hereafter be secured on the company's lines in priority to the new debenture stock exceed $30,000 a mile on the lines on which they are secured as a first mortgage; to pay the cost of any right of way or land purchased by the company for terminals, etc.; for an amount equal to the cost price of any securities of any other company deposited with the trustees and specifically mortgaged by way of first mortgage as additional security for the new stock, and for the cost of providing further betterments in connection with the undertaking. This, it was stated would amount to about $6,600,000. The agreement also provides for the creation of charges on any extensions or new lines built, ranking before the new stock, provided such charges are guaranteed as to principal and interest by the Dominion or Provincial Governments. The new stock is guaranteed unconditionally by the C.N.R. Co. and bears interest at the rate of 4% per annum, the first payment of a full half year's interest being due on July 1. The terms on which the company's bonds are to be exchanged for the new stock are as follows: prior lien bonds, at par; first mortgage bonds at 70%; income bonds at 13%, of their face value respectively. The resolutions were carried by each class of bondholders separately.

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The building which the G.T.R. has erected in the Crystal Palace grounds, London,, Eng., in connection with its exhibit at the Festival of Empire, to be held there this year, is a reproduction, on a small scale, of its passenger station, now approaching completion, at Ottawa. The building will accommodate the exhibits of the G. T. R., G.T.P.R. and G.T.P. Coast Steamship Co., and will be in charge of S. W. Cummings.

The Minister of Railways in reply to a question asked upon the voting of $2,500 as the contribution of the Government Railways to the Faculty of McGill University, Montreal, towards the foundation of a school of railway engineering and transportation in general in connection with the Faculty of Applied Sciences, said recently that if any other university in Canada were doing the same work, he would be glad to consider its application.

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Discussion on Report on Ties by Can. Soc. C. E. Committee.

In our last issue we published letters written to us by a number of railway engineers and roadmasters in reference to the report of the Canadian Society of Civil Engineers' committee urging the adoption of longer ties and recommending that tests be made with 10½ ft. ties. The fact that letters were received from nearly all portions of the Dominion show that a very deep interest is taken in the question and there is no doubt the information which some of our subscribers have contributed is a most valuable addition to the literature on the subject. Following are some letters which have been received since our last issue went to press.

ANGUS SINCLAIR, C.E., Contractor Canadian Northern Ry., writes from Toronto:—"I have your letter re the most suitable length of railway ties, and asking my opinion of the report read recently at Winnipeg by a committee of the Canadian Society of Civil Engineers. Looking at it largely from the point of view of a construction engineer, I do not think it is a practical question today. In the old days, when ties were looked upon as so much local wood, costing little more than the labor of making them, the change from 8 to 10½ feet might have been introduced, if deemed necessary, without much protest from those financing the railways, but now that tie timber is scaled, and the contents sold as so much merchantable timber, the change would almost, if not quite, double the cost of ties, and make the use of the longer ones prohibitive on any but the richest railways.

"Even looking at it from an operating engineer's point of view, I think the increased length suggested an extreme one, and not warranted by experience. It is quite true that the loads on ties have increased of late years from 200 to 300%, while the carrying capacity has only increased about 50%, but the committee overlooked the important fact that there was a very large surplus factor of safety and strength in the proportions of the 8 ft. tie to meet the increased weight and momentum of the present-day engine, and the more destructive short coupled coal and ore cars.

"I differ from the report also as to the reasons why the centres of ties are not more firmly packed. In my experience nearly all ties that break do so in cold weather, the reason being that the centre of the track, being farthest from drainage, is more susceptible to heaving by frost, causing a ridge down the centre over which the ties are broken. If I am right, lengthening the tie would only be shifting the breaking point from the inside to the outer end of the tie.

"I have used ties of various lengths from 8 to 12 ft. over muskeg embankments, and agree with T. C. Burpee that more broken ties were found among the longer ones. This was caused by the undue spring given the tie by too hard packing. When the ballast froze, the hard ridge was transferred to the outside of the rail, and the impact of the heavy engine and cars caused the tie to break.

"While I do not think the longer tie would bring about the result that the maintenance of way people expect from it, I am quite certain its adoption would add considerably to the cost of construction, outside of the increased cost of the tie. There is no doubt about the fact that a shoulder of ballast is necessary, no matter what length of tie is used. This would mean an increased quantity of ballast and a wider roadbed to hold it, both costing money.

"To my mind the increased weight of engines and cars is not the serious point, but their increased height, which gives them, when running, a pile-hammer thrust which is fatal to the road-bed, and the remedy is not to be looked for so much in the length of the tie as in the quality of ballast placed under them. You have only to ride on one of these modern engines to realize how necessary to their safety is an even surface, and with what force they hit a low side or joint. The remedy lies largely in uniform drainage, uniform quality of ballast, and, as near as possible, uniform width of ties. Extremely wide or narrow ties are to be avoided.

"With ties as with all other matters in life, the happy medium is much to be desired. I think as soon as a railway can afford to, it should begin using crushed stone ballast, and the question of the length of tie would be largely eliminated."

JOHN D. EVANS, M.Can.Soc.C.E., Chief Engineer Central Ontario Ry., writes from Trenton, Ont.: "I have not had any experience with the longer ties, but in my opinion they would be objectionable, more particularly if the depth of ballast should be reduced (as suggested) out towards the ends of the ties. In that case the ties would become frost-bound at the ends earlier as the winter set in, and would be released earlier in the spring. With the 8 ft. ties we endeavor to have the full depth of ballast out beyond the ends of the ties in order that the frost will act as uniformly as possible throughout the whole length of the tie. In the absence of full and complete experiments in this latitude on the use of long ties during a period of at least one full year, I would not desire to express a favorable opinion or otherwise on the use of the longer ties."

J. GRANT MACGREGOR, A. M. Can. Soc., Chief Engineer, Alberta Central Ry, writes from Red Deer, Alta:—"I regret that I have not been able to give this subject the careful study that it deserves in order to be in a position to express an independent opinion. I am, however, of the opinion that owng to the increased weight of rolling-stock, the most serviceable length for track ties would lie somewhere between the two extremes, 8 and 10½ ft. I consideer that the ordinary length, 8 ft., has never been sufficient to get the best results from the distribution of the weight over a roadbed of standard width. I am also of the opinion that any increase in the length of the track tie should be accompanied by a proportionate increase in its thickness."

D. McCOOE, Superintendent of Grade Separation, Grand Trunk Ry., writes from Toronto:—"I am not in favor of the 10½ ft. ties for the following reasons:—

"Assuming that these ties had all the merits claimed for them (the extra supporting area), the percentage of breakage would be very large and the full benefit would not be obtained until all the ties in the track were the same length, 10½ ft. long, and while this could be done in building a new line, it would be impracticable in making ordinary renewals, and would require from six to 12 years to make this change, according to the location and volume of traffic. In the meantime it would be very difficult to maintain a good riding track on account of the uneven length of the ties.

"With regard to size, I believe a 9 ft. tie 7 ins. thick and from 8 to 10 ins. face, would give better results than either the 8 ft. or 10½ ft. lengths, as it would give a desirable increased supporting area for both the base of rail and ballast, as well as prolonging the life of the ties by reducing the mechanical wear caused from the rails cutting into them. This change from 8 to 9 ft. ties could be made by renewals gradually, with slight, if any, effect on the riding condition of the track.

"In reference to not requiring any additional increased width of the ballast section with the longer ties, this can only be done by reducing the amount of ballast under, or taking it away from the ends of the ties, as shown in sketch on page 213 of your March issue. This method would mean changing the present standards on many roads, or in other words, robbing Peter to pay Paul.

"From observation and practical experience, I believe it necessary to still retain a good shoulder of ballast at the ends of the ties to hold the track in line under high speed and from the lateral motion and side thrust of heavy power."

S. J. COVEY, Roadmaster, Grand Trunk Pacific Ry., Wainwright, Alta., writes:—"I have read with considerable interest the report on ties submitted by the committee of the Canadian Society of Engineers at its annual meeting of that body, as reported in your journal for March, and in response to your invitation, beg to offer the following observations:—

"Much may be said for and against the adoption of a longer track tie, but after a practical experience of track work, covering a period exceeding 20 years, I find myself totally unable to support the committee's recommendation.

"I am not at all in favor of using cross ties of greater length than 8½ ft., and would much rather see a standard tie of 8 ft. adopted, than any length in excess of 8½ ft., for the following reasons:—The increased cost of longer ties, owing to the scarcity of good tie timber, and the additional cost of handling and transporting from the time that the ties are received from contractor until they are placed in track, would, I am satisfied, be at least 30% as between 10½ ft. and 8 ft. ties, and with less satisfactory results. Another factor to be reckoned with is the present scarcity of labor on sections and in gangs employed at maintenance work. I believe that most Roadmasters will agree that in making renewals it would mean slow and tedious work making a change of 8,000 or 9,000 ties during a season with a force of one foreman and one or two laborers on each section. Again, 10½ ft. ties would doubtless increase the tendency of track to heave during winter, and the proposed extra length outside of rail would be responsible for ties breaking under rail.

"I notice in the committee's report the plea that a 10½ ft. tie would obviate the necessity for shoulder on ballasted track. I cannot share this view, because the shoulder at ends of ties answers more than one purpose, the most important of which, in my opinion, is that in the spring of the year, when frost is going out, the shoulder prevents frost from leaving track at ends of ties and under rail first, thereby minimizing the breakage of ties between rails or in centre of track.

"On mud or unballasted track I would estimate the life of a 10½ ft. tie at not more than three years, and I have no hesitancy in predicting that 50% would break under rail in two years. I have witnessed a thorough test of 10 ft. fir ties, with about this result. It is true that while the weight of engines and rolling stock has greatly increased in the last few years, inadequate attention has been bestowed on the strengthening of track, but closer study of the track problem will reveal a remedy. I would be pleased to make a test of longer ties, but am quite convinced that a 10½ ft. tie is too long to meet the requirements."

WM. YOUNG, General Roadmaster Temiskaming and Northern Ontario Ry., writes from North Bay, Ont.: "Referring to the report by the Canadian Society of Civil Engineers committee recently held in Winnipeg, which appeared in your

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March number. The subject is a very important one and well worth all the time spent in discussion It is a well known fact that the natural tendency of all railways, more especially trunk lines, for the past 20 years has been to increase the capacity of all their rolling stock without increasing the stability of the road-bed in proportion, except bridges and rails, it is also true that the number of 8 ft. ties has been increased from 16 to 20 and 23 ties to a rail length of 33 ft. While this has increased the bearing area per rail length, the bearing is not in the right place.

"What is actually required is a bearing in width instead of in length. It is too much like the high-heeled boots which were greatly worn some years ago, the feet of the users were continually rocking from one side to the other. The question of longer ties has been frequently discussed at roadmasters' conventions in the United States, with recommendations strongly in favor of longer ties. It is a well known fact amongst all maintenance of way men, track men in general, that with the present 8 ft. ties it is one of our hardest troubles to keep the track from getting centre-bound. No matter how carefully ties are tamped, the track will in a short time become centre-bound, and the poorer the ballast the quicker it will become centre-bound, as the material being less porous, demands filling the centre portions of the ties, midway between the two rails, full, so as to drain the water from the surface, otherwise if left open it will quickly commence to churn in wet weather, and in turn will rapidly distort the whole track's surface, whereas with better ballast the centre portion of it can be left without tamping and will remain longer open, the better quality of ballast not shaking under the tie as readily as the poorer quality. The evil of centre-bound track is better overcome by the use of crushed rock ballast, with 8 ft. ties. The opening left under the tie midway between the rails remains so for a much longer period, giving better results, both as a labor saver and a better riding track.

"It is evident that the members of the engineers' committee based their calculations in having as much of the tie outside of the outer base of the rail as between those two points, when they recommended a 10½ ft. tie as proper length. When basing calculations from the centre of the rail, instead of the outside of rail base, the proper length of the tie would be 9 ft. 10 in. Any increased length over 8 ft. would be a decided benefit. Taking 9 ft. as a standard length of tie for ordinary sub-grade composed of solid material, and from 10 to 12 ft. on muskeg formation (according to depth and other conditions) would be a decided betterment.

"It is the general practice to hard-tamp an 8 ft. tie, 18½ ins. from the centre of a rail (with 5 in. base) outside, and 15½ ins. on the inside from the same point, so as to give the greater support from the outside of the rail. Twenty ties 8 ft. long with 9 in. face in a rail length of 33 ft. tamped in the manner outlined, would give a bearing area of 12,240 sq. ins. allowable bearing surface. On the other hand, 18 ties 9 ft. long with 9 in. face per 33 ft. rail, with allowable inside bearing surface in proportion to the length outside from centre of rail, would give a bearing surface of 14,904 sq. ins. or 2,664 sq. ins. more bearing surface than with the 20 ties 8 ft. long in the same length of rail and with only two lineal feet more timber with 18 ties 9 ft. than 20 ties 8 ft. long.

"On some main lines I have counted as many as twenty-three 8 ft. ties per 33 ft. rail, the spacing of which was so close that it was almost impossible for the trackmen to shovel out the ballast between the ties for the purpose of tie renewals. With regard to the increase of width in ballast section, for a longer tie I quite agree with the engineers' committee that it would not be necessary, as with the present arrangement of 8 ft. ties it is necessary to have at least one foot of ballast at the end of the tie to hold the rocking or centre-bound track in reasonable alignment. With the increased length of tie we would have more bearing surface outside of the rail, giving support where required.

"There is no doubt in my mind that main line tracks equipped with 9 ft. ties would overcome the extra cost of ties. Even supposing 20 were used per 33 ft. rail, the extra cost of material would be more than offset by the reduction in cost of labor maintaining track in surface with 8 ft. ties. In the northern portion of the country where I am located, I find that our main line track is so much centre-bound in the spring of the year that the only remedy is to start at one end, giving a light surface lift throughout tamping the whole tracks so as to get the bearing from the centre to the end of the ties in order to get the track into good running condition.

"From a practical standpoint, I am of the opinion that on the whole the engineers' committee have struck the keynote to improved road-bed condition."

A trackmaster on the Intercolonial Ry. writes from Moncton, N.B.:—"In compliance with your request asking for an expression of opinion in regard to railway ties, I would say I very much favor the continuance of the 8 ft. tie in preference to the 10½ ft. length, as the latter would be impracticable in yards; and on the main line would have a tendency to hold frost, making it much more difficult for the road to come to surface in spring, when frost is going out of the ground, and in many cases in taking unever bearing, they would be much more liable to breakage Of course, this only applies to climates, such as we have to contend with on the Intercolonial Ry. Our past experience with the 9 ft. tie would seem to bear this out. I, however, would recommend an increase in length to 8½ ft, which would give a more uniform bearing in conformity to gauge or road, which is 4 ft. 8½ in. and allow us to use a longer brace while skimming in winter, as well as giving all the bearings a 6 by 8 tie would be able to stand."

L. S. RUDDER, Resident Engineer, Canadian Pacific Ry., writes from Toronto:—"I do not see that any benefit might be derived from the use of 10½ ft. ties would compensate for the following advantages derived from the uese of 8 ft. ties.

"Renewal of ties in rock cuts, or earth cuts. It would be difficult to renew 10½ ft. ties without considerable expense widening cuts.

"Embankments, large expense to widen same.

"In winter, when track heaves, the 10½ foot tie would tend to make very rough track, especially at side heaves, and through covering so much more surface.

"As ties generally start to decay under rail the percentage of broken tie ends would begreatly increased, and lifee of tie shortened considerably.

"Inconvenient for section men to handle.

"There is a much better chance of getting a good 8 ft. tie from the contractors than the one 10½ ft. long.

"Altogether, considering cost of material and large amount of expenditure that would be necessary before we could use 10½ ft. ties, and also the extra expense that would be incurred through the use of such ties as against the advantages to be derived I do not favor 10½ ft. ties. I think the 8 ft. tie a good length and if improvement on same is to be made, increase the thickness firstly and secondly, the width.

"A standard 7in. by 8 in. 8 ft. tie with a large amount of good ballast and heavy rail, should make a good riding road if givene proper care and attention.

"I regret not having read the Canadian Society of Civil Engineers committee's report, as published in your March issue, as that number was mislaid in my office and I have not been able to locate it."

We sent Mr. Rudder another copy of our March issue, and received a second letter from him, as follows:— "Having received another copy of your March issue and read the matter therein referring to the proposed lengthening of ties, I beg to add the following remarks to my previous letter:—

"There are some instances where 10½ ft. ties could be used with a little additional ballast; but the greater portion of tracks would require a large amount of ballast, and a very large amount of widening of roadbed generally. Especially would this be the case with all roads except some first class main roads. The diagram certainly looks all right, but in actual practice we do not often see it in other than cases already stated.

"If then the quantity of ballast must be increased to accommodate the 10½ ft. tie, and as all track when equipped with 10½ ft. ties would require a great deal more ballast for maintenance reballasting, than track with 8 ft. ties, I am of the opinion that it would be better economy to increase the present stan-

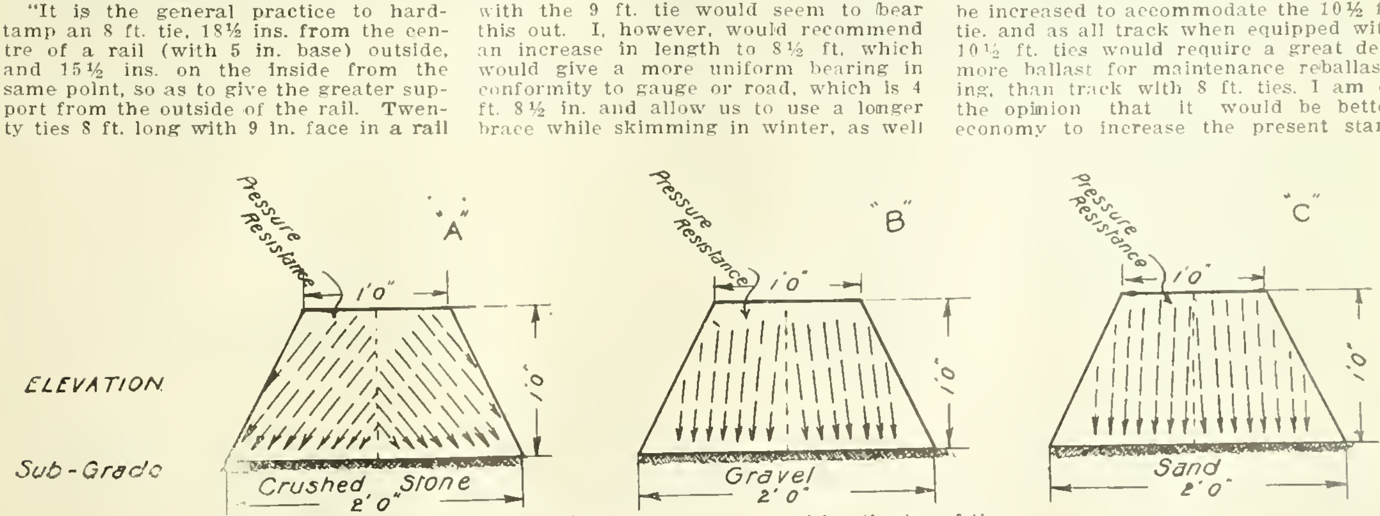

Diagram referred to in L. S. Rudder's letter re proposed lengthening of ties.

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dard of ballast. Firstly, to use a better quality of ballast, and secondly, to increase the depth of ballast under tie. For in connection with better quality and increased depth of ballast, we practically overcome the objections to the 8 ft. tie. that the bearing surface does not afford sufficient resistance to the live road to allow of trackmen maintaining good line and surface. A track laid with good 8 ft. ties equipped with a good type of tie plate and crushed stone ballast will maintain better line and surface than similar track with gravel ballast, and I doubt very much that 10½ ft. ties on gravel ballast would keep in as good surface and line conditions as 8 ft. ties on crushed stone. The accompanying diagrams illustrate what I refer to. Consider A., B. and C. to be conical shaped heaps of stone, gravel and sand, and that a dead load of say 100 lbs. were placed on top of each, the crushing and spreading would be very noticeable with sand, and would decrease to a very small quantity with broken stone, and if subjected to a good rainfall we can imagine what would happen to the sand pile under the load.

"The crushed stone ballast provides the necessary grip on bottom surface of tie, and affords sufficient resistance both vertical and lateral to give a uniform distribution of live load on sub-grade, and thus allow of better surface and line to be maintained on track, and reduce the shifting and burying of ties to a minimum.

This is shown in cut A. Cut B shows gravel balast, the particles are invariably rounded and smooth and this ballast is always shifting under live load. C shows sand ballast which spreads easily and shifts under load, wind and rain.

"Therefore, I do not advocate increasing the length of tie for the primary purpose of distributing a load and consequently preserving the line and surface of track. It would be better to consider the importance of ballast if even the initial cost is greater than the cost of equipping track with 10½ ft. ties, as the class of non-shifting ballast that will fulfill the requirements of drainage, etc., will transmit and distribute the live load on the sub-grade in a manner that will reduce the defects of load distribution complained of as much as 10½ ft. ties will. With the long tie cure we go around the obstacle and get rid of it temporarily as long as the tie lasts. In the good ballast cure, we get rid of the obstacle, and the money saved is equal to the difference between the life of a tie and life of a good ballast plus the large benefits accruing from the use of good ballast.

"Where the sub-grade is very soft formation, as across muskegs, long ties are used to advantage, and this is because sub-grade won't bear the load, but should not serve to prove that long ties should be used because inferior ballast will not distribute the load on a sub-grade that is capable of giving required resistance when live load is transmitted uniformly."

◆

Recent Quebec Legislation.

Among the acts passed at the recent session of the Quebec Legislature were the following affecting transportation interests:—

Development Co. of Canada.—Incorporation.

Kamouraska and L'Islet Ry.—Incorporation.

Montreal and Northern Colonization Ry. Co.—Incorporation.

Montreal and Southwestern Ry. and Power Co.—Incorporation.

Montreal Street Ry.—Amending acts relating thereto.

Montreal Tramways.—Incorporation.

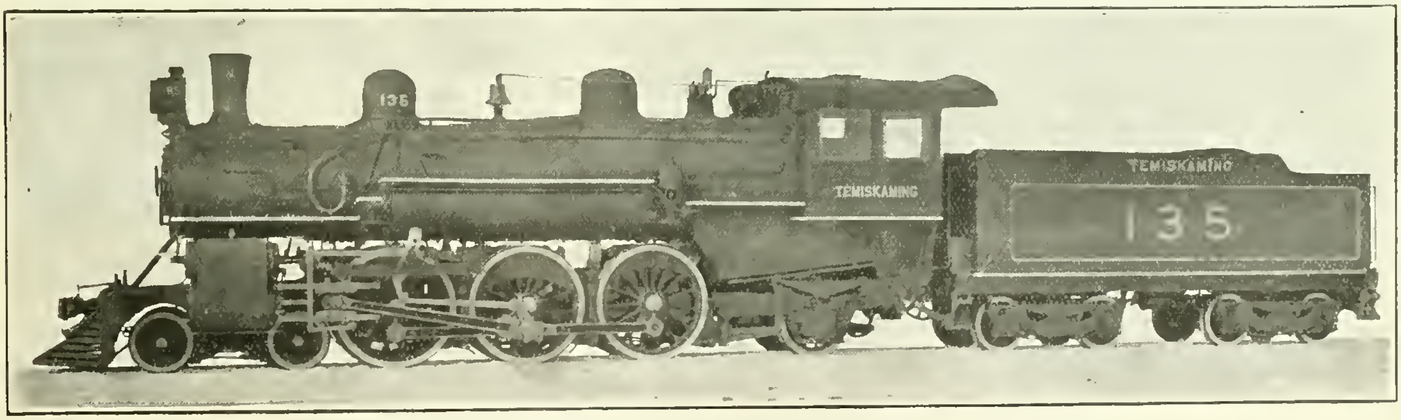
Public Utilities Commission.—Amending Revised Statutes of 1909 with respect thereto.

Quebec and Island of Orleans Ry.—Amending Act of Incorporation.

Quebec Eastern Ry.—Incorporation.

Richmond, Magog and Stanstead Co.—Incorporation.

Roberval and Saguenay Ry.—Incorporation.



Temiskaming and Northern Ontario Railway Pacific Type Locomotive.

T. & N. O. Ry. Locomotives.

The Temiskaming and Northern Ontario Ry. ordered four Pacific type locomotives last year from the Canadian Locomotive Co., Kingston, Ont. all of which have now been delivered and one of which is illustrated on this page. They are designed to handle through passenger trains and have already been tested in the freight service with satisfactory results. They are simple expansion locomotives, and will exert a tractive force of 30,400 lbs.

The cylinders are 21 ins. in diameter by 28 ins. stroke, and are fitted with automatic relief valves, the steam chests are arranged for piston valves, having inside admission. These valves are of the latest improved semi plug type and are operated by a valve motion of the Walschaert type. The driving wheels (3 pairs), are of cast steel, 69 ins. in diameter and are most perfectly balanced, ensuring absolute steady riding. The frames are of cast steel, made in one piece from end to end. These frames are braced by cast steel cross ties, which system is made possible by the introduction of the Walschaert valve gear. The boiler is of the radial stayed type with a wide firebox. Great care has been given to all the details in the design of the boiler. All the water spaces are large, most convenient wash out plugs and ports are arranged for the purpose of reliable washing out. The ash pan is of the hopper pattern and has ample air openings, as well as sliding bottom doors for easy and quick means of cleaning out. The spring gear is excellent, that on the forward truck being self contained. The driving spring gear, being equalized with the rear truck, which is of the Vaughan type, enables the engine to take curves in the most satisfactory and easy manner. The engines are fitted with electric headlights and are wired for incandescent lamps for gauges, etc. in the cab. The cab arrangement is exceedingly well worked out, everything in it being placed in the most convenient and appropriate place for operating and inspection. The brakes are Westinghouse E. T. 6. All the fixtures, such as the sanding device, the lubricator and the automatic bell ringer, etc., are of the most modern type known. The tank is of the hopper type and delivers the fuel to the fireman's shovel. The frame is all steel and the drawbar attachment is of the tandem type. Nothing has been spared in the construction of the trucks to make them what they should be. The wheels are in one piece of solid pressed steel. Following are the principal dimensions, etc.:—

Fuel used	Bituminous coal
Weight in working order, drivers	135,500 lbs.
Weight in working order, total	202,500 lbs.
Wheel base of engine, rigid	12 ft. 7 in.
Wheel base of engine, total	31 ft. 6 in.
Wheel base of engine and tender	57 ft. 10 in.
Height over all, engine and tender	14 ft. 9¼ in.
Heating surface, firebox	162 sq. ft.
Heating surface, tubes	2,705 sq. ft.
Heating surface, total	2,867 sq. ft.
Diameter of driving wheels	69 ins.
Material for driving wheel centres	Cast steel
Diameter and length of driving journals	9½ by 12 ins.
Diameter of cylinders	21 ins.
Stroke of cylinders	28 ins.
Valve gear	Walschaert
Type of boiler	Extended wagon top
Working pressure of boiler	200 lbs. per sq. inch
Number of tubes	272
Diameter of tubes	2 ins.
Length of tubes	19 ft.
Injectors	No. 9 locomotive type
Brakes	Westinghouse 6 E.T.
Weight of tender, loaded	123,000 lbs.
Capacity of tank in imp. gallons	5,500
Style of tank	Hopper type
Coal, capacity	10 tons
Style of truck	Four wheeled equalized
Diameter of wheel	36 ins.
Kind of wheel	Solid steel type
Diameter and length of journal	5½ by 10 ins.
Brake beam	Simplex high speed

◆

The Columbia Collieries Ltd., has been incorporated under the B.C. Companies Act, with a capital of $500,000, to carry on a general colliery business, and in connection therewith to build, own, and operate and control tramways, switches, logging railways, steam and other vessels, docks, wharves, piers, etc., and to act as general shipping and forwarding agents.

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(From Daily Papers)

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RAILWAY DEVELOPMENT

Projected Lines, Surveys, Construction Betterments, Etc.

Alberta Central Ry.—The Dominion Parliament has authorized the company to build certain branch lines, and has extended the time fixed for the building of other lines previously authorized.

On March 31 we were officially advised that the reported letting of a contract to the Janse, McDonnell Co., Calgary, Alta., for the grading of 100 miles, 36 miles at Red Deer, and 64 miles west of that town, was premature, as the contract had not then been ratified by the railway company.

A Winnipeg press dispatch stated positively that the contract had been signed by J. T. Moore, President A.C.R., and the contractors. (April, pg. 319 and 353.)

Algoma Central and Hudson Bay Ry.—The Ontario Legislature has enacted that the cash subsidy of $2,000 a mile, and the land grant of 5,000 acres a mile, granted to the Ontario, Hudson Bay and Western Ry., be transferred to the A.C. and H.B. Ry., so far as they cover the proposed line from the C.P.R. transcontinental line to the National Transcontinental Ry., 115 miles. This mileage is under survey by the A.C. and H.B. Ry. (April, pg. 319.)

Arisaig and Country Harbor Iron, Coal and Ry. Co.—An extension of time has been granted by the Nova Scotia Legislature for the building of the lines authorized to be constructed by the statutes of 1909, chap. 154.

Atlantic, Quebec and Western Ry.—Representatives of the trustees of the Charing Cross Bank (in liquidation), and of the bondholders and shareholders of the A., Q. and W. Ry., in London, Eng., waited on the Dominion Government, April 8, with a view to securing its co-operation and assistance in the completion of the line. (April, pg., 319.)

Bear River and Caledonia Ry.—The Nova Scotia Legislature incorporated a company with this title to build a railway from Bear River to Caledonia, N.S. (See Shelburne and Bear River Ry. and Liverpool and Caledonia Ry.)

Blomidon Ry.—The Nova Scotia Legislature has incorporated a company with this title to build a railway from Blomidon to Canning, on the Dominion Atlantic Ry., and to other points.

Brandon Transfer Ry.—H. A. K. Drury, of the Board of Railway Commissioner's engineering staff, Winnipeg, met the mayor of Brandon, Man., and others interested in the building of a transfer railway in the city, Mar. 31. A survey was made of different districts in the city where it seemed possible to locate a line, and the matter was discussed from every point of view. A route will be recommended for the Board's approval. (April, pg. 352d.)

British Columbia and Canada Central Ry.—The Dominion Parliament has incorporated a company with this title. The application was that the title be the Dominion Development Ry. Co., but it was changed in committee. (See Dominion Development Ry., April, pg. 319.)

Buctouche Ry. and Transportation Co.—Application will be made to the Board of Railway Commissioners, May 2, for the approval of an agreement of amalgamation between the Moncton and Buctouche Ry. and the Buctouche Ry. and Transportation Co. (June, 1910, pg. 447.)

Burrard, Westminster Boundary Ry. and Navigation Co.—The Dominion Parliament has extended the time for the building of the lines authorized by chap. 68 of the statutes of 1907, and by chap. 56 of the statutes of 1909. (Jan., pg. 21.)

Canada and Gulf Terminal Ry.—In an interview April 9, M. J. O'Brien, President, stated that the company was maturing its plans for the extension of the line from the present terminus at Matane, through the interior of the Gaspe Peninsula to Gaspe Basin, Que., 180 miles. During the winter, surveys had been made between these points and the engineers reported that a very good route had been secured, with easy gradients, and through a country possessing excellent timber resources, and with large areas of good agricultural land. Surveys had also been made for a line from Matane to a junction with the National Transcontinental Ry., about 100 miles, and a good route had been secured. Several hundred acres of land had been purchased at Matane for the purpose of developing the place as a summer resort. (Feb., pg. 109.)

Canadian Inter-Mountain Ry. — The Dominion Parliament has incorporated this company, to build a number of lines in Alberta, Saskatchewan and British Columbia. (Mar., pg. 205.)

Canadian Western Ry.—An extension of time for the building of the line authorized to be constructed by the statutes of 1909, chap. 69, has been granted by the Dominion Parliament. The amending act authorizes the company to enter into agreements with the Kootenay and Alberta Ry., the Alberta Pacific Ry., and the Western Alberta Ry., or any of them. (Jan., pg. 21.)

Cap de la Magdaleine Ry.—Application is being made to the Department of Public Works for approval, under the provisions of the Navigable Waters Protection Act, of plans for a bridge across a branch of the St. Maurice River, connecting Belle River Island with the mainland at Cap de la Magdaleine, Que. The notice of application is signed by E. W. Beatty, Montreal, President. This is an old Quebec charter, and a subsidy was voted in aid of construction by the Dominion Parliament in 1894.

Dominion Atlantic Ry.—We are officially advised that the company is doing a good deal in the way of betterments. It is gradually substituting 80 lb. steel for the present 60 lb., but what mileage will be relaid this year has not been decided.

A new and heavier steel bridge is to be constructed at Gaspereaux by Aug. The Board of Railway Commissioners has approved plans for alterations to the bridge over the Shubenacadie River in South Maitland. The work to be done includes the replacing of the present draw span by a wider one. This will be done during the summer and arrangements are being made for placing a contract. The rebuilding of the wooden structure at Sawmill Creek, started in 1910, will be completed this summer. Further bridge work may be undertaken this year, but it has not yet been decided.

The company is building a mile of track at Canning, N.S., to connect with the Dominion Government wharf there. The work includes a Y to facilitate handling the cars to and from the wharf. The line branches off from the Cornwallis branch about a quarter of a mile west of Canning and runs at the back of Canning town to the wharf. (Mar., pg. 205.)

Fredericton and Grand Lake Coal and Ry. Co.—At the annual meeting in Fredericton, N.B., April 12, the question of the building of a line from Gibson, on the opposite bank of the St. John River to Fredericton, to Minto, where a junction could be effected with the New Brunswick Coal and Ry. Co.'s Ry., was under consideration. It is said that the company proposes to undertake its construction at an early date. Following are the officers and directors:— President, H. P. Timmerman, Montreal; Vice President H. W. Woods, M.P.P., Welsford, N.B.; other directors: A. R. Slipp, M.P.P.; C. F. Chestnut, H. W. Woods, M.P.P.; A. B. Wilmot, P. Glaser, M.P.P.; Secretary Treasurer, D. K. Hazen. (July, 1910, pg. 547.) (See also St. John Valley Ry.)

Halifax and Guysboro.—The Nova Scotia Legislature has extended the time within which the aid voted for the construction of a railway between Halifax and Guysboro, granted by the statutes of 1906, chap. 1, is available. (See Halifax and Eastern Ry., Feb., pg. 111.)

Halifax and South Western Ry.—The Nova Scotia Legislature has amended the company's charter powers in some minor points. (Sept., 1910, pg. 727.)

High River, Saskatchewan and Hudson Bay Ry.—The provisional directors named in the bill for the incorporation of a company with this title, now before the Dominion Parliament, are:— H. N. Sheppard, F. Crandell, T. E. LeClaire, C. A. Gigot, G. D. Stanley, High River, Alta. (Mar., pg. 205.)

Hudson Bay and Pacific Ry.—The Board of Railway Commissioners has approved the location plans from mileage 0, Prince Albert, Sask., to mileage 70, in the direction of Fort Churchill, on Hudson Bay. (Feb., pg. 155.)

Hudson Bay, Peace River and Pacific Ry.—Route plans of this projected railway show a line running due north from Winnipeg, on the east side of Lake Winnipeg, and on to Fort Churchill, and a line starting at Fort Churchill westerly to the Pacific Coast. It is reported in Winnipeg that the British interests behind the provisional directorate have the funds ready to finance the undertaking, as soon as the necessary parliamentary powers are obtained. (April, pg. 319.)

Indian River Ry.—The Dominion Parliament has granted an extension of time within which the company may build the line authorized to be constructed by the statutes of 1902, chap. 64 (Jan., pg. 23.)

Intercolonial Ry.—The Dominion Parliament has voted the following sums on account of betterments, etc., along the line:—Original construction, $500; surveys and inspections, $15,000; to increase accommodation and facilities along the line, $40,500; to strengthen bridges, $29,000; general protection of highways, $20,000; to increase accommodation at Halifax, $82,500; second trackwork at New Glasgow, $35,500; to increase accommodation at Stellarton, $30,000; new machinery for steamer Scotia, $1,100; diversion at Sydney Mines, $250,000; to increase accommodation at Truro, $57,200; additional facilities at Princess pier, $4,000; to increase accommodation at St. John, $25,600; to increase accommodation at Campbellton, $150,000 and $75,000 to meet expenditure incurred on Governor General's warrant at same place; diversion of line and branch to wharf at Chatham, $300,000; to increase accommodation at Fredericton, $25,000; additional office building at Moncton, $62,500; locomotive and car shops with equipment and new freight yard and cut off line at Moncton, $200,000; engine house equipment, etc., at Riviere du Loup, $15,650.

The Minister of Railways explained in the House of Commons that the diversion of the line at Chatham, N.B., will be about 8.25 miles, and will get rid of the gradient down to the water front. The work was begun about two years ago, the contract having been awarded to Morrison and Clark, for the estimated sum of $245,853.58. The total cost of the work, including ties, rails, ballasting, right of way, grading, and $30,000 for a station building is 512,603.58.

The new station which it is proposed to build at Fredericton, N.B., will cost, according to the estimate, $125,000, and

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the vote of $25,000 now made is for a start.

In connection with the proposal for increased dock accommodation at Halifax the Minister stated that some years ago the Government purchased the old Cunard property. In view of the demand for increased accommodation at Halifax, the Government Railways Managing Board and the Chief Engineer made a visit of inspection, and a special report was made by J. Kennedy, of Montreal. He expected to ask Parliament at a later date to make an appropriation in order tö start carrying out the proposals. The intention is to build one large dock and to commence on another This will afford early accommodation for the large ships that are being built, and, year by year, it will develop into a larger scheme including several docks. These changes are absolutely necessary not only because the C.P.R. gets its traffic from these steamship lines, but the Intercolonial as well. Up to the present time there has been spent in Halifax, in connection with the I.C.R. $4,431,947.

With respect to the suggestion that the line be double tracked from Moncton to Halifax, the Minister could not say what would be done in the future. The existing local traffic could be handled with the present line. So far as the G.T. Pacific Ry. was concerned, the I.C.R. had its traffic for 99 years under contract. If the Government was going to undertake to put the G.T. Pacific Ry. and the C.P.R. into Halifax and St. John, the line would have to have a second track. Such a proposition would have to be discussed with the companies, as to whether the work would be done by the Government or not. The matter was being given consideration.

The diversion at Sydney Mines, upon which work was started last year, is estimated to cost when completed $539,000. It will give the I.C.R. a straight line to the mines. The department intends putting in a second track in connection with the yards at St. John, N.B., and some second track also at New Glasgow and Stellarton, N.S., this year.

In connection with the suggested diversion of the line in the vicinity of the Cobequid Mountains, the Minister of Railways stated Mar. 29, that a survey had been made, and his information was that a better gradient than the existing one might not be obtainable, and that it would be cheaper to build a second track on the existing line, than to build a diversion. The building of a diversion would mean doubling the number of stations, and overhead work.

The Department has under consideration a proposal to build a railway wharf for the I.C.R. terminus at Dartmouth, N.S., (April, pg. 321.)

Kamouraska and L'Islet Ry. Co.—The Quebec Legislature has incorporated a company with this title to build the lines named in its application. (Mar., pg. 249.)

Kaslo and Slocan Ry.—It is reported from Kaslo, B.C., that an option has been secured by a local syndicate on this railway, which extends from Slocan to Kaslo, 27 miles, and which was operated by the Great Northern Ry., U.S., under a lease which is about to expire. Owing to some land slides the line has not been operated for some time. It is stated that it is intended to reconstruct the line and to hand it over to the C.P.R. for operation. Sandon is the present terminus of the Nakusp and Slocan Ry., operated by the C.P.R., and Kaslo is situated on Kootenay Lake, on which the C.P.R. operates a steamer service.

Kettle Valley Lines.—We are advised that the press reports that a contract for the second 30 miles section of the extension out of Merritt, B.C., had been let to Macdonnell, Gzowski & Co., are premature, as the contract for this section will not be let until July.

The Dominion Parliament has authorized the building of certain extensions of previously authorized lines, extended the time for building certain lines, and changed the company's name from the Kettle River Valley Ry. Co., to the Kettle Valley Ry. Co. The company has charters in the State of Washington and operates its railway in the two countries as the Kettle Valley Lines. (April, pg. 321.)

Kootenay and Alberta Ry.—A contract has been let to Grant, Smith & Co., Spokane, Wash., for the building of the first 13 miles of this projected railway. This section begins on the C.P.R. Crows Nest Pass Line, about a mile west of Pincher, Alta., and extends south westerly to the Western Coal and Coke Co.'s mines on Beaver Creek. The maximum gradient with the traffic is 1% compensated. There are three minor summits, all of which are less than 14 ft. high, and are so arranged as to be velocity gradients. The sharpest curvature is six degrees. The work is heavy, averaging about 40,000 cubic yards to the mile, and having one very large cut, and two high timber trestles. The line will be laid with 60 lb. steel, American Society of Civil Engineers Section. L. B. Merriman is Chief Engineer.

Representatives of Grant, Smith & Co. were in Pincher Creek, Alta., Mar. 26, making arrangements to start work. Two steam shovels are being brought in to be used in the Mountain Hill cut. (April, pg. 321 and pg. 353.)

Liverpool and Caledonia Ry.—The Nova Scotia Legislature has incorporated a company with this title to build a railway from Liverpool to Caledonia.

Manitoulin and North Shore Ry.—The Ontario Legislature has extended the subsidy grant to this company, provided that the line from Sudbury to Little Current, be completed by Dec. 31, 1912. (April, pg. 321.)

We are advised that sub-contracts have been let as follows, on the section of the line from Crean Hill to Whitefish, Ont:—Espanola southerly, McCaffrey and McCaffrey, Espanola, Ont.; mileage 48.50 to mileage 51, Debona and Orlando Bros., Little Current, Ont.; mileage 51 to mileage 61, Murdoch Bros., Missanabie, Ont.; mileage 23 to mileage 30, Fletcher and Jones, Sudbury, Ont.

Margaree Coal and Ry. Co.—The Nova Scotia Legislature has extended the time fixed for construction. (Dec., 1909, pg. 883.)

Maritime Coal and Ry. Co.—The Nova Scotia Legislature has amended the company's powers in certain details, including an extension of time for the building of the uncompleted lines. (Sept., 1910, pg. 727.)

Michigan Central Rd.—The new double track swing bridge over the Welland Canal at Welland, Ont., was opened for traffic, April 7. (April, pg. 321.)

Montreal and Northern Colonization Ry. Co.— The Quebec Legislature has incorporated a company with this title to build the railway mentioned in the application, as amended. (April, pg. 321.)

Midland Continental Ry.—A Chicago, Ill., press dispatch, April 17, states that the Midland Construction Co., will start building the first section of a line intended to form a trunk line from Winnipeg to the Gulf of Mexico, at an early date. The section to be built, will, it is said, connect with the Canadian lines near Pembina, and will extend to Edgely, 2.5 miles. The officers of the Construction Co., are:—F. Bell, Racine, Wis.; Vice President, H. D. Duncombe, Chicago; Chief Engineer, G. M. Wisner, Chicago; Consulting Engineer, C. V. Weston, President, South Side Elevated Rd., Chicago. (Dec., 1910, pg. 1015.)

New Brunswick and Prince Edward Ry.—Press reports from Sackville, N.B., state that C. W. Fawcett, C. Pickard, Sackville, and M. G. Siddall, Port Elgin, N.B., are the leading members of a syndicate which is about to take hold of this railway. The reports state that these new interests propose to electrify the line for the operation of passenger cars, to run steamships from Cape Tormentine to Summerside and Charlottetown, with a winter service to the Traverse; and a steamship service from Cape Tormentine to Fort William, Ont. The company owns the public wharf at Sackville, and it is proposed to lay a track from the railway on to the wharf. and make a number of improvements there. (Jan., pg. 23.)

New Brunswick Coal and Ry. Co.—The N. B. Legislature is being asked by the Government to pass a measure providing a guarantee of bonds for $15,000 a mile for the building of an extension of this line from Minto to Fredericton, N.B. The company entering into a contract for building the extension must lease the present line running from Norton to Minto from the Government. purchase at least 100,000 tons of coal a year from the mines along the route of the line, and enter in a contract with the C.P.R. or other company for the operation of the entire line on a 99 year lease, the Government to receive 40% of the gross earnings on the 31 miles between Minto and Fredericton, and 50% of the gross earnings on the other mileage. The Premier in introducing the measure stated that the C.P.R. had made careful tests of the Grand Lake coal which came from mines on the line, and was prepared to enter into an agreement to take 100,000 tons a year. (Feb., pg. 113.)

New Ontario and Quebec Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from the National Transcontinental Ry. near mileage 940. Que., to Matheson, Ont., on the Temiskaming and Northern Ontario Ry., and on to Congdon station on the James Bay Ry., 160 miles; a 25 mile line from mileage 1000 on the N.T. Ry., to a junction with the first named line, and a 25 mile line from Iroquois Falls on the T. and N.O. Ry., along the Abitibi River to a junction with the first named line. The provisional directors are: E. A. Walberg, E. C. Wilson, Montreal, L. M. Wood, T. H. Watson, Toronto, F. J. Bell, Cobalt, Ont (Mar., pg. 207.)

Newport and Northern Alberta Ry.—Application is being made to the Dominion Parliament to incorporate a company with this title, to build a railway from Newport, at the head of Howe Sound, B.C., north easterly to Lillooet, then northerly along the valley of the Fraser River to Fort George, thence to the Parsnip River, and along its valley to the confluence with the Peace River, thence easterly along the valley of the Peace River to Peace River Landing, Alta. Pringle and Guthrie, Ottawa, are solicitors for applicants.

New York and Canadian Pacific Ry.—The charter granted by the New York State Legislature for the building of a line to connect the C.P.R. lines in Canada with those in the U.S. is reported to have become forfeited. The line proposed to be built was from New York to Ogdensburg, via Schenectady, N.Y., with a car ferry connection on the St. Lawrence River. (Jan., 1907, pg. 3.)

Ontario Hudson Bay and Western Ry.—The Dominion Parliament has extended the time for the construction of this projected railway, which was authorized to be built by statutes of 1901, chap. 78. (Dec., 1910, pg. 1015. See also Algoma Central and Hudson Bay Ry.)

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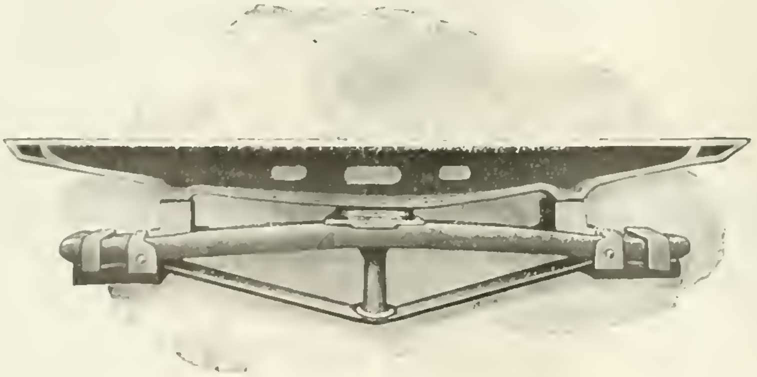

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Ontario Northern and Timagami Ry.—The Dominion Parliament has extended the time within which the line, originally authorized to be built by the statutes of 1898, chap. 87, may be built. The last extension of time was granted in 1906, chap. 136. (See Timagami and Northern Ontario Ry., Jan., pg. 25.)

Pontiac Central Ry.—The Dominion Parliament has extended the time within which the lines authorized to be constructed by the statutes of 1908, chap. 146, may be built, and has given the company power to enter into agreements with the G. T. Pacific Ry., the Canada Atlantic Ry., the Central Ry. Co. of Canada, and the Canadian Northern Ontario Ry. (Dec., 1910, pg. 1015.)

Ontario-Michigan Ry. — In passing through the House of Commons committee, the name of the company proposed to be incorporated as the Ontario Railways Co., was changed to the Ontario-Michigan Ry., and power was given to make an agreement with the Michigan United Electric Ry. for the purpose of operating a car ferry between Sarnia and Port Huron, and of transferring thereon the cars of both companies. Agreements may also be made with the C.P.R., the G.T.R. and the Pere Marquette Rd. (See Ontario Railways Co., April, pg. 321.)

Simcoe, Bruce and Grey Ry.—Replying to a deputation which waited on him recently to ask for a subsidy for the Owen Sound-Meaford, section of this projected railway, the Dominion Minister of Railways said his department had not recommended the granting of any railway subsidies this session, but if it did, this line would be one of the first recommended. (April, pg. 321.)

Prince Edward Island Ry.—The following amounts, chargeable to capital, have been voted by the Dominion Parliament:— Branch line, Harmony to Elmira, $150,000; extension to freight shed on wharf at Souris, $1,813; to increase accommodation at Summerside, $9,300; addition to station at Tignish, $1,000.

With respect to the Harmony-Elmira branch line the Minister of Railways stated recently that the estimated cost was $315,000. The contract was let to Whitehead Bros., at schedule prices. Owing to the death of their father and some other occurrences the contractors got into difficulties, and the department held up their estimates until some settlement had been effected. This has been made, but progress has been slow. A good deal of the branch has been graded, and the station buildings which were let to another contractor are nearly completed. The Intercolonial Ry. is selling 56 lb. rails taken up from the old Canada Eastern Ry., for the branch at $27.50 a ton. It is expected that the branch will be completed this year. Up to the present time $128,000 has been paid on account of the building of the line, and $14,000 on account of the building of the stations. (April, pg. 321.)

Prince Edward Island Tunnel.—Resolutions have been passed by the residents of Emerald, P.E.I., urging the making of complete surveys with a view to determine the feasibility and cost of construction and the cost of operation of a tunnel under Northumberland Strait, to connect P.E.I. with the mainland, and that pending the construction of such a tunnel the P.E.I. Ry. gauge be widened to standard, and that a car ferry service be established. (Mar., pg. 207.)

Quebec and Great North Western Ry.—The provisional directors named in the bill, now before the Dominion Parliament for the incorporation of a company with this title are:— R. Chevrier, P. O'Reilly, P. Clarke, E. J. Daly, Ottawa; J. Bourque, Hull, Que. (Feb., pg. 113.)

Quebec Eastern Ry.—The Quebec Legislature has extended the time for the construction of this projected railway, and authorized an increase of the capital stock from $1,000,000 to $5,000,000. (Mar., pg. 249.)

Quebec, Montreal and Southern Ry.—The Dominion Parliament has extended the time within which the company may build the uncompleted portions of its lines. These include the extension of the line from near St. Francis to the southern end of the Quebec Bridge. (Feb., pg. 113.)

Richmond, Magog and Stanstead Ry. Co.—The Quebec Legislature has incorporated a company with this title to build the railway mentioned in the application. (Mar., pg. 249.)

Shaw Ry. and Lumber Co.—The Saskatchewan Legislature has incorporated a company with this title. The railway proposed to be built will extend from Shaw's siding near Prairie River, on the Canadian Northern Ry., about seven miles west of the Hudson Bay Jct., Sask. (Mar., pg. 207.)

St. John and Quebec Ry.—The new Brunswick Legislature has under consideration a bill providing for an extension of this projected line.

Shelburne and Bear River Ry.—The Nova Scotia Legislature has incorporated a company with this title to build a railway from Shelburne to Bear River. (See also Bear River and Caledonia Ry.)

Southern Central Pacific Ry.—The Dominion Parliament has extended the time for the building of the lines authorized to be constructed by sec. 3, chap. 162, of the statutes of 1906, and giving power to build a line from the headwaters of the Blindman River, or at the crossing of the North Saskatchewan, to Dunvegan, the Parsnip River, the Nechaco River, and thence southerly to Deans Channel or to Gardiner's Canal on the Pacific coast.

Surveys were made during the winter, under the charge of G. A. Knowlton, and B. Russell, for the location of a route from Coutts to the north and south forks of the Old Man River, and to Pincher Creek, Alta. It is reported that the location surveys for 10 miles on each side of the forks of the Old Man River have been completed. Press reports state that arrangements are being made for starting construction at an early date. (April, pg. 321.)

Southampton Ry.—The New Brunswick Legislature has under consideration a proposal authorizing the Government to guarantee the company's 4% bonds for $10,000 a mile, for the construction of a railway from the C.P.R. Gibson branch between Melville station and a railway bridge crossing the Northeast Mackawick stream, to Pokiok Bridge, York county, 13 miles. The guarantee is contingent upon the company entering into a contract with the C.P.R. for the operation of the line upon release, the Government to receive 40% of the gross receipts from the operation of the same. After meeting interest charges on the bonds any balance remaining shall be paid over to the Southampton Ry. The bill further provides that the gradients, and general construction of the line shall conform to the standard of the C.P.R Gibson branch.

Southern Central Pacific Ry.—The Board of Railway Commissioners has approved the location of the line from Burmis, Alta., mileage 0, to sec. 2, tp. 4, range 6, west of the fifth meridian, mileage 7.84.

Sydney, New Waterford and East Bay Mono Rail Ry.—The Nova Scotia Legislature has incorporated a company with this title, to build a railway, on the mono-rail system, from Sydney to East Bay.

Temiskaming and Northern Ontario Ry.—Addressing the Toronto Board of Trade, April 7, J. L. Englehart, Chairman, T. and N.O.R. Commission, after describing the clay belt plateau reached by the line, and the coastal plain beyond, said the Commission proposed to send a small survey party to Moose River this year, with a view to locating an extension to Salt Water. Liskeard was the portal to the clay belt which extended to Cochrane, 140 miles, and north of that point, for 150 miles, and beyond this was the great coastal plain, for which, so far as present knowledge went, the mouth of the Moose River formed the best harbor. Two other matters were mentioned, the first being the securing of a new location for an alternative route for the first 35 miles out of North Bay, with lower gradients and easier curvature than the present line; and the second was that a working arrangement had been effected by which traffic brought by the National Transcontinental Ry. would be carried over the T. and N.O. Ry. between Cochrane and North Bay.

Rapid progress continues to be made with construction on the branch to Porcupine Lake; ten miles of steel has been laid, and the bridge structures are well forward. It is fully expected by the commissioners that the branch will be ready for traffic by July 1.

A deputation waited on the Ontario Minister of Public Works, April 7, in connection with the proposal to build a branch into the Gowganda district. It is said that while a definite decision has not been reached, the Government does not view the project with much favor, and that in the event of reaching a decision not to build the line, it will be prepared to grant a charter to a private company. (April, pg. 321.)

Winnipeg North Eastern Ry.—The Manitoba Legislature has incorporated a company with this title to build a railway along the east side of Lake Winnipeg. Press reports state that Mackenzie, Mann & Co., are behind this project, and that the line will start at the present terminus of the company's Bird's Hill branch, reach Fort Alexander, and then proceed along the eastern boundary of Lake Winnipeg. (April, pg. 323.)

Winnipeg River Ry.—The Manitoba Legislature has incorporated a company with this title to build a railway from Winnipeg to Lac du Bonnet. (Mar., pg. 209.)

Recent Manitoba Legislation.

The following acts affecting transportation interests were passed at the recent session of the Manitoba Legislature:—

Bird's Hill and Springfield Ry.—Incorporation.

Brandon Electric Ry.—Incorporation.

Canadian Northern Ry.—Authorizing guaranteeing of certain of the company's securities.

Lake Winnipeg and Red River Navigation Co.—Incorporation.

Manitoba Power Co.—Respecting company's powers.

Manitoba Radial Ry.—Incorporation.

Rural Ry. Co. of Manitoba.—Amending act of incorporation.

St. Vital.—To enable the municipality to enter into an agreement respecting construction of electric railways.

Telegraph and Telephone Systems.—Amending act respecting government telegraph and telephone systems.

Western Electric Light and Power Co.—Incorporation.

Winnipeg North Eastern Ry.—Respecting company's powers.

Winnipeg River Ry.—Respecting company's powers.

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Orders by the Railway Commissioners.

Beginning with June, 1904, we have published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the hearing took place and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the date assigned to them

13243. Mar. 16.—Authorizing city of St. Boniface, Man. to lay water main under C.P.R. at Montcalm St.

13244. Mar. 16.—Authorizing Water Commissioners of London, Ont., to erect wires across G.T.R. siding on Rectory St.

13245, 13246. Mar. 15—Authorizing G.T.P.R. to cross 47 highways in Alberta.

13247. Mar. 16.—Authorizing C.P.R. to cross Trespass Road Thorah tp., Ont.

13248. Mar. 17.—Approving Rutland Rd.'s bylaw authorizing C. Hartigan, G.P.A., and G. Cassidy, G.F.A., to prepare and issue tariffs of tolls in respect to passenger and freight traffic.

13249. Mar. 15.—Authorizing C.N.R. and C.P.R. to appeal to Snpreme Court of Canada from order 12520, Dec. 10, 1910, which directed them to grant certain rates to Regina, Sask., as are now enjoyed by Winnipeg. This order is given in full on another page.

13250. Dec. 14.—Dismissing application of Gundy-Clapperton Co., Goldsmiths' Stock Co., and Gowans, Kent and Co., Toronto, for reduction in rating in Canadian Classification on cut glass, from double first class to first class.

13251, 13252. Mar. 17.—Authorizing G.T.P. Branch Lines Co. to cross 34 highways on its Calgary Branch, Alta.

13253. Mar. 17.—Approving C.N.R. revised location through sec. 19, tp. 2, r. 6, w. 2 m., mileage 15.84 to 16.60 Sask.

13254 Mar. 17.—Authorizing city of Toronto to erect wires across C.P.R. on Front St. near Overend St.

13255. Mar. 18.—Approving G.T.R. plans for abutments, wing walls and steel work of subway at Queen St. West, Etobicoke tp., Ont.

13256. Mar. 18.—Authorizing Hamilton Cataract Power, Light and Traction Co. to erect wires across T.,H. & B.R. spur at Sherman Inlet, Hamilton Ont.

13257. Mar. 20.—Approving character of work of Gillett drain across G.T.R. in Malahide tp., Ont.

13258. Mar. 20.—Approving C.N.O.R. location through McTavish and Sibley tps., Thunder Bay district, mileage 524.96 to 548.45.

13259. Mar. 20.—Authorizing C.P.R. to divert and cross highway at mileage 75.3 on west boundary of n. w. ¼ sec. 1, tp. 25, r. 5, w. 5 m., Sask.

13260. Mar. 20.—Authorizing G.T.P. Branch Lines Co. to cross C.N.R. Maryfield branch, Sask., crossing to be protected by interlocking plant, etc.

13261. Mar. 20.—Approving C.N.O.R. revised location near Billing's Bridge, Ottawa Junction Gore, Gloucester tp., Carleton county, mileage 2.3 to 3.02.

13262. Mar. 20.—Authorizing Seymour Power and Electric Co. to erect wires across G.T.R. at Newcastle, Ont.

13263, 13264. Mar. 20.—Authorizing Water Commissioners of London, Ont., to erect wires across G.T.R. at two points on Egerton St.

13265. Mar. 20.—Authorizing C.P.R. to maintain spur to Canadian Linderman Co.'s premises, Woodstock, Ont.

13266. Mar. 20.—Authorizing C.P.R. to operate spur to Coast Lumber Yards' premises, Winnipeg, Man.

13267. Mar. 20.—Authorizing C.P.R. to operate spur to S. E. Stewart's premises, Saskatoon, Sask.

13268. Mar. 20.—Authorizing C.P.R. to operate spur for Manitoba Government Telephones, across Higgins Ave. and lots 11, 10, 9, in block 30, St. John, Winnipeg.

13269. Mar. 20.—Authorizing C.P.R. to build spur to Vanconver-Prince Rupert Meat Co.'s premises, New Westminster District, and to connect with Vancouver, Victoria & Eastern Ry. spur.

13270. Mar. 20.—Ordering that G.T.R. instal improved type of electric bell at Daniel St., Arnprior, Ont., 20% of the cost to be paid by the railway grade crossing fund.

13271. Mar. 21.—Authorizing G.T.P.R. to divert road through east half of sec. 36, tp. 44, r. 7, w. 4 m., Alta.

13272. Mar. 20.—Approving plans of C.P.R. bridge 0.5 over Thames River on Windsor subdivision, Ontario Division.

13273 to 13276. Mar. 21.—Authorizing G.T.P. Branch Lines Co. to divert four roads on its Calgary Branch, Alta.

13277. Mar. 21.—Authorizing G.T.P. Branch Lines Co., to cross highway in sec. 16, tp. 25, r. 4, w. 2 m., Yorkton District, Sask.

13278. Mar. 21.—Authorizing C.P.R. to build culvert on its Lethbridge subdivision at mileage 105.1 from Dunmore Jct., for Alberta Ry. and Irrigation Co.

13279. Mar. 21.—Authorizing G.T.R. to build spur to premises of J. C. Low, Wright & Co., E. F. & G. E. Barrett and Ottawa Construction Co., south of Catharine St., west of Bank St., Ottawa, Ont.

13280. Mar. 20.—Authorizing G.T.R. to build spur to Hamilton Bridge Co.'s premises, Hamilton, Ont.

13281. Mar. 21.—Ordering Quebec Oriental Ry., formerly Atlantic and Lake Superior Ry., to repair and alter bridge at Rock Cut, in r. 5, Que., by May 15, under penalty of $25 a day.

13282. Mar. 22.—Authorizing C.N.R. to cross with its Delisle Extension, C.P.R. Moose Jaw-Lacombe Branch in sec. 31, tp. 29, r. 9, w. 3 m., Sask., interlocking plant to be installed.

13283. Mar. 22.—Approving C.N.R. revised location through subdivision on n, w. ¼ sec. 34, tp. 23, r. 29, w. 4 m., Alta., mileage 255.22 to 255.73.

13284. Jan. 23.—Approving Dominion Atlantic Ry. standard tariff of maximum parlor car tolls C.R.C. S-3.

13285. Mar. 22.—Authorizing C.P.R. to operate spur from its main line, to premises of Heintzman Piano Co., and Nordheimer Piano Co., Toronto.

13286. Dec. 12.—Approving character of Pike and Dauphin drainage schemes to cross G.T.R. between Raleigh and Tilbury tps., Ont.

13287. Mar. 23.—Authorizing Caledonia Gypsum Co. to lay pipe under G.T.R. at Caledonia, Ont.

13288. Mar. 23.—Authorizing C.P.R. to build bridge 18.3 over Shogomog River, Woodstock section, Atlantic Division.

13289. Mar. 22.—Dismissing application of Blaugas Co. of Canada, Ltd., for order directing railways to classify Blaugas in cylinders, in Canadian Classification as third class in l.c.l. and fifth class in c.l., in lieu of second class and fourth class, as proposed by railways

13290. Mar. 22.—Ordering G.T.P.R. to provide farm crossings for W. Smith, Huxley, Alta., by June 1, under penalty of $25 a day.

13291. Mar. 25.—Authorizing C.N.O.R. to cross roadways on lot 1, con. 2, from the Bay, York tp.

13292. Mar. 23.—Extending to June 1, time for British Yukon Ry., B.C. Yukon Ry., Pacific and Arctic Ry. and Navigation Co. and White Pass and Yukon Ry. to file joint freight and passenger tariffs as reqnired by order 12783. Jan. 18. This order is given in full on another page.

13293. Mar. 25.—Authorizing Reeb Bros., Port Colborne, Ont., to maintain gas pipe under G.T.R. at west side of Catharine St.

13294. Mar. 27.—Authorizing Vancouver Island Power Co., to erect wires across Esquimalt and Nanaimo Ry., near mileage 4, from Victoria, B.C.

13395. Mar. 23.—Approving Georgian Bay and Seaboard Ry. location from mileage 74.25 to 87.65, Ont.

13296. Mar. 25.—Ordering C.N.R. to complete concrete work for sidewalks of Pembina St. subway, Winnipeg, by May 31, under penalty of $25 a day.

13297. Mar. 27.—Approving plans of G.T.R. station at Dublin, Ont.

13298. Mar. 27.—Approving plans of three C.P.R. bridges on its Windsor, North Bay and St. John sub-divisions.

13299. Mar. 27.—Approving Dominion Atlantic Ry. plans for bridges across Shubenacadic River at South Maitland, N.S.

13300. Mar. 27.—Removing speed restriction on B.C. Yukon Ry. trains between stations 382, 487 and 520 and limiting speed to 15 miles an hour from Best Chance Mine to Pueblo Mine.

13301. Mar. 27.—Ordering C.N.R. to build standard station and freight shelter at Garland, Man., before June 15, under penalty of $25 a day.

13302. Mar. 23.—Authorizing C.P.R. to build spur near Port Moody, B.C., mileage 0 to 3.5.

13303. Mar. 27.—Authorizing C.P.R. to build spur for Britnell & Co., Toronto tp., Ont.

13304. Mar. 27.—Authorizing Ontario Hydro-Electric Power Commission to erect wires across G.T.R. at lot 46, con. 2, North Easthope tp.

13305. Mar. 28.—Authorizing Pintsch Compressing Co. to lay gas main under G.T.R. at St. James St., Montreal.

13306. Mar. 28.—Extending to April 25, time for filing of plan for Hefferman St. bridge, Gnelph, Ont., by the city.

13307. Mar. 28.—Approving Georgian Bay and Seaboard Ry. plan for highway under tracks at lot 6, con. 11, Thorah tp., Ont.

13308. Mar. 28.—Authorizing C.P.R. to build three spurs in Camrose, Alta.

13309 to 13311. Mar. 29.—Rescinding orders 13089, 13092 and 13094, Feb. 27, which authorized city of Toronto to erect wires across G.T.R. and G.N.W. Telegraph Co.'s wires on Royce Ave., Queen St. East, and Bloor St.

13312. Mar. 29.—Authorizing Ontario Hydro-Electric Commission to erect wires across Bell Telephone Co.'s wires at seven points in Toronto and Etobicoke tps.

13313. Mar. 29.—Authorizing Hamilton Cataract Power, Light and Traction Co. to erect wires across Bell Telephone Co.'s wires at Barton St., west of Birch Ave., Hamilton, Ont.

13314, 13315. Mar. 29.—Authorizing Saskatchewan Government to build highway across C.P.R. in secs. 23 and 24, tp. 13, r. 19, w. 3 m.

13316. Mar. 29.—Ordering C.P.R. to provide for installation of telephone at Dorking station, Ont.

13317. Mar. 29.—Amending order 13228, re classification of toasted corn flakes, Jan. 17. This order is given in full on another page.

13318. Mar. 29.—Authorizing Saraguay Electric and Water Co. to erect wires across C.N.Q.R., at Joliette St., Montreal.

13319. Mar. 29.—Approving amended location of Vancouver, Victoria and Eastern Ry. from Otter Summit, mileage 17, to Tulameen, mileage 39, B.C.

13320. Mar. 29.—Authorizing C.P.R. to build spur for Wattsburg Lumber Co., West Kootenay District, B.C.

13321. Mar. 29.—Dismissing application of G.T.P. Branch Lines Co. to cross highway on its Calgary branch in sec. 36, tp. 39, r. 23, w. 4 m., Alta.

13322. Mar. 29.—Authorizing C.N.R. to operate spur north of lot 88, from Rue de Meuron to College St., St. Boniface, Man.

13323. Mar. 28.—Rescinding order 13186, Mar. 7, which approved plans of train shed, etc., at Central Union Passenger Station, Ottawa, Ont.

13324. Mar. 29.—Authorizing G.T.P. Branch Lines Co. to divert road on its Calgary branch in s.w. ¼ sec. 25, tp. 35, r. 23, w. 4 m., Alta.

13325. Mar. 28.—Ordering V.V. and E. Ry. to build spur to premises of Prudential Builders', Ltd., Vancouver, B.C.

13326. Mar. 27.—Ordering railway companies to file special tariffs to take effect not later than May 1, providing for allowance of 500 lbs. from weight of each carload in or upon open cars for weight of racks, stakes, standards, boards, strips, supports, etc. This order is given in full on another page.

13327. Mar. 30.—Extending to two years, instead of six months, time for completion of branch from V.V. and E. Ry. main line, near McLean's Drive, to Park Lane, Vancouver, B.C., as authorized by order 12939, Feb. 8.

13328 to 13348. Mar. 30, 31, Apr. 1.—Authorizing Hamilton Cataract Power, Light and Traction Co. of Canada to erect wires across Niagara, St. Catharines and Toronto Ry., G.N.W. Telegraph Co.'s, and Bell Telephone Co.'s wires in Welland county, Wentworth, Port Colborne and Humberstone, Ont.

13349. Mar. 31.—Anthorizing city of Toronto to erect wires across Bell Telephone Co.'s wires at Jefferson Ave.

13350.Apr. 1.—Relieving G.T.R. from further protecting crossing of highway west of Graham Bay station, Nepean tp., Ont.

13351. Mar. 31.—Authorizing G.T.R. to extend spur to city water works, Toronto.

13352. Apr. 1.—Authorizing C.P.R. to cross C.N.R. Beulah to Rapid City branch, in s.w. ¼ sec. 17, tp. 15, r. 24, w. p. m., Man., and ordering interlocking plant to be installed.

13353. Mar. 31.—Approving plans of Fleming drain under G.T.R. in Plympton tp., Ont.

13354. Apr. 1.—Approving C.P.R. standard fence plan, F-14-15-3.

13355. Mar. 21.—Dismissing application of Canadian Freight Association, in so far as proposed Supplement 1 affects ratings of tobacco, Canadian Classification 15. This order is given in full on another page.

13356. Apr. 8, 1909.—Anthorizing C.P.R. to refund to Constructing and Paving Co. of Ontario, Ltd., difference between rate of 22c. per 100 lbs. and rate collected on shipments of asphalt oil in tank cars from Philadelphia, Pa. This order is given in full on another page.

13357. Mar. 30.—Ordering express companies within the Board's jurisdiction, on and after June 1, to collect and deliver traffic to all points within the municipal boundaries or limits of cities, towns and villages and that after that date all existing delivery limits be abolished. Leave is granted to said companies to apply to the Board for establishment of reasonable collection and de-

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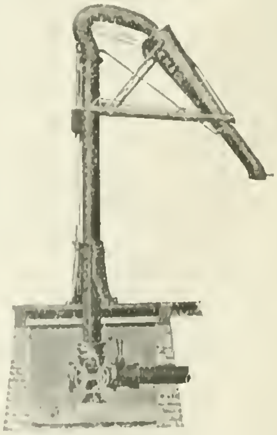

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livery zones, maps to be furnished.

13358. Apr. 3.—Authorizing Seymour Power and Electric Co. to erect wires across C.P.R. wires at broken front concession, Carke tp., Ont.

13359. Mar. 21.—Ordering that, pending completion of overhead bridge at Coutts St., Lethbridge, Alta., a watchman be placed at Galt St. for protection of C.P.R. and A. Ry. and I. Co.'s tracks.

13360. Apr. 3.—Authorizing C.P.R. to build spur across William St., Walkerton, Ont.

13361. Apr. 3.—Extending for two months from date, time for installation of gates at Main St. crossing, Medicine Hat, Alta., as authorized by order 11824, Sept. 16, 1910.

13362. Apr. 3.—Authorizing C.P.R. to build station at Suffield, Alta.

13363. Mar. 31.—Amending order 12225, that water stand pipes shall not be nearer than 2½ ft. from widest engine cab, changes necessary to be made before Jan. 1, 1912.

13364. Apr. 4.—Approving plans of C.N.O.R. Cobourg station grounds.

13365. Apr. 4.—Authorizing C.P.R. to build bridge over Stobie River, Soo branch, Lake Superior Division, Ont.

13366. Apr. 4.—Authorizing C.N.O.R. to cross public roads between lot 1, Tyendinaga tp., and lot 31, Thurlow tp.

13367. Apr. 3.—Ordering that G.T.P.R. and Quebec, Montreal and Southern Ry. file new tariffs of interswitching tolls in accordance with order 4988, not later than Apr. 26, under penalty of $25 a day.

13368. Apr. 5.—Authorizing C.N.R. to open for traffic portion of its line from Luxton to Bienfait, Sask.

13369, 13370. Apr. 4.—Authorizing C.N.O.R. to cross public road between lots 15 and 16, con. A, and between lots 3 and 4, con. 2, Tyendinaga tp.

13371. Apr. 4.—Authorizing C.P.R. to revise grade between mileage 0 and 16.7, and slightly revise location between mileage 6.2 and 6.9, being proposed second track from Smiths Falls to Glen Tay, Havelock section, Ont.

13372. Mar. 24.—Ordering C.N.O.R. to file new plan of subway at Division St., Cobourg, within 30 days.

13373. Apr. 5.—Ordering C.P.R. to readjust its tracks under Julius St. bridge and erect tell-tales at Matheson St. bridge, Kenora, Ont.

13374, 13375. Apr. 4.—Authorizing city of Toronto to maintain sewer under G.T.R. and C.P.R. at Weston Road.

13376. Apr. 6.—Approving location of Hudson Bay and Pacific Ry. from Prince Albert northeasterly towards Fort Churchill, mileage 0 to 70, Saskatchewan.

13377. Apr. 6.—Authorizing city of St. Catharines, Ont., to lay pipe under G.T.R. at Vine St.

13378. Apr. 5.—Authorizing Thamesville village, Ont., to lay pipe under G.T.R. at Victoria St.

13379, 13380. Apr. 6.—Authorizing J. Marshall, barton tp., Ont., to lay gas mains under G.T.R. at two points in Seneca tp.

13381. Mar. 21.—Ordering express companies to file tariffs for cream for butter making not to exceed certain figures, also special tariffs on sweet cream effective May 1, for district east of Port Arthur, Ont.

13382. Apr. 7.—Approving agreement between Narcross Bros. Co. and G.T.R. for erection of overhead travelling crane at Toronto.

13383. Apr. 7.—Approving C.N.R. bylaw authorizing G. H. Shaw, General Traffic Manager, Toronto and G. Stephen, G.F.A., Winnipeg, to prepare and issue tariffs.

13384. Apr. 7.—Extending to July 1, time for completion of G.T.R. steel bridge at Chesley, Ont.

13385. Apr. 7.—Authorizing C. N.O.R. to cross Brockville, Westport and North Western Ry. at Brockville Jct., mileage 189.34 from Toronto.

13386. Apr. 8.—Authorizing G.T.R. to operate trains over interlocker at Lynden Jct., Ont., without stopping.

13387. Apr 8.—Authorizing Montreal Light, Heat and Power Co. to maintain cable ducts under C.P.R. Lachine Canal South bank branch.

13388, 13389. Apr. 10.—Authorizing C.N.O.R. to divert public roads on lots 1, 2, 3, con. 5, Loughborough tp.

13390. Apr. 7.—Authorizing Toronto, Hamilton & Buffalo Ry. to build spur from near Hamilton station to A. S. Nicholson's property.

13391. Apr. 5.—Approving Southern Central Pacific Ry. location from Burmis to sec. 2, tp. 4, r. 6, w. 5 m., mileage 0 to 7.84, Alta.

13392. Apr. 8.—Authorizing C.P.R. to build spur to Enderby Brick and Tile Co.'s premises, Enderby, B.C.

13393. Apr. 10.—Approving C.P.R. plans for 10 bridges on its Ontario, Lake Superior and Alberta Divisions.

13394. Apr. 10.—Ordering Bell Telephone Co. to file answer by Apr. 15, under penalty of $25 a day, to application of city of Montreal to provide uniform service with uniform rates within the whole city.

13395. Apr. 10.—Dismissing G.T.P. Branch Lines Co.'s application to divert a road on its Calgary branch in s.w. ¼ sec. 18, tp. 31, r. 23, w. 4 m., Alta.

13396. Mar. 24.—Authorizing C.N.O.R. to build subway at Kingston Road, Hamilton tp.

13397. -Apr. 7.—Amending order 13109, Feb. 25, which directed G.N.R. to widen ditch near Port Kells, B.C., by ordering it to close three small culverts on completion.

13398. Apr. 4.—Approving C.N.O.R. revised location at Smiths Falls, mileage 37.8 to 40.8, from Ottawa.

13399. Apr. 4.—Authorizing C.N.O.R. to cross C.P.R. near Jacques Cartier Jct., mileage 49.3 south from Hawkesbury.

13400. Apr. 4.—Authorizing Georgian Bay & Seaboard Ry. (C.P.R.) to build spur for Victoria Harbor Lumber Co., Victoria Harbor, Ont.

13401. Apr. 10.—Authorizing Guelph, Ont., Water Works Commissioners, to maintain pipe under G.T.R. at Alma St.

13402. Apr. 10.—Authorizing Hamilton Cataract Power, Light and Traction Co. to erect wires across T.H. & B. Ry. at Ottawa St.

13402 to 13408. Apr. 11.- Authorizing Sherbrooke Ry. and Power Co., to erect wires across Bell Telephone Co.'s wires and C.P.R. in Sherbrooke, Que.

13409. Apr. 11.—Approving revised location of V.V. & E. Ry. and Nav. Co., between mileage 12 and 16 from Coquihalla Summit, B.C.

13410. Apr. 11.—Authorizing G.T.R. to build spur on its Haliburton branch, near Lindsay, Ont., for Toronto Construction Co.

13411. Apr. 11.—Authorizing C.N.O.R. to build spur from its Deer Lake station to Graves Bigwood Lumber Co.'s premises at Gooseneck Lake, lot 6, Burton tp.

13412. Apr. 11.—Authorizing Canadian Tube & Iron Co. to build coal handling plant across C.P.R. siding on south side of Lachine Canal, Que.

13413. Apr. 11.—Authorizing C.P.R. to build three spurs for Vancouver Milling and Grain Co., Vancouver, B.C.

13414. Apr. 11.—Approving revision in location of portions of C.P.R. Moose Jaw northwesterly branch.

13415. Apr. 11.—Authorizing C.P.R. to change location of its eastbound main line at Royce Ave., Toronto.

13416, 13417. Apr. 11.—Authorizing C.P.R. to build bridges 27.71 and 48.71 over Silver Creek, Cartier sub-division, Lake Superior Division, Ont.

13418. Apr. 10.—Authorizing G.T.R. to expropriate certain lands in Toronto in connection with its grade separation.

13419. Apr. 11.—Authorizing C.P.R. to build spur to Hero Manufacturing Co.'s premises, Winnipeg.

13420. Apr. 11.—Authorizing Sherbrooke Ry. and Power Co., to erect wires across Bell Telephone Co.'s wires at King and Belvidere Sts., Sherbrooke, Que.

13421, 13422. Apr. 12.—. g Vancouver, Fraser Valley & Southern Ry. to connect with British Columbia Electric Ry. at Park Drive, Vancouver, and at Eighth Ave., Sapperton, New Westminster.

13423. Apr. 11. Ordering Bell Telephone Co. to connect with Colborne, Ont., Municipal telephone system.

13424. Apr. 11.—Ordering C.P.R. to provide suitable crossing at west end of its yard at Eagle, Ont.

13425. Apr. 12.—Rescinding order 13364, Apr. 4, and approving C.N.O.R. station ground plans, Cobourg.

13426. Apr. 12.—Approving C.N.R. crossing of 39 highways in Saskatchewan.

13427. Apr. 11.—Ordering G.T.R. to provide watchman at Montreal Rolling Mills' siding in Montreal.

13428. Apr. 12.—Approving C.P.R. plans for standard grain loading platforms.

13429. Apr. 12.—Authorizing C.N.O.R. to build bridge over Salmon River, Tyendinaga tp.

13430. Apr. 11.—Ordering C.P.R. to instal improved electric bell ¼ mile west of Piles Jct., Que., 20% to be paid out of the grade crossing fund.

13431. Mar. 15.—Authorizing city of Toronto to erect wires across C.P.R. and G.T.R. at Hanna Ave. and Liberty St.

13432. Apr. 13.—Authorizing C.P.R. to build four bridges on Eastern and Alberta Divisions.

13433. Apr. 15.—Authorizing C.P.R. to build spur for Blairmore Brick Co., Blairmore, Alta.

13434. Apr. 15.—Approving agreement between Bell Telephone Co. and Drummondville Telephone Co. for interchange of business.

13435. Apr. 15.—Authorizing V.V. & E. Ry. to take certain lands in Vancouver, B.C., for deviation and change of grade.

13436. Apr. 15.—Ordering C.P.R., G.T.R. and C.N.Q.R. to reduce export rates on lumber, in carloads, to Montreal for export, so that same differences shall exist between them and present domestic rates as existed between old domestic rates and old rates for export, and rescinding order 12301.

13437. Apr. 13.—Authorizing Seymour Power and Electric Co. to erect wires across Bell Telephone Co.'s wires in Newcastle, Ont.

13438. Apr. 18.—Extending for three months time for construction of Qu'Appelle, Long Lake and Saskatchewan Ry. spur on Lauriston St., Saskatoon, Sask., as authorized by order 10314, Apr. 19, 1910.

13439. Apr. 18.—Authorizing Fenlin Leather Co., Montreal, to lay water pipe under G.T.R. on North Bank Lachine Canal, Cote St. Paul, Que.

13440. Apr. 18.—Authorizing city of Toronto to erect wires across G.T.R. and G.N.W. Telegraph Co.'s wires near Queen St. and Sunnyside Ave.

13441 to 13443. Apr. 13, 19, 18.—Authorizing Seymour Power and Electric Co. to erect wires across G.T.R. and Bell Telephone Co.'s wires in Durham and Northumberland counties, Ont.

13444, 13445. Apr. 19.—Authorizing Hamilton Cataract Power, Light and Traction Co. to erect wires across C.P.R. and Hamilton, Grimsby and Beamsville Electric Ry. at Ottawa St., Hamilton. Ont.

13446. Apr. 19.—Authorizing Sherbrooke Ry. and Power Co. to erect wires across C.P.R. at King and Belvidere Sts., Sherbrooke, Que.

13447. Apr. 19.—Approving Algoma Central & Hudson Bay Ry. location from Hawk Lake Jct. to Hobon, Ont., mileage 0 to 30.23.

13448. Apr. 19.—Approving plans of G.T.R. freight house and re-arrangement of tracks at Cobourg, Ont.

13449. Apr. 18.—Approving G.T.R. bylaw appointing W. E. Davis, P.T.M., G. T. Bell, A.P.T.M., and H. G. Elliott, G.P.A., to prepare and issue tariffs for passenger traffic.

13450. Apr. 18.—Approving plans of G.T.R. subway at Brock Ave., Toronto.

13451. Apr. 18.—Authorizing C.P.R. to build bridge 107.5 on its Havelock subdivision, Ontario Division.

13452. Apr. 19.—Approving Essex Terminal Ry. location from lot 75, con. 2, Sandwich West tp., to Saginaw Salt and Lumber Co.'s property, Sandwich, Ont.

13453. Apr. 18.—Authorizing G.T.P. Branch Lines Co. to cross seven highways on its Tofield-Calgary branch, Alta.

13454. Apr. 18.—Authorizing C.P.R. to alter certain lines crossing Drew and Givens Sts., Woodstock, Ont.

13455. Apr. 18.—Authorizing Seymour Power and Electric Co. to erect wires across G.N.W. Telegraph Co.'s wires near Bowmanville, Ont.

13456. Apr. 18.—Authorizing Hamilton Cataract Power, Light and Traction Co. to erect wires across G.T.R. and G.N.W. Telegraph Co.'s wires at Sherman Inlet, Hamilton, Ont.

13457. Apr. 19.—Authorizing G.T.P.R. to divert road in n.w. ¼ sec. 10, tp. 43, r. 2, w. 4 m., Alta.

13458. Apr. 19.—Amending order 12013, re installation of gates at John St., Aylmer, Ont., by changing operating hours.

13459. Apr. 19.—Approving Eastern British Columbia Ry. bylaw authorizing G. H. Martin, G.F. and P.A., to prepare and issue tariffs.

13460. Apr. 19.—Ordering C.P.R. to build suitable farm crossing for J. Gevart, Young, Sask.

13461. Apr. 19.—Authorizing G.T.P.R. to divert road in s.w. ¼ sec. 18, 12, 12, 20, w. p.m., Brandon District, Man.

13462. Apr. 18.—Authorizing town of Pembroke, Ont., to lay pipe under C.P.R. at Pembroke-Mattawa Road.

◆

Interests connected with the Canadian Northern Ry., are reported to have purchased the Western Dominion Collieries, and the Roche Pircee Collieries, situated on the C.N.R. Bienfait, Sask., branch.

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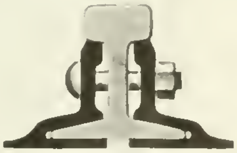
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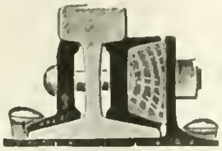
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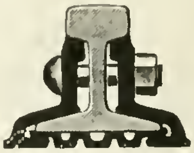
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Orford Mountain Ry.—The Dominion Parliament has authorized the company to build an extension from Mansonville to the International boundary at Highwater, Que.

Ottawa, Northern and Western Ry.—The Dominion Parliament has extended the time for the building of the proposed line from Maniwaki to James Bay, Que., and of the extension to Lake Timiskaming.

Grahams Wooden Trestle.—We are officially advised with respect to the reported call for tenders for replacing the wooden trestle at Grahams station, near Ottawa, that it is contemplated to replace the existing trestle by a permanent structure during the current year, but that it has not yet been definitely decided whether it will be of concrete or of concrete and steel.

Montreal-Toronto Second Track.—We are officially advised that a contract for the bulding of a second track from Smiths Falls westerly to Bathurst, Ont., 19 miles, on the Montreal-Toronto line, has been let to Jones and Girouard, of Ottawa. Work is being started at once, the contractors having opened an office in Smiths Falls. Bathurst is the point from which it is proposed to start the projected line to and along the lake shore to near Locust Hill, on the present line into Toronto, under the charter of the Campbellford, Lake Ontario and Western Ry.

The Board of Railway Commissioners has approved of plans for grade revision between mileage 0 and 16.7, and to revise location of line between mileage 6.2 and 6.9, on the proposed second track from Smiths Falls to Glen Tay, Ont.

Place Viger Improvements, Montreal.—The viaduct on Notre Dame St., between Wolfe and Montcalm streets, will be over 1,000 ft. long and will have on top two tracks for electric railways, two traffic roadways, and two sidewalks for pedestrians. Underneath the viaduct is space for a two story freight shed, upon which work will be commenced immediately. It is expected that the work will be completed by the fall.

It is expected that work will be started in June upon the alterations of the hotel, by the conversion of the part formerly used for station purposes, into additional hotel space. The alterations will provide an additional 12,000 square feet of floor space. The detail plans are being worked out.

Ottawa.—The report of the Ottawa city engineer and W. F. Tye, consulting engineer, Toronto, upon the railway situation has been presented to the city council. The engineers recommend the closing of part of the Rideau Canal, to permit of the construction of a tunnel to be used by all railways, from the central station to the union station, with the cutting of a new canal on the western side of the city. It is also recommended that the G.T.R. cross town lines be taken up, and connection made with the tunnel. The cost of building the tunnel is estimated at about $1,500,000. The plan recommended follows closely that prepared by the C.P.R. some time ago. In explaining the plan to the city council, April 5, Mr. Tye said it would be the best thing that ever happened to Ottawa if it were carried out. The plan and report were referred to a special committee for full consideration.

The Minister of Railways and Canals is reported as saying that the proposal would require serious consideration. The marine interests would have to be consulted, and the whole project would have to be examined by the Department engineers Personally, he did not think that the Government should be asked to pay for the building of the new cut for the canal, but he could not say what would be done when the matter came up for consideration.

Campbellford, Lake Ontario and Westery Ry.—The Dominion Parliament has authorized the company to build a line from the C.P.R. between Smiths Falls and Sharbot Lake, southwesterly to Cobourg, and thence westerly to the C.P.R. line between Locust Hill and Leaside Jct., Ont., and has extended the time for the building of previously authorized lines.

Georgian Bay and Seaboard Ry.—The Dominion Parliament has authorized a change in the point of junction of this line, now under construction, with the Montreal-Toronto line, from between "Cavanville and Maberly" to between "Burketon Jct. and Havelock," Ont.

Toronto City Improvements.—The tenants of the houses on the property purchased by the C.P.R. in the block bounded by Cherry, Water, Overend, Tate and Front streets, were notified April 7, to vacate the premises by the end of the month. The land acquired is about three acres and will be laid out as a freight yard with freight shed for the accommodation of the business in the east end of the city.

The question of the building of a new passenger station at North Toronto is still in abeyance, until everything is finally settled as to the route of the Canadian Northern Ontario Ry. in the vicinity.

Men started work April 6, on the site at the corner of Dundas St., and Royce Ave,, where a station is to be built. It is expected that this building will be completed in Sept. It will be of brick, one story high with covered platform for passengers.

In connection with the laying out of yards on the Government House site, the company has acquired the old Duke of Cumberland hotel property, in order to provide a suitable space for approach tracks. The question of the closing up of certain streets in order to permit this plan to be carried out is under consideration by the city council, and application has been made to the Board of Railway Commissioners for approval of the plans for laying out the yards.

The buildings at the south east corner of Yonge and King St. are being pulled down, in preparation for the erection of a large office building, in which all the company's city offices will be located.

At West Toronto substantial progress is being made with the bridge and freight shed building at the present station, and with the additional building at the car shops. The property at Elizabeth, Jane and Scarlett streets, which is to be added to the yard, is being cleared and preparations are being made for the building of the subways.

The Board of Railway Commissioners has approved of the location plans for the line from mileage 74.25 to 87.65. An agreement has been reached with the Lindsay town council as to the closing of Carline St. north of Colborne St. Additional plant has been delivered at Lindsay for the Toronto Construction Co., and additional gangs of men are being set to work.

South Ontario Pacific Ry.—We are officially advised that a contract has been let to the Toronto Construction Co., for the building of the line between Hamilton and Guelph Jct., Ont.

The Dominion Parliament has extended the time for the construction of previously authorized lines, and has given power for the building of a line from Guelph Jct., to Hamilton, Ont.

Hamilton, Waterloo and Guelph Ry.—The Dominion Parliament has authorized the company, upon a two-thirds vote of its shareholders, to issue $1,500,000 of its share capital as preference stock, and to provide a cumulative dividend therefor not to exceed 6%.

Guelph and Goderich Ry.—The Dominion Parliament has extended the time for the building of the proposed branch line from Woolwich, Peel or Wellesley tps., to St. Marys and Clinton, via Stratford, Ont.

J. W. Leonard, General Manager, Eastern Lines, was in Stratford, Ont., recently, discussing the proposed route for the entrance of the company's lines into that city. The plans provlde for a line from Linwood and for another from Embro, which would affect a portion of the city. It is expected that the line from Linwood will be built first. The company favors the adoption of a route through the city along the south bank of the river, with the flats adjoining skating rink for yard purposes. The citizens do not favor this route, on the same grounds that they objected to the route previously proposed on the north bank of the river, but if no other route is available they will consent on conditions which are under consideration.

London Station.—The question of the construction of a union station in London, Ont., is being revived in consequence of surveys which are being made by C.P.R. engineers for the building of a branch line from Pottersburg, or as it is also called, London Jct., to a junction with the London and Port Stanley Ry., (leased to the Pere Marquette Rd.) The P.M.R. has running rights into the G.T.R. station, and the reports say, "if the C.P.R. gets into the city from the south, it will not be long before the question of elevated tracks and a union station are decided for all time to come."

London Roundhouse—The new roundhouse at London, Ont., for which tenders are under consideration, will be built on standard plans. There will be accommodation for 22 locomotives, the building to have a depth of 95 ft.; and there will be attached a machine shop 51 by 50 ft., and a boiler house 35 by 50 ft. The foundations will be 5 ft. below base of rail; the walls and piers of concrete; all steelwork on the inside to be enclosed with concrete; the floors to be of concrete; the roof to be of mill construction, with 3 in. planking covered with tar and gravel; the smoke stacks and ventilators to be of asbestos construction; the building to be wired for electricity and piped for steam heat. The present turntable is to be utilized for the new house.

Walkerton and Lucknow Ry.—The Dominion Parilament has extended the time for the completion of the section of the line from Walkerton to Lucknow, via Teeswater, Ont.

Collingwood Southern Ry.—The Dominion Parliament has extended the time within which the railway authorized to be built by the statutes of 1907, chap. 77, may be constructed.

Stobie River Bridge.—The Board of Railway Commissioners has authorized the company to build a bridge over the Stobie River, on the Sault Ste. Marie branch.

Fort William Freight Office.—Tenders are under consideration for the erection of a freight office at Fort William, Ont.

Kenora Subway.—A contract is reported let to C. G. Anderson, Winnipeg, for the construction of a subway under the tracks at Main St., Kenora. The subway will be a little west of the present level crossing and will give a headway of 14 ft. The contract calls for the completion of the work in July.

Winnipeg Shops, Etc.—Tenders are under consideration for the following works at Winnipeg: Extension of freight shed; an unholstering shop, a boiler shop and transfer table.

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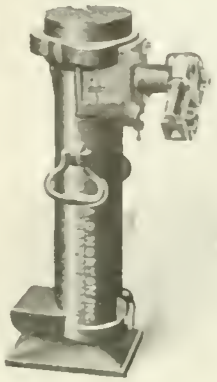

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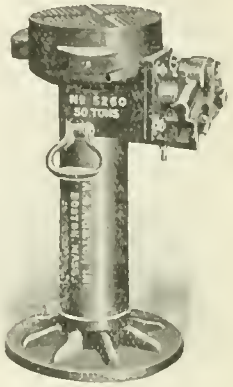

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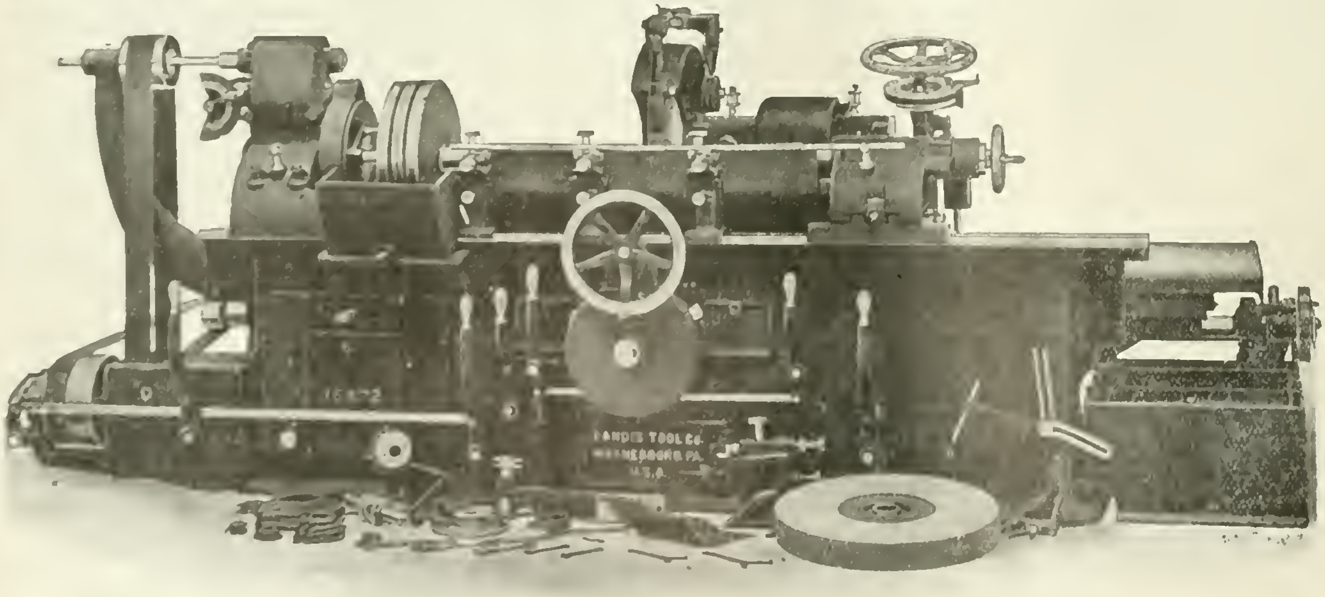

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Western Lines Legislation.—The Dominion Parliament has extended the time within which certain branch lnes authorized to be constructed by acts passed in 1901 and 1907 may be built, has authorized the building of additional lines as specified on pg. 23 of our Jan. issue; and has fixed the terminus of the Estevan branch at Forward, instead of as located by par. g, sec. 3, chap. 74 of the statutes of 1907.

Western Line Fencing.—It is reported that 700 miles of fencing will be built on the company's western lines during the summer.

Winnipeg-Brandon Bridges and Culverts.—A contract is reported to have been let to G. H. Archibald, Winnipeg, for the erection of a number of culverts and small bridges on the line between Winnipeg and Brandon, Man.

Manitoba and North Western Ry.—The Dominion Parliament has authorized an extension of time for the construction of the lines authorized to be built by the statutes of 1893, sec. 9, chap. 52, and by the statutes of 1909, sec. 2, chap. 104, and has authorized a change in the location of the terminus of the proposed Theodore-Insinger line from range 18 or 19 to range 16 or 17.

Brandon Station.—Tenders are being invited for the erection of a new station building at Brandon, Man. The work proposed to be done includes the tearing down of the section of the present building opposite the foot of Tenth St. The new building will cover the site of this part of the old building, and the adjacent unoccupied land, extending from the track platform to Pacific Ave. The building will be three stories high on the track front. The main entrance to the station from the city will be on the first floor, where there will be provided a general waiting room, ladies' waiting room, retiring rooms, ticket office, etc. A wide staircase will lead from this to the platforms and on the ground level there will be provided men's waiting room, smoking room, trainmen's rooms, baggage room. The dining room and lunch counter will be located in the east end of the old building, at present used as waiting rooms and ticket office, while the express office will be retained in its present situation. The third floor will be occupied by the officers of the various departments. The building will be of brick with stone trimmings and will be surmounted by a clock tower.

Estevan to Forward, Sask.—We are officially advised that a contract has been let to the J. D. McArthur Co., for the building of 35 miles of line from Estevan northwesterly to a junction near Forward, Sask., with the line running westerly from Weyburn.

The route of this line will be westerly from Estevan, then swinging northerly to a junction with the line running from Weyburn through Forward, near the latter point. The engineer in charge of construction work is M. McKenzie. The contractors have most of their plant on the spot. It is expected that the line will be completed this year.

Sutherland, Sask.—Press reports state that considerable work is to be done during the current year on the terminal yards at Sutherland, near Saskatoon, Sask. The work, it is stated, includes an extension of the present shops and roundhouse, and a warehouse, together with a travelling crane in the freight yards.

Qu'Appelle Valley. — In connection with the press reports as to the building of a line for 150 miles along the Qu'Appelle River valley, we are advised that the company will eventually build such a line, but no location surveys have been made. We are further advised that there is nothing in the newspaper report that a summer hotel is to be built by the company at Fort Qu'Appelle, Sask.

Moose Jaw, Southerly.—The route map of this projected branch line from Moose Jaw to Gravelburg, Sask., has been approved by the Minister of Railways. C. Tomkins, Omaha, Neb., arrived with an outfit at Moose Jaw, April 30, and pitched his camp at Lillico, seven miles out of Moose Jaw, on the route of this line. He is reported to have been given a grading sub-contract.

Alberta Division Contracts.—Contracts are reported to have been let as follows: six stall engine house addition at Red Deer, Carter, Hall and Aldinger, Winnipeg; station buildings at Tomkins, Suffield, Burdett, Bow Island and Redcliffe, J. E. Lussier, Medicine Hat; bunk house at Red Deer, J. M. Eaton, Strathcona; extension to station at Medicine Hat, J. E. Lussier; locomotive foreman's house, Red Deer, J. M. Eaton.

Hotel at Calgary.—The hotel proposed to be erected at Calgary, Alta., will, it is reported, cost about $1,000,000. An agreement in connection with the proposal came before the council April 4, and after some discussion was passed.

Boundary Lines.—C. S. Moss, Resident Engineer, Nelson, B.C., is quoted as stating that the betterment plans for that district for the year include the erection of two steel bridges to replace wooden structures, at Cascade and Greenwood; the filling of a trestle at Fisherman and five others not yet decided on; the relaying of about 70 miles of track with 85 lb. steel; and a considerable mileage of ballasting.

British Columbia Southern Ry.—The Dominion Parliament has extended the time for the building of various lines. These are extensions to the 49th parallel, and the Tobacco Plains, a branch from the main line about 60 miles west of the eastern boundary of British Columbia; the western section of the line and the branches to Nelson and Martin Creek, as described in the statutes of 1900, sec. 1, chap. 52, and the branch line from Michel to Kananaskis, described in the statutes of 1909, sec. 1, chap. 54.

Kootenay Central Ry.—The company's engineer who will have charge of construction on the extension of this line is H. N. Merriman, who arrived at Golden, B.C., Mar. 29.

A contract has been entered into under the Dominion Act granting aid to certain railways in respect of the construction of a line from Golden, B.C., towards the International boundary, via Windermere and Fort Steele, thence crossing the Crows Nest Pass branch of the C.P.R. near Elko, a distance of 186 miles.

Kootenay and Arrowhead Ry.—The Dominion Parliament has granted an extension of time for the completion of the line between Gerrard and Arrowhead, B.C., authorized to be built by the statutes of 1901 sec. 7, chap. 70.

Pacific Division Betterments. — The company has several gangs at work extending the sidings at various points between Vancouver and Kamloops. Between Vancouver nad North Bend, it is reported that 30 new bridges will be erected during the year, and that 13 of the present wooden bridges will be replaced by steel structures.

Pacific Division Contracts.—Contracts are reported to have been let as follows: Ten stall addition to roundhouse and a pattern house at False Creek, Vancouver, The Canadian Dart Co., Vancouver; fire protection system at False Creek yards, J. H. Vickers, Vancouver; oil tanks at C.P.R. wharves, Vancouver, Campbell and Wilkie, Vancouver; station at Abbottsford, A. D. McQuarrie, Vancouver; addition to station at New Westminster, C. Tossell, Vancouver; new station at Merritt, J. Boch, Merritt; new freight sheds at Harrison Mills, Wolharbin and Savonas, Campbell and Wilkie.

New Westminster Yards.—The reconstruction and the extension of the company's yards at the west end of New Westminster have been completed. Some seven miles of new track have been laid, and provision has been made for future extensions.

False Creek Freight Sheds.—New plans for the proposed 250 ft. extension of the freight shed at False Creek, Vancouver, are being drawn, in order to comply with the city bylaws as to fire protection. The building will be either of brick or concrete.

Carrall St. Subway, Vancouver.—The question of the construction of a subway under the C.P.R. tracks in the vicinity of Carrall St., so as to give access to the water front, is under consideration by the city council. The proposed subway will be 42 ft. wide with two seven foot sidewalks, and the estimated cost is $225,000. The matter was discussed at a conference with the North Vancouver council April 11, further consideration being postponed to May 11.

Esquimalt and Nanaimo Ry.—In an interview at Vancouver, Mar. 27, on his return from England, R. Marpole, Vice President, is reported to have said he would be in Montreal early in May to consult with Sir Thos. G. Shaughnessy, as to future construction on this line. The extension into Alberni was expected to be completed by the end of June. There might be some delay, however, as the bridge work had been held up owing to inclement weather.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—United States papers say that the recent increase in the capital of the company was made for the purpose of completing the company's terminal facilities at St. Paul, Minneapolis, Duluth and Superior, and the building of additional lines. These lines, it is further stated, include a branch from near Foxboro, Wis., on the Brooton-Duluth line, southerly to Frederick, 65 miles, and a line from Fordville, N.D., westerly to Drake. (April, pg. 339.)

Judgment re Restricted Rates.

In the matter of restricted rates the Interstate Commerce Commission, U.S.A., has given a judgment which is summarized as follows: The Commission adheres to its ruling that "a tariff providing for reduced rates on coal used for steam purposes, or that the carrier will refund part of the regular tariff charges on presentation of evidence that the coal was so used, is improper and unlawful—that is to say, that the carrier has no right to attempt to dictate the uses to which commodities transported by it shall be put in order to enjoy a transportation rate." It also adheres to its ruling that "a carrier, or a person or a corporation operating a railroad or other transportation line may not, as a shipper over the lines of another carrier, be given any preference in the application of tariff rates on interstate shipments, but it may lawfully and properly take advantage of legal tariff joint rates applying to a convenient junction or other point on its own line, provided such shipments are consigned through to such point from point of origin and are, in good faith, sent to such billed destination." Carriers are ordered to cease and desist from maintaining tariffs which contain rates applicable only upon shipments for a particular consignee or when the commodity transported is for a particular use or rates that are restricted to the use of certain shippers and not open to all shippers alike.

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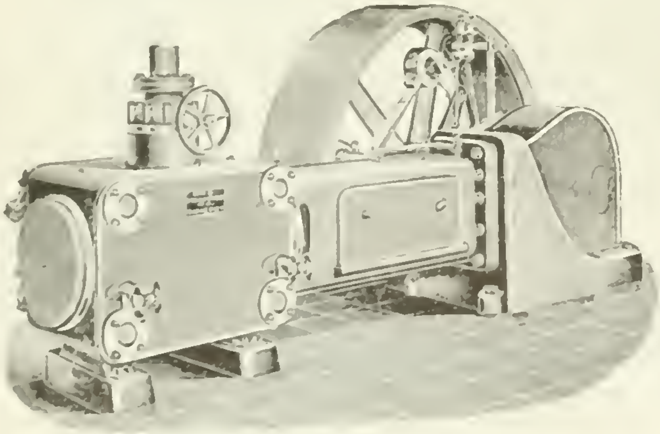

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Railway Commissioners' Traffic Orders.

Summaries of other traffic orders are given on another page under "Orders by Railway Commissioners":—

Cartage on Safes.

13185. Feb. 27, 1911.—Re application of J. and J. Taylor, Toronto, complaining that the note appended to item 35, page 47, of Canadian Classification 15, namely, "Safes of 1,000 lbs. each, or over, to be loaded and unloaded by owners," is unjustly discriminatory against them as manufacturers of safes: It is ordered that the said note to item 35 be struck out, and that the words, "Safes of 1,000 lbs. each, or over," be struck from the list of exceptions to the tariffs of cartage charges of the railway companies.

Rates on Gas-House Coke from Black Rock.

13215. Feb. 27.—Re application of Thomas Miles and Sons, Ltd., Hamilton, Ont., complaining of advance by G.T.R. in its freight rates upon gas-house coke from Black Rock, N.Y., to Hamilton and other Ontario points, made effective Dec. 12, 1910, by Special Tariff C.R.C. no. E. 2195: It is ordered that the railway company restore the rates on gas-house coke from Buffalo (River St.), Black Rock and Suspension Bridge, N.Y., to the Ontario points shown in its Special Tariff, C.R.C. no. E. 2195, which were in effect on Dec. 11, 1910; the said rates to be made effective not later than April 24, 1911.

Minimum Weight on Toasted Corn Flakes.

13228. Jan. 17.—Re application of Battle Creek Toasted Corn Flake Co., Ltd., of London, Ont., for a reduction in the minimum carload weight of toasted corn flakes from London to points west of Port Arthur and Fort William, Ont.: It is ordered that Canadian Classification 15 be amended so as to provide a minimum carload weight of not more than 24,000 lbs. for flaked or cooked cereals (which may be enumerated if the railway companies so desire) when loaded in cars not exceeding 36½ ft. in inside length, subject to the greater minima for cars of greater length provided in rule 1 (b) of the said classification; and that the said flaked or cooked cereals be not removed to a higher class of the said classification by reason of this order; the said amendment to be included in the first supplement to the classification.

This order was amended March 29 by order 13317 by striking out the words, "flaked or cooked cereals" in the operating part of the order and substituting the words "cereals flaked (roasted)."

Rates from Eastern Canada to Regina.

13249. March 15.—Re application of the city of Regina, under secs. 314 and 332 of the Railway Act, for an order directing a reduction in the rates on classes 1 to 10 on goods shipped from Eastern Canada to Regina, Sask., and re application of Canadian Northern Ry. under sec 56 of the Railway Act, for leave to appeal to the Supreme Court of Canada, from order 12520, Dec. 10, 1910: Upon hearing the application in the presence of counsel for the C.P.R. and the C.N.R. respectively, and for the respondents; and upon reading the notice of motion and the affidavit of E. W. Beatty, General Solicitor, C.P.R., and what was alleged at the hearing, the applicants undertaking to get this case set down for hearing at the present sittings of the Supreme Court unless in the view of the Supreme Court itself or a judge thereof, the case should not be set down; and it appearing that in the opinion of the Board questions of law arise: It is ordered that the said railway companies be granted leave to appeal to the Supreme Court of Canada from the said order subject to and upon the terms and conditions following: That the applicants undertake to set the appeal down for and expedite the hearing thereof at the present sittings of the Supreme Court. That if the appeal be not argued at the present sittings of the Supreme Court, for any reason for which the applicants may be to blame, then the appeal shall not operate as a stay of the said order, unless the Supreme Court, or a judge thereof, shall otherwise order. That the order issued herein, dated Feb. 21, 1911, be repealed.

White Pass and Yukon Railway Rates.

13292. March 23. Re order 12783, Jan. 18, directing, inter alia, that the respondent companies substitute for Joint Freight Tariff C.R.C. 9 and Joint Passenger Tariff C.R.C 3, joint tariffs of freight and passenger tolls based on a reduction of at least one-third in each case from the freight and passenger tolls shown in the tariffs disallowed by the said order, the said substituted tariffs to become effective not later than April 1, 1911, and re application on behalf of the respondent companies for an extension of time within which the requirements of the said order may be complied with. Upon its appearing that the respondent companies have petitioned to the Governor-in-Council by way of appeal from the above order; and that the appeal cannot be heard before the date that said tariffs were required to be put into effect; it is ordered that the time at which the tariffs required to be substituted under order 12783, were to become effective, be extended until June 1, 1911.

Stakes and Fastenings for Flat Cars

13326. March 27.—The application of Canadian Manufacturers' Association, British Columbia Lumber and Shingle Manufacturers, Ltd., Montreal Lumber Association, Canadian Lumbermen's Association, Mountain Lumber Manufacturers' Association, and St. John, N.B., Board of Trade, under sec. 284 of the Railway Act, for an order directing all railway companies subject to the Board's jurisdiction to reimburse shippers for any and all expenses to which they are subjected by reason of having to equip flat or other cars with stakes and fastenings, so as to comply with the provisions of order 7599, July 24, 1909; it appearing that the existing allowances from track scale weights to cover variations in the tare of cars, absorption of moisture ,accumulations of ice, snow, etc., do not include the weight of the auxiliary material necessary to retain the loads in or upon open cars, except where such provision is specified, inter alia, in the case of racks, and (or) blocking in connection with shipments of bark, machinery, and vehicles. It is ordered that the railway companies file special tariffs, to take effect not later than May 1, 1911, providing for an allowance of 500 lbs. from the weight of each carload in or upon open cars for the weight of such racks, stakes, standards, boards, strips, supports, or other material furnished by shippers, as may be necessary to retain the lading in or upon the said open cars from the point of shipment to the destination thereof, and for which no allowances are specifically prescribed in the existing tariffs or classifications: Provided that the minimum weight prescribed for the said freight or lading by the classification or tariff applicable thereto, shall not be reduced by reason of the said allowance.

Classification Ratings on Tobacco.

13355. March 21. Re application of Canadian Freight Association, under sec. 321 of the Railway Act, for an order approving of proposed Supplement no. 1 to Canadian Classification 15, submitted Dec. 16, 1910. Upon hearing the application at the sittings of the Board held in Ottawa and Toronto on February 21 and 28, 1911, respectively, the applicant association, the Canadian Manufacturers' Association, The Montreal Board of Trade, the Dominion Tobacco Co., the Imperial Tobacco Co. of Canada, and the Ontario Wholesale Grocers' Guild being represented at the hearing, the evidence offered, and what was alleged, it is ordered that, in so far as the said proposed Supplement no. 1 affects the ratings of tobacco, the application be dismissed.

Rate on Asphalt Oil, Philadelphia to Toronto.

13356. April 8.—Re application of the Constructing and Paving Co., of Ontario, Ltd., for an order directing that a through rate be established on shipments of asphalt oil in tank cars from Philadelphia, Pa., to Toronto, and that overcharges already made on such shipments be refunded, it is declared that the legal rate chargeable upon the shipments complained of, when routed via the Pennsylvania Rd. from Philadelphia to Buffalo, thence via the Michigan Central Rd., and Toronto, Hamilton & Buffalo Ry., and the C.P.R., was 22c per 100 lbs, the joint tariff fifth-class rate under the Official Classification published and filed with the Board, which rate is still in force. And it is ordered that the C.P.R. be authorized to refund to the applicants the difference between the rate of 22c. per 100 lbs. and the rate collected by it on the said shipments.

Transportation Conventions Etc. in 1911.

May 9-10.—American Railway Industrial Association, Detroit, Mich.

May 15-18.—International Railway Fuel Association, Chattanooga, Tenn.

May 17.—American Railway Association, New York City

May 22-24 — Railway Storekeepers' Association, Milwaukee, Wis.

May 23-26.—Air Brake Association, Chicago, Ill

May 23-26—International Master Boiler Makers' Association, Omaha, Neb

May 24-26.—Association of Railway Claim Agents, Montreal.

June 14-16.—American Railway Master Mechanics' Association, Atlantic City, N.J

June 19.—Association of Railway Telegraph Superintendents, Boston, Mass.

June 19-21.—Master Car Builders' Association Atlantic City, N.J.

June 20.—American Association of Freight Agents, Kansas City, Mo.

June 20.—Train Dispatchers' Association of America, Baltimore, Md.

June 20-21.—Association of Transportation and Car Accounting Officers, Cape May, N.J.

June 21.—Freight Claims Association, St. Paul, Minn.

June 22.—American Association of Demurrage Officers, Niagara Falls, N.Y.

July 25-27.—International Railway General Foremen's Association, Chicago, Ill.

Sept. 19.—American Association of General Passenger and Ticket Agent, St. Paul, Minn.

The Contractors' Material Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of $50,000, to carry on a general contracting and contractors' supply business, and, in connection therewith to own and operate steam and other vessels, and to act as warehousemen, shipping and forwarding agents.

The Prince Rupert-Nanaimo Collieries Ltd., has been incorporated under the B.C. Companies Act, with a capital of $1,500,000, to carry on a general colliery business, and in connection therewith to build, acquire and operate, tramways, logging railways, steam and other vessels, docks, and other shipping facilities, and to act as general shipping and forwarding agents.

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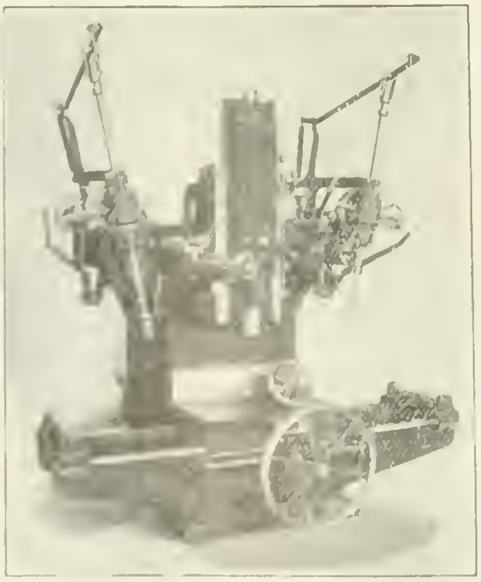

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The Dominion Parliament has voted $4,500,000 on capital account for surveys and construction work on this railway.

Speaking in Quebec recently, S. N. Parent, Chairman of the Commission having in charge the building of the line from Moncton, N.B., to Winnipeg, Man., said work at the eastern end was so far advanced that tenders would shortly be invited for the building of the stations from Moncton westerly. The site for the station in Quebec, at the Champlain market, had been cleared, and as soon as the plans for the building had been approved by the G.T.. Pacific Ry., tenders would be asked for its construction. The work of completing the lines to the site of the Quebec Bridge would be gone on with during the season. Pending the building of the bridge a car ferry service is proposed and plans for the landing places for such a ferry are now under consideration.

Quebec press reports, April 18, state that as a result of the conference between the Commissioners and the directors of the G.T. Pacific Ry., it was decided to add to the dimensions of the station building to be put up. The frontage of the building, it is said, will be increased to 350 ft. and the cost increased from $750,000 to $1,500,000.

Replying to questions in the House of Commons, April 5, the Minister of Railways said the reason why only about 28% of the work had been done on contract 12, about 13% on contract 16D, and nothing on contract 13C, was because the work on adjoining sections had not been completed so as to permit of getting in supplies, materials, etc., under favorable conditions. Contract 18E had been started, and about 69% of the work had been done. It was impossible to state exactly when any one of these contracts would be completed, but it was estimated that they would all be finished in 1912.

GRAND TRUNK PACIFIC RAILWAY.

Contracts are reported to have been placed for the erection of about 500 miles of wire fencing in the prairie provinces during the current year.

The company has ordered from the Algoma Steel Co., Sault Ste. Marie, Ont., 18,000 tons of 60 lb. steel rails for early delivery at Fort William, Ont., for use on branch lines in Saskatchewan and Alberta.

The construction programme for the season has been arranged, and the contracts let for the work were finally approved at a conference held at Montreal, April 6, between E. J. Chamberlin, Vice President and General Manager, and C. M. Hays, President G.T.R. and G.T. Pacific Ry. The work, said Mr. Chamberlin, in an interview in Winnipeg a few days previously, for which contracts had been let includes the construction of 645 miles of new branch lines, 265 miles of main line track, 200 miles of grading on branch lines, the erection of 140 station buildings, and a number of steel bridges. The details of the work are referred to below.

The modified plans for the hotel at Winnipeg have been completed by Ross and MacFarlane, architects, Montreal, and provide for the erection of an eight storey building, with about 350 rooms

In connection with the reported line from Harte to Brandon, Man., we are advised that while people in the vicinity of Brandon have been agitating for the building of such a line, no arrangement has yet been entered into for its construction.

Further work will be done on the line northerly and southerly from Melville, Sask. The southerly branch will be completed into Regina, giving the line a length of 95 miles. Track has been laid on this branch from Melville to Balcarres, leaving about 68 miles of track to be laid to complete the line.

The line from Regina, southeasterly to the International boundary, 155 miles, will also be gone on with.

Another line will be started at Regina, with Moose Jaw as its present terminus, but with the intention of ultimately reaching Calgary. In connection with the work in Regina arrangements are being made for the laying out of large terminal yards.

On the branch from Young to Prince Albert, on which 25 miles of track were laid during 1910, further work will be done in the expectation of completing the remaining distance about 72 miles. Grading will be completed on a branch from near Biggar to Battleford, and it is expected to also have track laid this year.

With the exception of the Regina-Moose Jaw line, the contract for which has been let to Rigby and Hyland, the contracts for these lines have been let J. D. McArthur, Winnipeg. A contract for the building of 50 miles of line from Biggar towards Calgary has been let to Foley, Welch and Stewart.

In connection with these lines the following information from the latest report of the Saskatchewan Department of Railways will be of interest.

The Saskatchewan Legislature by chap. 4 of the statutes of 1908-9 voted aid by way of guarantee of bonds for $13,000 a mile in respect of three branch lines having a total length of 195 miles; and by chap. 5, of the statutes of 1909-10, aid at the same rate in respect of five other branches with a total length of 475 miles; altogether 670 miles. Of these eight lines, construction was carried on during the year ended Feb. 28, 1910, on two lines and 58.22 miles of grading, completed with 50.43 miles of track laid thereon. Following is a list of branch lines subsidized with the work done, up to the date of the report:—

	Total mileage.	Miles graded.	Miles track laid.
Melville-Yorkton branch ...	40	26.48	26.48
Melville-Regina branch	110	31.74	23.95
Biggar-Battleford branch ..	45	.....	.....
Regina Southeast	155	.....	.....
Young-Prince Albert branch	110	.....	.....
Regina - Moose Jaw - Calgary branch	110	.....	.....
Biggar-Calgary branch	50	.....	.....
Cutknife branch	50	.....	.....
Total	670	58.22	50.43

Our returns of track laid in 1910, show that track was laid on an additional 70 miles, including 25 miles on the Young-Prince Albert branch on these lines during that year, and reports as to contracts let show that work is in progress on four of the lines, and that a contract is expected to be let at an early date on the Regina-Moose Jaw line. The matter of the building of the lines from Biggar and the Cutknife branch has not yet been definitely discussed by the management.

In Alberta the only branch line under construction is the one starting at Tofield, on which steel has been laid to Red Deer River, about 80 miles. A bridge, with a rail level 200 ft. above high water mark is under construction, and as soon as this is completed track laying will be resumed southerly to Calgary. The grading is well advanced, and the contractor, J. D. McArthur, expects to have it completed this year. The railway committee of the Calgary city council has had the plans for the entrance of the line into the city under consideration, and finally approved of them April 1, subject to the company's undertaking to provide for the installation of certain protective devices at the crossings. At Edmonton, it is proposed to erect a large hotel for which plans will be prepared, as soon as certain matters under discussion with the city General Passenger Agent, stated April 3, that these matters were practically decided and that the hotel would be built on McDougall Ave., opposite the Edmonton Club. A line of about 70 miles will be started at Bickerdike, and will run through the properties of the Pacific Coal Co., and the Yellow Head Pass Coal Co., with a branch to the Mountain Park Coalfields. The name of the contractor for the building of this branch has not yet been announced. The main line has been completed to Prairie Creek, about 200 miles west of Edmonton, where a large bridge has just been completed. Another large bridge is under construction over the Athabasca River, some distance westward, and good progress is being made westerly to Tete Jaune Cache, by the contractors, Foley, Welch and Stewart. On the line easterly from Prince Rupert, good progress has been made during the winter on the tunnel work in the Kitselas Canyon, and the contractors, Foley, Welch and Stewart, will push on with the work during the summer. The 400 mile section to connect up with the line coming westerly is expected to be placed under contract during the summer. We are advised that while surveys have been made, within the last year, for a line from Fort George on this section to Vancouver, B.C., it is not contemplated to make any move towards its construction until after the main line to Prince Rupert is completed.

Since the foregoing was put in type we have been officially advised that the G.T.P.R. management expects to do the following work during the current year:

Grading Main Line.

	Miles	
Prairie Creek to Tete Jaune Cache	114	
Copper River to Aldermere	140	
		254

Grading Branches.

	Miles	
Calgary branch (to complete)	117	
Battleford branch (to complete)	28	
Regina branch (to complete)	30	
Regina-Boundary branch (to complete present contract)	40	
Regina-Moose Jaw branch (to complete)	35	
Prince Albert branch (to complete)....	59	
Alberta Coal branch (to complete)	48	
New branch off same (new contract)..	25	
Biggar-Calgary branch (new contract)..	50	
		432
Total		686

Tracklaying, Main Line.

	Miles
Prairie Creek to Tete Jaune Cache........	114
Copper River to Aldermere	140
Calgary branch	117
Battleford branch	48
Regina branch	58
Regina-Boundary branch	90
Regina-Moose Jaw branch	40
Prince Albert branch	87
Alberta Coal branch	54
Total	748

It is also the intention to erect 140 station buildings this season.

Thee G.T. Pacific Branch Lines Co., has been authorized by the Dominion Parliament to build the additional lines mentioned on pg. 1035 of our issue of Dec. 1910, and has been granted an extension of time for building the lines authorized by sec. 11, chap. 99, of the statutes of 1906.

An extension of time for the construction of the Pacific Northern and Omineca Ry., has been granted by the Dominion Parliament. The company was originally incorporated in 1902, and its powers amended by chap. 141 of the statutes of 1906. (April, pg., 331.)

◆

The C.P.R. is arranging for an extensive decoration of its London, Eng., offices, for the coronation. The general scheme, arried out in red and gold, will illustrate the many energies of the Dominion, special emphasis being given to grain-growing, shipping and railway construction. At night the building will be illuminated wth several thousands of electrc lights.

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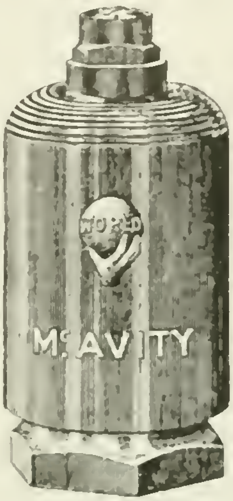

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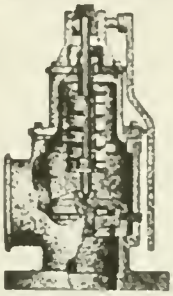
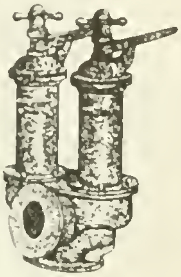
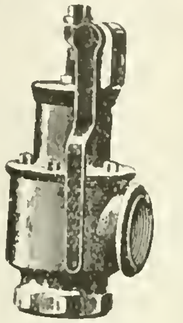
SECTIONAL VIEW



TWIN



SCREWED BASE



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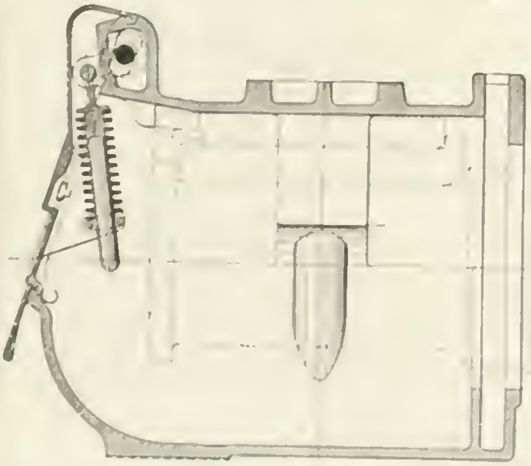

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Railway Finance, Meetings, Etc.

Alberta Ry. and Irrigation Co.—Approximate net profits from all sources, exclusive of land sales, for Feb., $32,640, against $45,211 for Feb., 1910. Cumulative net profits for eight months ended Feb. 28, $247,250. Railway traffic receipts for Mar., $32,171, against $34,513 for Mar., 1910. Cumulative traffic receipts for nine months ended Mar. 31, $252,272.

Canadian Northern Ry.—Reference was made in our April number to an issue of stock offered in London. The prospectus issued by Lazard Bros. & Co., March 14, offered £958,888 3½% guaranteed first mortgage debenture stock Canadian Northern Ry. and £647,260 similar stock Canadian Northern Alberta Ry., both unconditionally guaranteed as to principal and interest by the Dominion Government. The issue price was £94 10s.

Dominion Atlantic Ry.—Gross earnings for Feb., $75,600 against $81,421 for Feb. 1910. Aggregate gross earnings for eight months ended Feb. 28, $896,606, against $964,004 for same period 1909-10.

The Dominion Parliament has authorized the company, subject to the provisions of sections 361, 362 and 363 of the Railway Act, to enter into an agreement with the C.P.R., to lease its railway and undertaking to the C.P.R., and providing that the approval of the C.P.R. shareholders of such agreement or lease shall be sufficient, if the provisions of sec. 6, chap. 47, of the statutes of 1890 are complied with.

Grand Trunk Ry.—The Dominion Parliament has enacted that any of the various classes of stock issued or to be issued by the company shall be transferable under conditions set forth in the by-laws, notwithstanding the general provisions of the Railway Act, the company is also authorized to acquire and dispose of the capital stock, or other securities of the Montreal and Southern Counties Ry.; to guarantee G. T. Western Ry. bonds to the extent of $30,000,000; to issue additional 4% perpetual consolidated debenture stock, as required to an amount upon which the aggregate annual charge for interest shall not exceed £100,000, such stock to rank equally with existing consolidated debenture stock, and the proceeds of such stock to be utilized for the purchase of such stocks, bonds, etc., as the company may acquire under the authority of the G.T.R. act of 1910, and the present act. The several provisions of this act are only to come into effect when assented to by the shareholders at a general meeting held for that purpose.

A release of the mortgage, dated May 8, 1894, to C. Percy and Hon. D. Tisdale, as trustees, to secure an issue of bonds of $100,000, on the Parkhead and Owen Sound Branch, and a conveyance of the property to the G.T.R., have been deposited with the Secretary of State at Ottawa.

Intercolonial Ry. — The following amounts have been voted on account of collection of revenue by the Dominion Parliament, $9,500,000; $250,000, and $35,000, the latter being on account of the Windsor branch.

Manitoulin and North Shore Ry.—A mortgage and trust deed dated Mar. 1, 1911, between the M. & N.S. Ry. Co. the U. S. Mortgage and Trust Co., as trustee, and the Lake Superior Corporation, as guarantor, securing an issue of 5% first mortgage 50 year gold bonds of $3,000,000, has been deposited with the Secretary of State, at Ottawa.

Minneapolis, St Paul and Sault Ste. Marie Ry.—A circular issued by E. Pennington President, April 17, states that on April 13, 1909, the company offered for subscription to its shareholders, for the purpose of purchasing a majority of the common stock of the Wisconsin Central Ry. Co., completing its terminals at St. Paul, Minneapolis, Superior and Duluth, purchase of equipment, payment for betterments, etc., $6,048,000 of its capital stock. The expenditures necessary for the above purchase and for the construction of additional mileage having exceeded the amount provided for by the issue above referred to, at a special meeting of directors held March 13, 1911, a resolution providing for an issue of $6,562,200 of capital stock was adopted, viz: 21,874 shares of preferred and 43,748 shares of common, which is to be offered at par to shareholders at the rate of 21 shares of new stock for each 100 shares held. The subscriptions for both kinds of stock are to be at the ratio of one share of preferred to two shares of common.

Nelson and Fort Sheppard Ry.—The discharge of a mortgage given by the N. & F. S. Ry. Co., July 1, 1893, to the Minneapolis Trust Co., as security for debentures, has been deposited with the Secretary of State, at Ottawa.

Missisquoi Marble Co.—Supplementary letters patent were issue Mar. 30, increasing the capital stock from $500,000 to $1,000,000. The company owns the Phillipsburg Ry and Quarry Co., Phillipsburg, Que.

Nova Scotia Steel Co.—Following are the directors for the current year:—R. E. Harris, Hon. J. D. McGregor, Hon. R Jaffray, Hon. J. S. Pitts, T. Cantley, J. W. Allison, K. W. Blackwell, R. E. Chambers, F Ross, G. S. Campbell, J. C. McGregor, G. F. McKay, F. Stanfield, L. C. Webster, W. D. Ross. The directors were by resolution of the annual meeting held in New Glasgow, Mar. 30, authorized to increase the capital to $8,530,000 by the issue of an additional $1,500,000 of common stock.

Prince Edward Island Ry.—The Dominion Parliament has voted $450,000 on account of collection of revenue in respect of the current year's operations on this railway.

Quebec and Lake St. John Ry.—Total earnings for March, $41,832.82, against $49,598.53 for March 1910. Aggregate total earnings for three months ended Mar. 31, $118,147.60, against $119,592.54 for the same period, 1910.

Sydney and Louisburg Ry.—The Nova Scotia Legislature has made some minor amendments in the company's charter of incorporation, statutes of 1910, chap. 171. (Feb., pg 113.)

Temiscouata Ry.—There was a deficit on operation for Jan., of $841.

Temiskaming and Northern Ontario Ry.—Receipts for Feb., $115,804.41; expenditure $86,375.24; balance $29,429.17; ore royalties $7,863.98; total $37,293.15; hire of equipment $2,407.46; net result $34,885.69.

Earnings for March, $131,791, against $146,369 for March 1910.

White Pass and Yukon Ry.—Gross earnings for seven months ended Jan. 31, $803,259.

◆

The Supreme Court, at Ottawa, gave judgment, Apr. 3, in the case of the appeal of E. A. Walberg, in connection with the building of the I.C.R. shops at Moncton, N.B., for which he had the contract. Certain extra work was ordered, for which a claim of $105,000 was made and which was contested in the Exchequer Court and $53,000 found by the Registrar to be the fair value of work done. The judge of the Exchequer Court increased the award to $93,000, being the amount claimed, less damages to workmen, etc. This was appealed against and the Supreme Court has given judgment for $53,000, the appellant to pay the costs of the appeal.

Great Northern Ry. Lines in Canada.

Midland Great Northern Ry.—Arising out of a motion at the meeting of the Winnipeg city council, Mar. 21, to rescind the agreement of April, 1910, certain questions in connection with the proposed new agreement have been discussed by the Ratepayers Association. It is alleged that the proposed new agreement paves the way for the abandonment of the plan for the erection of a station facing Paulin St., and the carrying of the traffic to the union station at Fort Garry. The Ratepayers' Association, April 7, passed a resolution to the effect that no plans providing for the entrance of the company's line into the city would be satisfactory unless the Paulin St. station was erected. L. C. Gilman, Assistant to the President, G.N.R., was in the city at the time of the meeting and discussed the matter with representatives of the Association. It is said that an appeal will be made to the Board of Railway Commissioners on the subject.

A letter was received April 12, by the President of the Ratepayers Association from L. W. Hill, President, G.N. Ry., in which it was said, "After giving this queston of the erection of passenger terminals on Paulin St. the most careful study we reached the conclusion that it was not best to erect at once a passenger station in connection with our present development." It was added that "permanent freight terminals would be at once established," the question of passenger terminals being "left for future determination."

A United States press report states that work is to be started early in June upon the terminals in Winnipeg, and upon the construction of a line from Winnipeg southerly to the International boundary.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—The Board of Railway Commissioners has approved the location of the extension of this line from Otter Summit, mileage 17, to Tulameen, mileage 39, B.C.

The Board of Railway Commissioners has extended the time for the building of the branch line from near McLean's Drive to Park Lane, Vancouver.

The Board of Railway Commissioners has approved revised location plans mileage 12 to 16 from Coquihalla Summit.

A contract has been let to H. Chase & Co.; Seattle, Wash., for the filling in of the trestle to be built at the head of False Creek, Vancouver, from Park Lane to the western end of Grand View cut. Work on the trestle was started Mar. 27, and the contractor's equipment for filling in arrived a week later. Five carloads of steel for the new Park Drive bridge at Grandview cut have been delivered. The filling in will be done by earth taken from the Grandview and Park Drive cut, which will be lowered about 15 ft. at the deepest part of the cut, reducing the grade through there to about 1%. It is estimated that about 1,000,000 cubic yards will be secured from the Grandview cut when the permanent slope has been made on the cut there.

A contract is reported let to Chase and Co., Seattle, Wash., for the building of an oil car trestle for the supply of oil to the oil burning locomotives on the division, pending the building of a permanent oil tank. (April, pg. 347.)

Victoria and Sidney Ry.—It is expected that the new buildings, which include a passenger station and freight shed, will be completed and ready for occupation early in May. April, pg. 347.)

◆

The G.T.R. shops at Stratford, commenced working a 55 hour week, Apr. 1, instead of a 50 hour week, which has been the rule since last fall.

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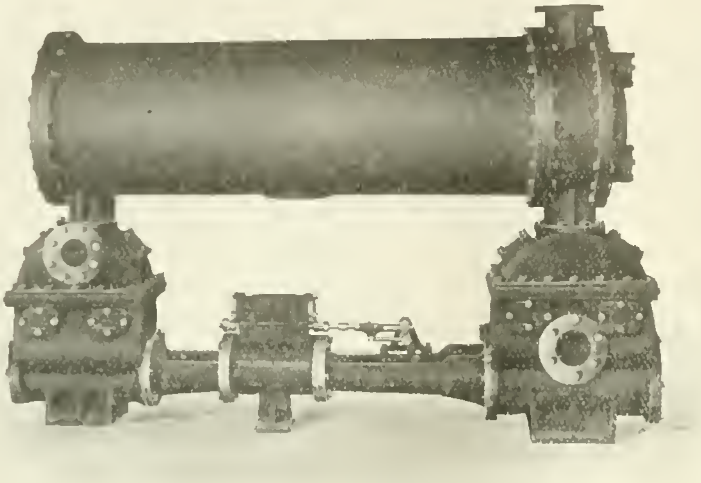

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—OFFICE AND WORK—

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Canadian Northern Ry. Construction, Etc

Canadian Northern Quebec Ry.—The Dominion Parliament has authorized the construction of a line from Rawdon to a junction with the National Transcontinental Ry., with a branch from near Rawdon to Joliette; and a line from St. Jerome to St. Eustache, Que.

The Quebec city council is being asked to pass a resolution asking the Provincial Government not to grant any further subsidies to the C.N.Q. Ry. lines without insisting upon the company carrying out its alleged obligations with the city to construct workshops within its limits in return for a subsidy of $200,000. It is claimed that the contract was entered into with the old Great Northern Ry., and the subsidy paid over, but that the shops were not built. The C.N.Q. Ry., is the successor of the G.N. Ry.

The Board of Railway Commissioners has ordered the company to fence its line from Hochelaga to the limits of Montreal, to erect gates at certain crossings; and to provide gatekeepers at others. The Montreal city engineer has reported in favor of the company's proposal to close Robillard St., from Marlborough to Moreau streets, for the purpose of laying additional tracks, but against the closing of Stadacona St., from Moreau St., for 600 ft. westwards.

The company is remodelling the buildin Montreal, at 226, 228 and 230 St. James St., corner of Dolland Lane, which it purchased recently. When the alterations are completed the rail and steamship ticket, express and other offices will be located on the ground floor, while the upper floors will be utilized for offices.

Canadian Northern Ontario Ry.—The Dominion Parliament has granted an extention of time for the construction of the various lines authorized to be built by par. c, sub-pars. i to x, of sec. 5, and by pars b, and e of sec. 2, chap. 63, of the statutes of 1909; and a line from Berlin through Guelph, Acton and Brampton to Toronto.

The Board of Railway Commissioners has approved of the revised location plans for the line near Billings Bridge, mileage 2.3 to 3.02, from Ottawa on the Toronto-Ottawa line; and has heard an application for the approval of the locations plans for the route at Smiths Falls, mileage 37.8 to 40.8 from Ottawa. Some opposition was made to these plans on the part of residents of Smiths Falls, and the Commissioners reserved judgment. The company's right of way agent stated at Smiths Falls, April 5, that all the right of way between Ottawa and Smiths Falls had been secured and also most of the land required for the line between Smiths Falls and Sydenham. It is expected that a contract will shortly be let for the construction of the line from Ottawa to Sydenham, and that work will be commenced on it during the summer.

Between Toronto and Sydenham, work is well advanced and it is expected to have a train service in operation early in the fall. Track has been laid on 95 miles, and some short stretches have to be completed to connect up with the Central Ontario Ry. at Trenton, and the Bay of Quinte Ry., the tracks of which will be used to Sydenham. Further on towards Ottawa, the Brockville, Westport and Northwestern Ry. will be joined up, and a portion of its mileage used. The Dominion Parliament has authorized these two companies to enter into agreements with the Canadian Northern Ontario Ry., and the Ontario and Ottawa Ry., or either of them.

The Board of Railway Commissioners has approved revised location at Smiths Falls, mileage 37.8 to 40.8 from Ottawa; the building of a subway at Kingston Road, Hamilton tp., Ont.; the diversion of certain public roads in Loughborough tp., Ont., and the crossing of the Brockville, Westport and North Western Ry. at Brockville Jct., mileage 189.34 from Toronto.

A map of a proposed entrance into Hamilton, Ont., filed with the city council there, Mar. 30, shows a route from Bronte, to the eastern boundary of Wentworth county, south of and parallel with the G.T.R., to the centre of the city, then crossing to the north of the G.T.R. and paralleling it out of the city. The city council authorized its engineer to protest to the Board of Railway Commissioners if the plans filed interfered with Dundurn Park, or necessitated any level crossings. The city council will take the plans into consideration May 15.

In connection with the proposed line from Ottawa to Port Arthur, a press dispatch from the latter city Mar. 30, stated that the city council had been informed that construction would be started there as soon as weather permitted, while a later dispatch stated that Foley, Welch and Stewart have been given a contract for a section of the line easterly. The Board of Railway Commissioners has approved of location plans for the line in McTavish and Sibley tps., Thunder Bay districts, mileage 524.96 to 548.45.

Canadian Northern Ry.—The Manitoba Legislature has provided for the guaranteeing of the company's 4% bonds up to $13,000 a mile, in respect of the construction of the following additional lines of railway:— From the termination of the line mentioned in par. 3, chap. 53, of the statutes of 1910, northerly and north westerly for 50 miles; from Deloraine, to the western boundary of the province, about 60 miles; and from Ste. Rose du Lac northerly to near Winnipegosis, about 50 miles.

Press reports state that the new station at Fort Garry, Winnipeg, which is to be used jointly with the C.N.R., by the National Transcontinental Ry., and the G.T. Pacific Ry., will be ready for opening in July. The subway under the tracks at Pembina St., Winnipeg, is expected to be completed by May 31. Work is progressing and is expected to be completed early in May, on a bridge across the Assiniboine River, east of the Main St. bridge. The bridge is provided with a bascule lift span, so as to permit of the ordinary navigation of the river.

Plans have been received at Dauphin, Man., for the erection of a new station building. They show a two story structure, 170 ft. by 30 ft., to be built of brick on a stone basement. On the ground floor will be waiting rooms, ticket office, baggage and express rooms, while upstairs will be offices for the train dispatchers and the general office staff.

The Board of Railway Commissioners has issued an order authorizing the opening for traffic of the portion of its branch line between Luxton and Bienfait, Sask.

Plans were submitted to the Moose Jaw city council, Apr. 12, showing the route of the proposed entrance into the city.

The Saskatchewan Legislature by chap. 3, of the statutes of 1908-9 voted aid by guarantee of bonds for $13,000 a mile in respect of 410 miles of branch lines; and by chap. 4, of the statutes of 1911, similar aid was voted in respect of 575 miles of branch lines, a total of 987 miles. The report of the Provincial Department of Railways for the year ended Feb. 1910, shows that work has been done on eight of the 15 lines, 355.13 miles of grading having been completed and 138.13 miles of track laid. Following is a list of the branch lines subsidized, their total mileage, miles graded, and miles of track laid:—

	Total mileage.	Miles graded.	Miles track laid.
Craven to Adams Ferry....	40	.....	.....
Goose Lake line	120	70.00	50.00
Bienfait branch	25	16.40	16.40
Maryfield branch	135	123.60	43.60
Dalmeny branch	40	28.13	28.13
Battleford-Jackfish branch .	50	40.00	.....
Thunderhill branch	25	10.00	10.00
Kaiser-Swift Current branch.	135	.....	.....
Humboldt-Melfort branch ..	60	.....	.....
Delisle branch	35	.....	.....
Maryfield-Hartney branch ..	65	.....	.....
Moose Jaw South East branch	100	.....	.....
Maryfield line extension ...	75	.....	.....
Crooked Lake branch	60	40.00	.....
Rossburn extension	20	.....	.....
Prince Albert-Battleford branch	..	27.00	.....
Total	985	355.13	138.13

Our track laid returns for 1910 show that 250.84 miles of track were laid in Saskatchewan during the year, on six of these lines, so that it would appear that track has been laid on about one-half of the mileage aided by the Government.

The C.N.R. is building a line from the east with the intention of reaching Lethbridge. This is an extension of its Maryfield branch, and local reports state that it will ultimately be extended into the Flathead Valley, B.C., where those interested in the company own large areas of coal lands. The route, so far as surveyed, is stated to have been run in a nearly straight line to a point southeast of Lethbridge, crossing the Alberta Ry. and Irrigation Co.'s line, entering the town, and then proceeding westerly to the Flathead Valley. This is a local report, and, as the plans are not definitely settled, may be considerably altered before it is finally arranged to start construction.

In connection with the branch from Vegreville to Calgary, construction is being proceeded with between the Bow and the Belly rivers, and it is expected that the branch line will be completed this season. Local reports state that it has been decided not to build the line across the Elbow River at present, but to erect a station on the south side of the river, probably near the crossing of Second St. A branch from this line is under construction from Stettler into the Brazeau River country. About 70 miles of grading has been completed, and the steel laying gang started work in Stettler April 11.

A number of contractors have been going over the different lines on which work is to be done during the year, and arranging for starting operations. The construction work in Saskatchewan and Alberta, it is said is being divided between the Cowan Construction Co., and the Northern Construction Co., and the smaller contractors have been looking over the work in company with representatives of these companies.

We were officially advised Apr. 20, that the Cowan Construction Co. has been given a contract for 100 miles on the main transcontinental line, from the Pembina River westerly towards the Yellowhead Pass. The Northern Construction Co. has been given a contract for about 100 miles on the Brazeau extension, which runs westerly from the Vegreville-Calgary line, near Stettler, Alta. The Northern Construction Co. also has the contract for the completion of the Vegreville-Calgary line from the Red Deer River to Calgary.

Canadian Northern Branch Lines Co. The Dominion Parliament has incorporated a company with this title to build branch lines for the C.N.R. The location of the lines authorized is given on pg. 1031 of our issue of Dec. 1910.

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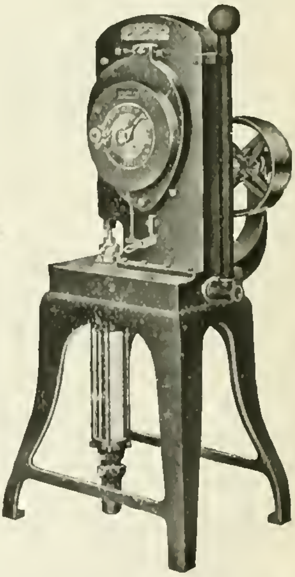
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which include every device for facilitating the storage and handling of oils. It will pump and measure—in one operation—any desired quantity. It can be set for any desired quantity up to 1,100 gallons, and when that amount has been pumped it automatically stops. Ask for the new Railroad Book just issued. It explains all about them. No. 91.

S. F. Bowser & Co., Ltd., Toronto, Ont.
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Canadian Northern Pacific Ry.—It is expected to have the grading on the section of the line from Port Mann to Matsqui, B.C., completed by May 1, and the grading from Matsqui to Hope, by Sept. 1. Track laying is expected to be started at Port Mann early in May. Tenders will be received to May 12 for the construction of the line from Hope to Kamloops, 163 miles, in four sections as follows:—Hope to Boston Bar, 40 miles; Boston Bar to Lytton, 28 miles; Lytton to Ashcroft, 44 miles; Ashcroft to Kamloops, 51 miles. The work is to be completed within two years.

Duluth, Winnipeg and Pacific Ry.—The contractors for the tunnel at Duluth, Minn., on this line are the Wick, O'Connor Co., and they expect to get it finished in May. The tunnel is 155 ft. long, and is on a 7 degree curve. (April, pg. 345.)

◆

C. P. R. Dividend Announcement.

Sir Thomas G. Shaughnessy, President, issued the following circular to shareholders recently:—

Pursuant to the intimation given at the last annual meeting, your directors have considered and formulated a plan by which the shareholders may in the future receive greater advantage from the extraneous assets of the company than they have in the past.

Amongst the securities held by the company there are bonds and stock to the face value of about $46,000,000 on which the company receives, or is entitled to receive, direct payments of interest or dividends, and there is the amount represented by the land mortgages and cash proceeds of land sales $50,000,000; then there are other lands to the value, on a conservative basis, of $6,500,000, of which the company became the owners in whole or in part in connection with the acquisition of branch railway lines. Besides these there are, of course, your unsold lands in the agricultural belt approximating 7,300,000 acres.

It has always been the practice to separate in the annual accounts the revenue from land and townsite sales from the other income of the company, and it is now proposed to adopt the same policy with reference to interest on investments, dividends, rentals and like sources of income other than the receipts from the railway and steamship lines, incorporating the income from these items in one fund which, of course, will vary in amount from year to year, and from which the directors will make such a periodical distribution, as in their opinion may be warranted by circumstances, in addition to the regular dividend that may from time to time be declared on the ordinary shares.

It is estimated that the interest and dividend return from these sources will be about $4,500,000 during the current year; so that even now it will only be necessary to supplement this amount by a comparatively small contribution from the land funds to represent 3% on the outstanding common shares, and, therefore, it was decided to make a distribution on that basis, commencing with the quarter ended Dec. 31, 1910.

Your directors have every reason to hope and believe that the regular dividend of 7% per annum from the net revenue of the railway and steamship lines can be maintained, so that with a payment of 3% from other income, you will be receiving a return of 10% per annum on your common stock without encroaching to any appreciable extent on the vast assets, now at your disposal, that will increase in amount as population increases and as your lands are sold, and that will remain available for the fortification of your property in any exigency that may arise.

G.T.R. Betterments, Construction, Etc.

Vermont-Rhode Island Plans.—Tenders have been asked for the construction of the first section of the proposed Southern New England Ry., and the developments on the other portions of the Central Vermont Ry., connected with it. This section will be 25 miles long, and will extend from the C.V.R. tracks at Windsor, to the Rutland Rd. yards at Bellows Falls, Vt. A second section for which tenders will be asked later on, will start from the Rutland Rd. yards at Bellows Falls, extend to Dummerston, Vt., and will enter Brattleboro, Vt., over the lines of the West River Rd., a subsidiary of the C.V. Ry.

The Southern New England Rd., is asking the Rhode Island Legislature for authority to cross New York, New Haven and Hartford Rd. tracks at grade in Providence, with a view of reaching a site for a terminal dock on the west shore of Narragansett Bay. The Providence city council approves of the crossing, and suggests that the Legislature permit the use of the N.Y., N.H. and H. Rd. tracks in the city as well. It is reported that the company has secured 2,300 ft. of water frontage at Field's Point, adjoining a large area which the State Government proposes to acquire. The U.S. Government is spending a large sum in dredging the river so as to permit of the entrance of the largest ocean going steamers.

Lachine, Jacques Cartier and Maisonneuve Ry.—The Dominion Parliament has declared the company's line to be a work for the general advantage of Canada; extended the time fixed for construction; continued an agreement made in 1910 with the city of Montreal, and authorized the company to enter into agreements with other railway companies.

Montreal Track Elevation. — The G.T.R. plans for the elevation of its tracks in Montreal have been completed, and have been sent to the Board of Railway Commissioners for consideration. The proposal is to elevate the tracks from Bonaventure station to St. Henri, thus doing away with all level crossings.

That the company has purchased St. Joseph's church on Richmond St., in connection with the track elevation plans and the proposals to rebuild the Bonaventure St. station, is denied by G.T.R. officials. The company, in view of the difficulties in the way of obtaining the land necessary, has, officials state, decided to modify its plans by removing everything possible to the Turcot yards, and retaining at Bonaventure only such buildings, etc., as are absolutely necessary.

Ottawa Improvements.—The Board of Railway Commissioners has rescinded the order passed Mar. 7, approving plans for train shed, etc., at the central union station.

Referring to the report as to the tunnel at the Rideau Canal, W. Wainwright, Second Vice President, is quoted as having stated April 5, that he was not in a position to discuss the matter officially on behalf of the company, but personally, it did not appeal to him. In addition to having to remove its Parry Sound line, and placing it in the tunnel, the carrying out of the proposal would do away with the company's freight yards. General Superintendent Donaldson, is quoted as saying April 5, that the projeet did not meet with the approval of the G.T.R. That company had an alternative proposal, which would be laid before the authorities.

Barry's Bay to Bancroft.—Local press reports state that G.T.R. engineers have been working in the vicinity of Barry's Bay and Bancroft, Ont., for some time, endeavoring to secure a location for a route for a branch from its Canada Atlantic Ry., into the district. Such a line would run through the Bessemer Iron range.

Hamilton Station.—The Hamilton, Ont., Board of Trade has been informed by the General Passenger Agent, that the company has under consideration a proposal to build a new station in that city.

London, Huron and Bruce Ry.—A new siding half a mile long is being built at Clinton, Ont., to facilitate the working of trains off this line, in making connections with the Buffalo-Goderich line. It is proposed to reballast the entire line during the year. (April, pg. 335.)

◆

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers to distinctly understand that we are not paid for the publication of any of this matter and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Burton W. Mudge & Co., 124 South Michigan Boulevard, Chicago, have issued an illustrated circular respecting the Adams motor car for railway service.

Curtis's & Harvey (Canada), Limited, has been incorporated under the Dominion Companies Act with a capital stock of $250,000, and head office at Montreal, to manufacture explosives, etc., and with other powers.

The Cleveland branch of the American Chemical Society at its March meeting was addressed by W. R. Hulbert, manager of sales, Goldschmidt Thermit Co., on the Thermit welding processes. In addition to a general description of the process and its various applications, with lantern slides, he gave a demonstration of Thermit welding, comprising a number of experiments to show how the process is used commercially for repairing wrought iron and steel sections, and for welding pipes up to 4 ins. in diameter.

A booklet treating of the adzing and boring of railway ties and of driving screw spikes by power or hand which has been issued by Greenlee Bros. & Co., Rockford, Ill., is of special interest to construction and maintenance of way officials. It deals with machining ties and illustrates and describes their automatic tie adzing and boring machine, its installation and operation, also their motor spike driving car, locomotive track work car, light service screw spiking car, ratchet and tee handle spike wrenches, hand machines for tie boring and tie boring tools.

Greenlee Bros & Co., Rockford, Ill., have issued a new edition of their sectional catalogue of railway car shop and special woodworking machinery which is one of the finest specimens of commercial printing that has ever come into our office. The full line of machines, which are beautifully illustrated and fully described, include mortisers, borers, rip saw benches, cut-off saws, tenoners, gainers, and vertical saws, jointers, variety woodworkers, sash and door machines, stockers and outside moulders, cutter heads and specialties, chisels, bits, augers and other tools. Their machinery sales office is in the Railway Exchange Building Chicago, Ill.

◆

The Michigan Central Rd. shops at St. Thomas, Ont., have been placed on full time, having been working short time since December, 1910.

M. E. Bywell, formerly accountant and cashier at the C.P.R. Empress Hotel, Victoria, B.C., was arrested at New Orleans, recently, on a charge of embezzling $3,500 from the hotel.

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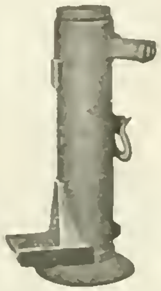

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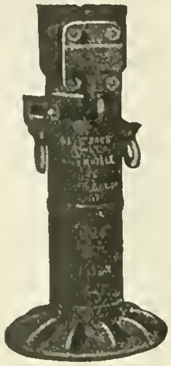

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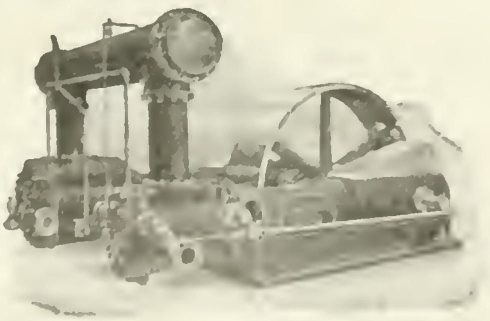

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Advertising Copy must reach the publishers by the 10th of the month preceding the date of publication, if proof is required, or by the 15th if proof is not required.

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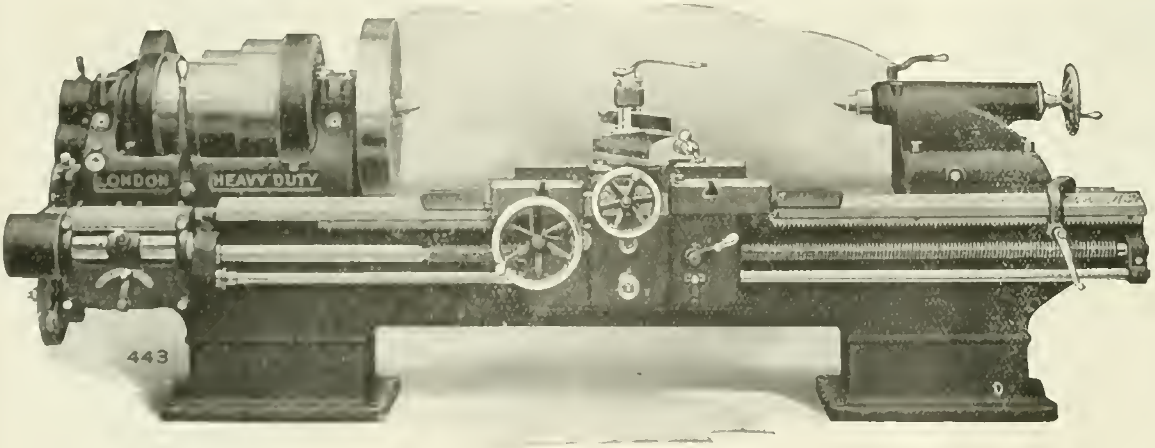

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The Quebec Bridge Contract.

The Minister of Railways announced in the House of Commons, April 5, that the contract for the erection of the superstructure of the bridge over the St. Lawrence River near Quebec had been signed. He said that the straightening out of the difficulties surrounding this undertaking had been a work fraught with much anxiety and not a little industry. The undertaking was such a vast one that the engineers on the board realized that every step should be made only after the fullest investigation. Differences of opinion arose between these able men which were altogether of a technical nature, and could only be understood by men with a theoretical knowledge and practical experience in bridge building. The original intention, and in fact the scheme contemplated until very recently, provided for roadways, and street railway traffic, as well as steam railway tracks. The majority of the Board, after full consideration, recommended the acceptance of the St. Lawrence Bridge Co.'s tender, upon a design of its own, which included provision for street railways and driveways. In doing so, it called attention to the fact that another design had been submitted by the company for a purely railway bridge. By the adoption of the latter proposition, it was pointed out that a very material saving could be made. The Government fully considered this suggestion and, as a result, the contract has been signed with the St. Lawrence Bridge Co., for a railway bridge which will also have two 4 ft. sidewalks. The cost of this will be at the estimated quantities, $8,650,000. There has been deposited with the Government as security for the carrying out of this project, $1,297,500 or 15% of the contract price. The stockholders in the Dominion Bridge Co., and of the Canadian Bridge Co., organized the St. Lawrence Bridge Co., but in addition to the last named company signing the contract, the two parent companies have guaranteed the carrying out of the work. Considering the very many difficulties that had surrounded this entire project, he was of opinion that the very best possible contract had been made, and fully believed that these purely Canadian companies were competent to accomplish the task they had undertaken, and that the result would be a credit, not only to Canada, but to the ability of the men at the head of these great industries. The province of Quebec contributed $250,000 and the city of Quebec $300,000 to the original bridge scheme, and it was but fair that these amounts should be returned.

The contract was signed by the Minister of Railways and Canals, representing the Government; Phelps Johnson, President of the St. Lawrence Bridge Co. and J. F. Weber, secretary, while Mr. Johnson again signed as Vice President

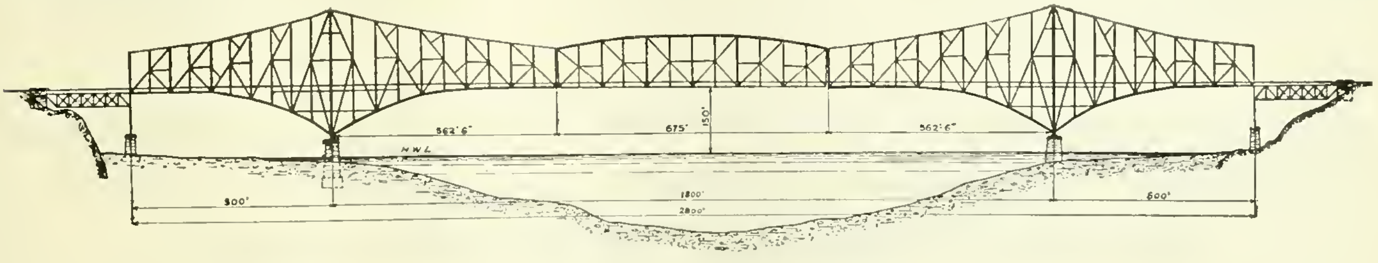
562'6"
675'
150'
562'6"
H.W.L.
500'
1800'
2800'
600'

Fig. 1. The Quebec Bridge, which collapsed before completion, Aug. 29, 1907.

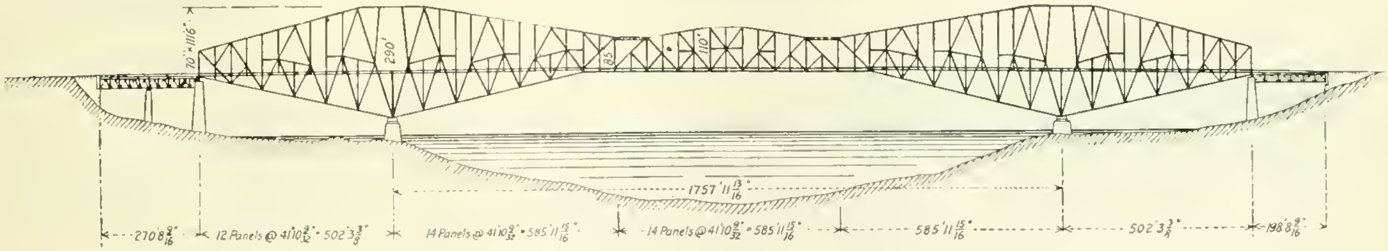
70'-1116"
290'
85
110'
1757'11 13/16"
270'8 9/16"
12 Panels @ 41'10 9/32" = 502'3 3/8"
14 Panels @ 41'10 9/32" = 585'11 15/16"
14 Panels @ 41'10 9/32" = 585'11 15/16"
585'11 15/16"
502'3 3/8"
198'8 9/16"

Fig. 2. Official design V, by Board of Engineers, for new bridge.

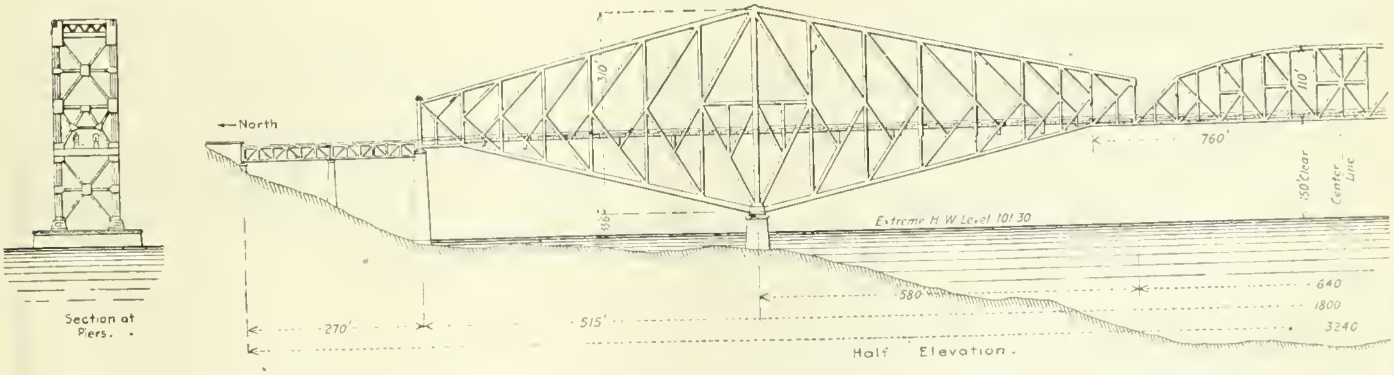
Section at Piers.
North
310'
110'
760'
150' Clear
Center Line
Extreme H W Level 101.30
580'
640
1800
3240
270'
515'
Half Elevation.

Fig. 3. Accepted design of St. Lawrence Bridge Co., for new bridge.

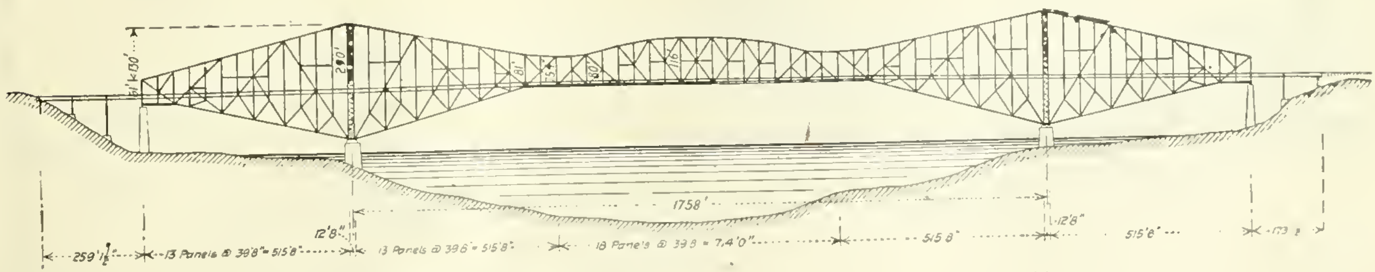
61'-130'
290'
1758'
12'8"
12'8"
259'1½"
13 Panels @ 39'8" = 515'8"
13 Panels @ 39'8" = 515'8"
18 Panels @ 39'8" = 714'0"
515'8"
515'8"
173'

Fig. 4. Unaccepted design M-N of St. Lawrence Bridge Co., for new bridge.

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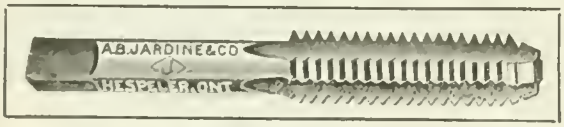

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of the Dominion Bridge Co., with M. Davy as secretary. The Canadian Bridge Co., of Walkerville, was represented on the signed document by F. C. McMath, President, and Mr. Miller, secretary. Press reports state that the contractors will at once expend $1,000,000 upon a new plant for the purpose of carrying out the contract, and that orders have been placed in the United States for the manufacture of the steel for the bridge.

The St. Lawrence Bridge Co.'s board is as follows:—President, P. Johnson; Vice President, F. C. McMath; Secretary, J. F. Weber; other directors, C. Cassils, F. L. Wanklyn, G. H. Duggan, W. Pope, and B. S. Colburn.

Certain additions were made to the contract at the instance of the Department of Labor, the Minister of Labor stated April 6, providing for the payment of current rates of wages on the work, and for the inspection by the Min- as steam railway tracks could have been successfully constructed and erected, ister of Labor at his discretion of the rates paid.

In the House of Commons, April 11, the Minister of Railways said the engineers, while expressing the view that a bridge on the design including roadways and electric railway tracks as well were of the opinion that serious difficulties could be obviated if the design on which the contract has been let were adopted. Add to this the great difference in cost, and he thought it would appear evident that the wiser course was pursued. The engineers brought to the attention of the government the fact that over several large bridges electric lines use the same tracks as the steam railways, and they expressed the belief that this could be done on the Quebec bridge. The following are comparative figures:—

With roadways, etc.—	
Weight of metal, not including weight of material used in making of roadways	132,200,000 lbs.
For railway bridge only	95,900,000 lbs.
Difference in weight	36,300,000 lbs.

Cost as per estimated quantities—	
With roadways, etc.	$11,171,100 00
With road material	75,000 00
Rails for tramways	5,000 00
Approaches for roadway	200,000 00
Total	$11,451,100 00
Cost of design adopted for railway only, on estimated weight	8,650,000 00
Difference in cost	2,801,100 00
The Government has suggested that $550,000 contributed by the Province of Quebec and the city of Quebec for roadway purposes on this bridge, can be handed back to them and still there will be a saving of	550,000 00
	$ 2,251,100 00

The Dominion Parliament has voted $333,333.34 on account of construction of the bridge.

The Minister of Railways stated in reply to a question in the House of Commons, Mar. 29, that the Department had no record of any investigation being held as to the advisability of construct-

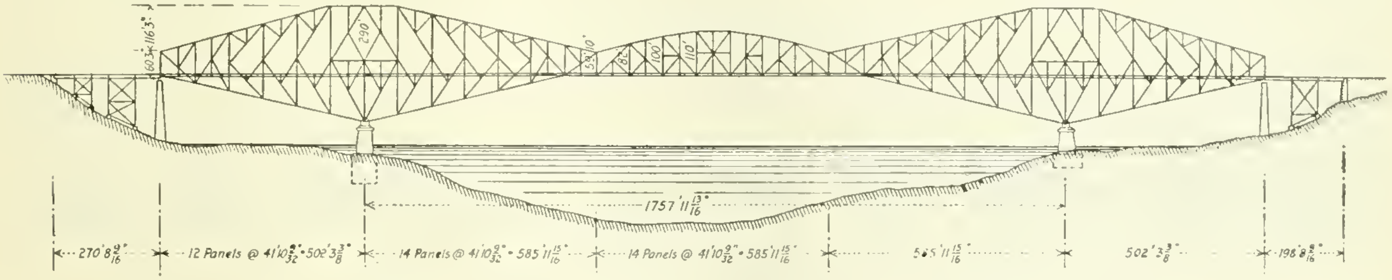

60'3"·116'3"
290'
59'10"
82'
100'
110'
1757'11 13/16"
270'8 9/16"
12 Panels @ 41'10 9/32" = 502'3 3/8"
14 Panels @ 41'10 9/32" = 585'11 15/16"
14 Panels @ 41'10 9/32" = 585'11 15/16"
585'11 15/16"
502'3 3/8"
198'8 9/16"

Fig. 5. Unaccepted design A-B-X, of St. Lawrence Bridge Co., for Quebec bridge.

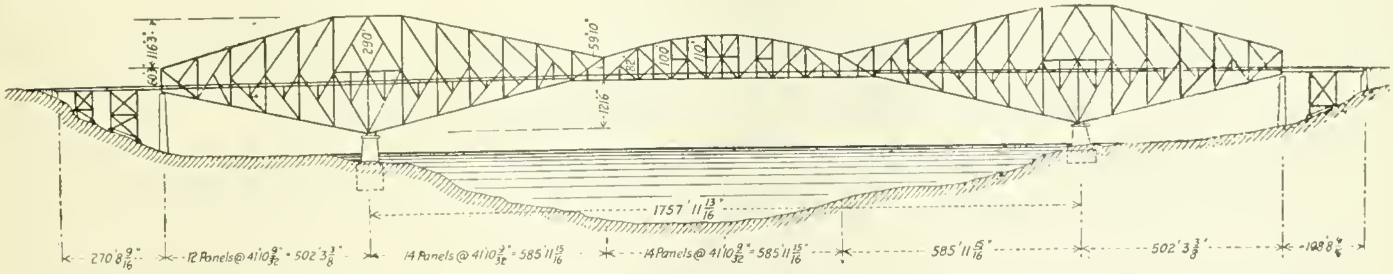

60'·116'3"
290'
59'10"
82'
100'
110'
121'6"
1757'11 13/16"
270'8 9/16"
12 Panels @ 41'10 9/32" = 502'3 3/8"
14 Panels @ 41'10 9/32" = 585'11 15/16"
14 Panels @ 41'10 9/32" = 585'11 15/16"
585'11 15/16"
502'3 3/8"
198'8 9/16"

Fig. 6. Unaccepted design C-Y of St. Lawrence Bridge Co. for Quebec bridge.

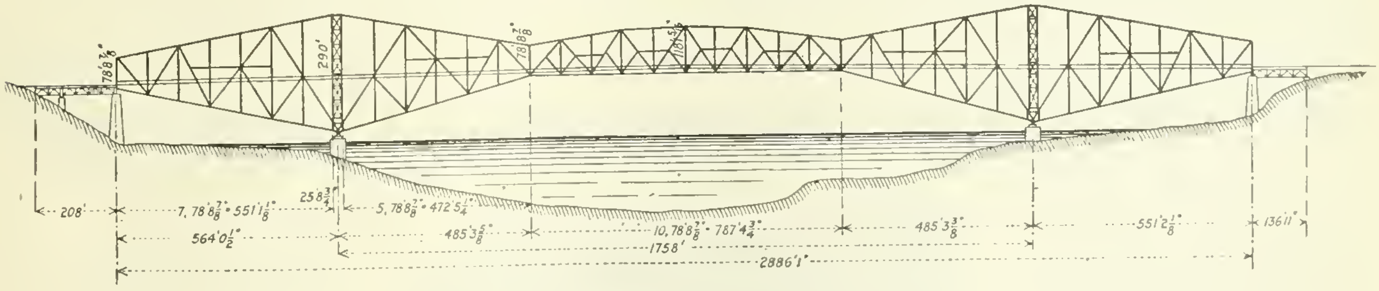

78'8 7/8"
290'
78'8 7/8"
208'
7, 78'8 7/8" = 551'1/8"
25'8 3/4"
5, 78'8 7/8" = 472'5 1/4"
564'0 1/2"
485'3 3/8"
10, 78'8 7/8" = 787'4 3/4"
485'3 3/8"
551'2 1/8"
136'11"
1758'
2886'1"

Fig. 7. Unaccepted design of Maschinenfabrik Augsburg-Nuerenburg, for Quebec bridge.

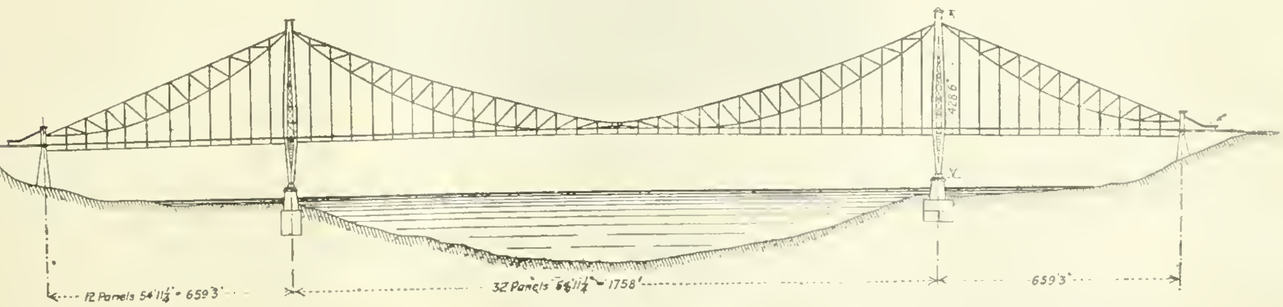
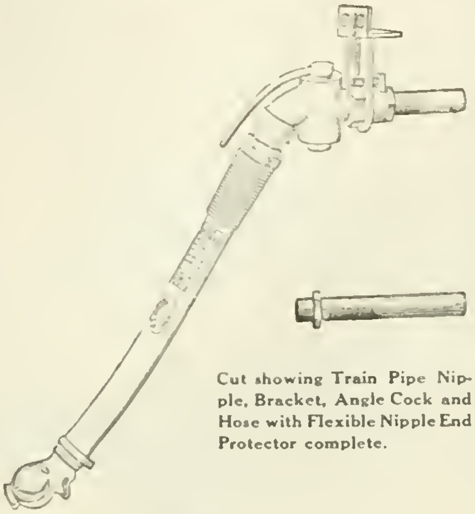

428'9"
12 Panels 54'11 1/4" = 659'3"
32 Panels 54'11 1/4" = 1758'
659'3"

Fig. 8. Unaccepted suspension design (Lindenthal) of Pennsylvania Steel Co., for Quebec bridge.



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ing a tunnel under the St. Lawrence River at Quebec, in lieu of a bridge.

On pages 435 and 437 are a number of plans. Fig. 1 shows the bridge in course of construction, which collapsed Aug. 29, 1907. Fig. 2 shows the Board of Engineers' official design, on which tenders for the new bridge were invited This was for a cantilever bridge with anchor arms and cantilever arms of the same length, the suspended span to be erected by cantilevering out. Five modifications of this design were also prepared by the Board, a tender on any of the six propositions being considered a tender on the Board's design. Two of these schemes were based on erecting the suspended span by cantilevering out, while the remaining four were based on erecting the suspended span at an adjacent site and floating it into position.

Fig. 3 shows the St. Lawrence Bridge Co.'s accepted design. The bridge will have the K web-system in the cantilever and anchor arms. the suspended span being a modified Pratt. All members in the anchor arm and those immediately over the main pier, as well as the floor system, are carbon steel, the cantilever arms and suspended span being of nickel-steel. The top chords are composed of built-up riveted members extending over one full truss panel or two floor panels. This design differs from those shown in figs. 2, 4, 5, 6, 7 and 8, by having an 1,800-ft. channel span, as in the old bridge. It is also different in making no provision for highway traffic. The suspended span is 640 ft. long, 110 ft. deep at the centre. and 70 ft. deep at each end. The cantilever arms are 580 ft. long. 70 ft. deep at the end, and 310 ft. high over the main post. The anchor arms are 515 ft. long, as at present designed. The trusses are 88 ft. apart. and there is a clear headroom of 150 ft. above extreme high water. The train load allowed for on each track will be equivalent to two E-60 engines. followed by a train load of 5,000 lbs. per lineal foot of track. The increase in length of span was brought about by a rearrangement in the manner of sinking the caissons. thus allowing the centre line of the new bridge to remain coincident with that of the old bridge. The old main piers will not be used. but will be taken down to low water level. the stone being re-used in the new piers.

In addition to the design which has been accepted. the St. Lawrence Bridge Co. tendered on each of the Board's designs, and on six other designs of its own. In general elevation and outline the designs submitted by the company conform to that of the Board's design. Two of these designs are of the single-intersection Warren type (fig. 4), the remaining five being variations of the single-intersection K web-system type (figs. 5 and 6). The variations in the different tenders were due mainly to variations in the details of the members, as well as the proportion of nickel-steel and carbon steel used in the construction. The accepted design was that approved by the majority of the Board, as well as by the additional experts appointed by the Government. In the opinion of the engineers this design contained several features, particularly in respect to erection. that rendered it preferable to the designs prepared by the Board.

The British Empire Bridge Co. submitted six tenders on the Board's design only. It proposed two schemes of erection in connection with the floating in of the suspended span; one floating the span in on high falsework, the other by floating in a light temporary span to be used as staging upon which the suspended span is erected.

The Pennsylvania Steel Co. submitted 10 tenders on the Board's design and one tender on an eyebar suspension span designed by Gustav Lindenthal (fig. 8). This company submitted prices on two schemes of erection of the suspended span. In one scheme the suspended span is floated in on high falsework, while in the other the entire span is lifted directly from the pontoons by a special lifting device.

Maschinenfabrik Augsburg-Nuerenburg A. G., tendered on three of the Board's designs. It also submitted a tender on a design of its own (fig. 7). The principal features of this design are the large panels, the small number of members in the web system and the length of the suspended span. The material proposed was a chrome-nickel-steel. Built-up riveted members were to be used for tension members throughout.

Canadian Northern Ry. Earnings. Etc.

Gross earnings, working expenses and net profits from July 1,. 1910. with increases over, or decreases from, those of 1909.10 :

	Earnings.	Expenses.	Net. Earnings	Net Increase.
July	$1,225,100	$876,900	$348,200	118,600
Aug.	1,093,000	830,000	263,000	58,600
Sept.	1,279,000	898,700	381,200	69,700
Oct	1,627,800	1,047,300	580,500	99,800
Nov.	1,565,400	1,006,500	558,900	11,500
Dec.	1,255,400	896,200	359,200	24,800
Jan.	822,600	720,900	101,700	20,800
Feb.	803,100	667,300	135,800	4,300
	$9,672,300	$6,943,800	$2.728,500	$366,500
Inc.	$1,391,800	$1,025,300	$366,500...	....

Approximate gross earnings for Mar. $1.627,000. and for two weeks ended April 14, $634,800, against $734,100, and $503,100, for same periods 1910.

C.P.R. Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases over 1909-10. from July 1, 1910 :

	Earnings.	Expenses.	Net Profits.	Net Increase or Decrease
July	$8,869,214.82	5.384.594.73	3.484.619.50.	1,004,748.86+
Aug.	9,255,831.67	5,563,659.34	3,691,672.33	727,614.46+
Sept.	9,315,213.67	5,403,614.03	3,911,599.64	479,710.47+
Oct.	10,229,370.77	5,724,210.25	4,505,160 52	118,863.33+
Nov.	9,413,238.22	5,676,115.96	3,787,122.26	44,784,31+
Dec.	8,705,283.99	5,418,750.10	3,286,583.87	171,110.79−
Jan.	5,740,206.34	5,084,088.47	656,117.87	660,478.52−
Feb.	6,375,576.57	5,230,869.06	1,144,707.51	342,311.73−
	$67,903.435 55	$43,485,901.94	$24,417,533.61	$1,544,041.97+
Inc.	$5,881,445.09	$4,337,403.12	$1,541,041.97	... .

Approximate gross earnings for Mar. $8,648,000. and for two weeks ended April 14, $4,035,000 against $7,667,000 and $3,776,000 for same period 1910.

Duluth, South Shore and Atlantic Ry.—Operating revenue for Feb., $190,805.29; expenses, $174,341.03; net revenue. $16,464.26. against $213.702.93 operating revenue; $158,921.33 expenses; $54,781.60 net revenue for Feb., 1910. Aggregate operating revenue for eight months ended Feb. 28. $2 126,261.74; expenses, $1.484 411.95; net revenue, $641 849.79. against $2.144.772.38 aggregate operating revenue; $1.473,882.20 expenses; $670,890.18 net revenue for same period 1909-10. Approximate earnings for Mar., $230.162. and for two weeks ended Apr. 14. $106.947. against $279.102 and $124.540 for same periods 1910.

Mineral Range Rd.—Operating revenue for Feb., $57.730.72; expenses, $58,019.62; deficit, $288.90. against $63.208.13 operating revenue; $60.874.36 expenses; $2.333.77 net revenue for Feb., 1910. Aggregate operating revenue for eight months ended Feb. 28, $500,386.88; expenses, $491.766.12; net revenue, $8 620.76. against $571.670.35 aggregate operating revenue; $489.294.32 expenses; $82,376.03 net revenue for same periods 1909-10. Approximate earnings for Mar., $65.960, and for two weeks ended Apr 14 $27.293. against $69,870 and $27.155 for same periods 1910.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—Operating revenue for Feb $895,326 46; expenses and taxes, $756 417 47; operating income $138,908.99, against $843 090.22 operating revenue; $654,679 38 expenses and taxes; $188,410.84 operating income for Feb., 1910 Aggregate operating revenue for eight months ended Feb. 28. $8,956,243.50; expenses and taxes. $6,053.412.46; operating income $2,902,831.04. against $10.648.617.24 aggregate operating revenue; $5.909.674.87 expenses and taxes; $4 738 942.37 operating income for same period 1909-10. Approximate earnings for March, $1.645.005. and for two weeks ended Apr. 14. $788,951. against $1,880,360 and $874.651 for same periods 1910.

Chicago Division. Operating revenue for Feb., $648,023.72; expenses and taxes, $544.555.84; operating income, $103,467.88, against $652,753.80 operating revenue; $472,371.36 expenses and taxes; $180,382.44 operating income for Feb., 1910. Aggregate operating revenue for eight months ended Feb. 28, $6,852,091 85; expenses and taxes, $4.677,171.05; operating income, $1,371,920.80, against $5,653,263.08 aggregate operating revenue; $3,999,685.86 expenses and taxes; $1,653,577.22 operating income for same period 1909 10.

Grand Trunk Ry. Earnings, Expenses, Etc.

The following figures show the earnings of the G.T.R., C.A.R., G.T. Western Ry. and D G.H. and M Ry. separately, for Feb., as compared with Feb., 1910:—

Grand Trunk Railway.

	1911.	1910.
Earnings	$2.326.800	$2.248.000
Expenses	1.995.700	1,866.000
Net earnings	$ 331 100	$ 382,000

Canada Atlantic Railway.

	1911.	1910.
Earnings	$ 121.000	$ 116.000
Expenses	133 9 10	111.000
Net earnings	*$ 12.300	$ 5,000

Grand Trunk Western Railway.

	1911.	1910.
Earnings	$ 497.600	$ 461.000
Expenses	415.400	372.000
Net earnings	$ 82 200	$ 89,000

Detroit. Grand Haven and Milwaukee Ry.

	1911.	1910.
Earnings	$ 157.100	$ 140,000
Expenses	160,000	118.000
Net earnings	*$ 2,900	$ 22,000

*Deficit.

Approximate gross earnings for March. $3,909 773. and for two weeks ended Apr. 14. $1,748 951. against $3,793,257 and $1,640,783 for same periods 1910.

Traffic Receipts of the System.

Aggregate from Jan. 1 to Mar. 31:—

	1911.	1910.	Inc.
Grand Trunk Ry.	£1,614 249	£1 545 426	£68.823
Canada Atlantic Ry.	91.839	87 164	4.675
G T Western Ry.	329.154	310 159	18,995
D G.H & M Ry..	100.548	93.958	6,590
Totals	£2 135.790	£2,036,707	£99,083

New England Connections With Canada.

In connection with the extension of G.T.R. influences in Rhode Island and Vermont, through its controlled line—the Central Vermont Ry., the New York, New Haven and Hartford Rd., is working out extension plans to secure Canadian connections independent of its existing affiliations. The N.Y., N.H. and H. Rd., controls the Boston and Maine Rd. which operates the Massiwippi Valley Ry. in Quebec. The B. & M. Rd. controls the Maine Central Rd., owns the Hereford Ry. in Quebec, and the Princeton Branch of the Washington County Ry. in New Brunswick. Through the two lines in Quebec, the N.Y., N.H. and H. Rd. secures connections which enables it to operate through passenger cars into Montreal and Quebec.

In the U.S. a ten-mile line is being built from Hinsdale to Brattleboro, Vt., which will have the effect of making the N.Y., N.H. and H. Rd., independent of the Central Vermont Ry., over which it had running powers into Brattleboro. The Montpelier and Wells River Ry.; the Barre Ry., and the Barre Rd., have been acquired by interests associated with the B. and M. Rd., and according to President Mellen will be amalgamated with it These lines will give the B. and M. Rd. a direct connection with the granite quarry areas in Central Vermont. The N.Y., N.H. and H. Rd., has also secured trackage rights over the Boston and Albany Rd. from the New York Central and Hudson River Rd., and from the same company interests allied with the B. and M. Rd. have purchased 25.520½ preferred shares of the Rutland Rd. This company owns the Rutland and Noyan Ry., 3.39 miles in length. in Canada, and has trackage rights from Noyan Jct. into Montreal, 53 miles.

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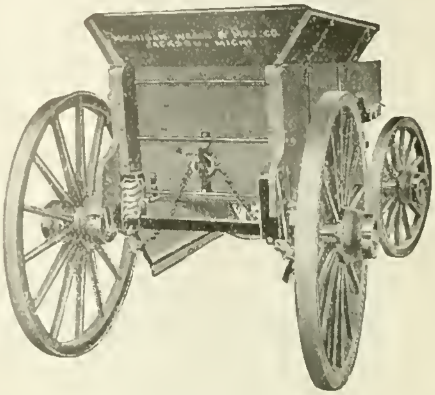

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Railway Rolling Stock Notes.

The Dominion Parliament has voted $21,750, for additional rolling stock for the Prince Edward Island Ry.

The Hart-Otis Car Co. has ordered 45 special steam shovel clay cars from the Canadian Car and Foundry Co.

Allis-Chalmers-Bullock, Limited, has ordered two special skidding and logging engine cars from the Canadian Car and Foundry Co.

The G. T. P. R. has received three colonist cars, nos. 3017, 3019 and 3020, from the Canadian Car and Foundry Co., Montreal.

The Intercolonial Ry. has received one stores car from the Nova Scotia Car Co., Halifax, and has ordered one van to be built at its Moncton shops.

The Canadian Northern Ry. has deposited with the Secretary of State at Ottawa a bailment of rolling stock, made with the Imperial Rolling Stock Co., Mar. 29, 1911.

The Montreal and Southern Counties Ry. (G.T.R.), has ordered one electric motor combination passenger and baggage car, and one electric motor flat car, to be built at the G.T.R. Montreal shops.

The Dominion Iron and Steel Co. has ordered from the Canadian Car and Foundry Co. 50 all steel coal cars, 100,000 pounds capacity, with Westinghouse air brakes, Simplex brake beams and bolsters, and Janney couplers.

The Laprairie Brick Co., Laprairie, Que., and the Victoria Harbor Lumber Co., Victoria Harbor, Ont., have each received one four wheeled locomotive, of which we gave details in our last issue, from the Montreal Locomotive Works.

The Canadian Northern Ry., between Mar. 16 and Apr. 13, ordered the following additions to rolling stock: 50 Hart convertible cars from the Hart-Otis Car Co., Ltd., Montreal, and 50 steel underframe flat cars from the Canadian Car and Foundry Co., Montreal.

The 21 Hart-Otis steel dump coal cars which the Intercolonial Ry. has ordered from the Canadian Car and Foundry Co., Montreal, as mentioned in our last issue, will be of 100,000 lbs. capacity, and will be equipped with Westinghouse air brakes, Simplex brake beams and bolsters, and Janney couplers.

Allis-Chalmers-Bullock, Limited, has ordered from the Canadian Car and Foundry Co. one standard Lidgerwood unloader car for a 60 ton pull rapid unloader, the car to be equipped with Westinghouse air brakes, Simplex brake beams and bolsters, and the engine of the unloader to be protected by a hood.

The Dominion Steel Corporation Ltd., has ordered one mogul freight locomotive, cylinders 19 by 26 ins., driving wheels 50 ins., total weight in working order, 129,000 lbs.; and one consolidation freight locomotive, cylinders 21 by 26 ins., driving wheels 50 ins., total weight in working order 178,000 lbs., from the Montreal Locomotive Works.

The Dominion Iron and Steel Co. has ordered from the Canadian Car and Foundry Co. 25 flat cars with wood underframe, 25 gondola cars for limestone, and 60 wooden ore cars lined with steel. The capacity of all these cars is 80,000. lbs. They are to be equipped with Westinghouse air brakes, Simplex brake beams and bolsters, and Janney couplers.

The Dominion Parliament has voted the following sums on account of rolling stock for the Intercolonial Ry.:—to improve triple valves of air brakes, $7,150; to provide air brakes for freight cars, $12,160; to exchange drawbars of freight cars, $2,000; to equip passenger cars with fire extinguishers and tool boxes, $6,400; rolling stock, $133,200.

The G.T.R., since Jan. 30, has ordered six first class coaches to be built in its Montreal shops, and has received 602 steel under frame box cars, and 442 all steel coal cars, from the Canadian Car and Foundry Co., Montreal, three first class coaches from its Montreal shops, and 12 consolidation locomotives from the American Locomotive Co.

The Canadian Northern Ry., between Mar. 16 and Apr. 13, received the following additions to rolling stock: 285 box cars and two first class cars from the Canadian Car and Foundry Co., Montreal; eight cabooses from the Crossen Car Manufacturing Co., Cobourg, Ont., and two baggage and mail coaches from the Preston Car and Coach Co., Preston, Ont.

The British Columbia Electric Ry. has ordered from the Canadian Car and Foundry Co., for its Victoria lines, one steel one-way dump car with cab, for which the Canadian Westinghouse Co. will furnish the electric equipment; also two steel one-way dump cars without cab, to be used as trailers. The capacity of each car will be 40,000 lbs. They will be used in construction work.

The C.P.R., between Mar. 14 and Apr. 14, placed orders for rolling stock as follows: two superintendents' business cars, 61 box cars, five stock cars, two freight refrigerator cars, one second class car, three vans, two snow ploughs, and two G2 locomotives at its Angus shops, Montreal; four steel flat cars, one steel coal car, and one Hart ballast car, with the Canadian Car and Foundry Co., Montreal.

The Sydney and Louisburg Ry. has ordered one consolidation locomotive and one mogul locomotive from the Montreal Locomotive Works. Following are the chief dimensions:—

	Consolidation.	Mogul.
Weight in working order	178,500 lbs.	129,000 lbs.
Weight on engine truck	20,000 lbs.	16,500 lbs.
Weight on drivers	158,500 lbs.	112,500 lbs
Weight of tender	92,000 lbs.	103 000 lbs.
Wheel base, driving	15 ft.	12 ft. 6 in.
Wheel base, engine	23 ft.	20 ft. 6½ in.
Wheel base, engine and tender	51 ft. 6½ in.	49 ft. 4 in.
Driving wheel, diar.	50 in.	50 in.
Valve gear	Stephenson	
Boiler, type	Straight top	Extended wagon top
Boiler, pressure	200 lbs.	180 lbs.
Cylinders, diar. & stroke	21 by 26 in.	19 by 26 in.
Tubes, no. and diar.	368 2 in.	275 2 in.
Tubes, length	13 ft. 11 in.	10 ft. 5¼ in.
Tank capacity	4,000 U.S. gals.	5,000 U.S. gals.

Following are the chief details of the 300 steel underframe, forty ton flat cars, with fish-belly centre sills, which the Canadian Northern Ry. is having built by the Canadian Car and Foundry Co., Montreal:—

Length over end sills	41 ft. ¼ in.
Length over buffer blocks	42 ft. 2 in.
Length over face of knuckles	44 ft.
Width over side sills	8 ft. 10 in.
Width over floor	9 ft.
Width over all	9 ft. 7⅝ in.
Height, top of rail to top of floor	4 ft. 2¾ in.
Height over all	5 ft. 11¼ in.
Centre to centre of trucks	31 ft. 2 in.
Depth of centre sills at centre	2 ft. 6 in.
Depth of centre sills at bolster	1 ft. ¾ in.
Wheel base	5 ft. 4 in.
Trucks	Arch bar type
Couplers	Janney cast steel 5 by 7 in. shank
Air brakes	Westinghouse K C. 812
Axles	M.C.B. open hearth steel
Journal bearings	5 by 9 in.
Journal boxes	McCord m.i.
Springs	M.C.B. class C
Brake beams and bolsters	Simplex
Brake shoes	Steel back

Following are the chief details of the two class G-1d locomotives, which the C.P.R. is having built at its Angus shops, Montreal.

Weight on drivers	136,000 lbs.
Total weight	217,000 lbs.
Cylinders, diar. and stroke	21 by 28 in
Valves	11 in. piston
Drivers, diar.	75 in.
Boiler, type	Extended wagon top
Boiler, pressure	200 lbs.
Heating surface, tubes	2,777 sq. ft.
Heating surface, total	183 sq. ft.
Heating surface, total	2,960 sq. ft.
Heating surface, superheater	539 sq. ft.
Equivalent heating surface	3,767 sq. ft.
Tubes, no. and diar.	193 2¼ in., 22 5 1-5 in.
Tubes, length	19 ft. 4⅞ in.
Firebox, type	radial stayed, with cross stays
Firebox, dimensions	7 ft. 10⅛ in. 65 ft. 9⅞ in.
Grate area	45.6 sq. ft.
Capacity, water	5,000 gals.
Capacity, coal	10 tons
Axles, main	9½ by 12 in.
Axles, others	9 by 12 in.
Brakes	Westinghouse ET6
Brake beams	Simplex outside hung
Valve gear	Walschaert
Superheater	Vaughan and Horsey
Wheel centres	Cast steel

The C.P.R., between Mar. 14 and Apr. 14, received the following additions to rolling stock: 16 suburban cars, three sleeping cars, one pile driver, 46 wooden box cars, and five switching locomotives, from its Angus shops, Montreal; 99 automobile cars and one steel flat car, from the Canadian Car and Foundry Co., Montreal; ten N3 locomotives from the Montreal Locomotive Works; five D10 locomotives from the Canadian Locomotive Co., Kingston, Ont., and 39 steel pitch cars from the U.S.

The Steel Co. of Canada, Ltd., Hamilton, Ont., has ordered one four wheeled locomotive from the Montreal Locomotive Works. Following are the chief details:—

Weight in working order	88,000 lbs.
Wheel base	7 ft.
Driving wheel, diar.	50 in.
Valve gear	Stephenson
Cylinders, diar. and stroke	17 by 24 in.
Boiler, type	Straight top
Boiler, pressure	180 lbs.
Tubes, no. and diar.	139 2 in.
Tubes, length	11 ft. 10 in.
Tank capacity	1,000 U.S. gals.

Following are chief details of the four six-coupled switching locomotives which the Intercolonial Ry. has ordered from the Canadian Locomotive Co., Kingston, Ont., as mentioned in our last issue:—

Weight in working order	138,000 lbs.
Wheel base, engine	12 ft.
Wheel base, engine and tender	40 ft.. 5¼ in.
Length over all	55 ft. 4 in.
Width over all	10 ft.
Height over all	15 ft. 3 in.
Heating surface, firebox	132 sq. ft.
Heating surface, tubes	1,935 sq. ft.
Heating surface, total	2,067 sq. ft.
Grate area	27.5 sq. ft.
Driving wheels, diar.	51 ft
Driving wheel centres	Cast iron
Driving journals, diar. and length	8½ by 11 in.
Cylinders, diar. and stroke	20 by 26 in.
Boiler, type	Straight top, radial stayed
Boiler pressure	200 lbs.
Tubes, no. and diar.	300 2 in.
Tubes, length	12 ft. 6 in.
Brakes	Westinghouse American
Weight of tender, loaded	90,000 lbs.
Tank, style	Hopper, with sloping back
Tank capacity	3,800 gals.
Coal, capacity	6 tons
Truck, type	Four wheel
Wheel, diar.	33 in.
Wheel, type	Wrought iron, steel tired
Journal, diar. and length	M.C.B. 4¼ by 8in.

Following are chief details of the three Pacific type locomotives which the Intercolonial Ry., has ordered from the Canadian Locomotive Co., Kingston, Ont., as mentioned in our last issue:—

Weight in working order on drivers	126,000 lbs.
Weight in working order, total	187,000 lbs.
Wheel base of engine, rigid	12 ft. 7 in.
Wheel base of engine, total	31 ft. 6 in.
Wheel base, engine and tender	57 ft. 10 in.
Length over all, engine and tender	67 ft. ½ in.
Width over all	10 ft. 3 in.
Height over all	15 ft.
Heating surface, firebox	162 sq. ft.
Heating surface, tubes	2,584 sq. ft.
Heating surface, total	2,764 sq. ft.
Grate area	45.75 sq. ft.
Driving wheels, diar.	72 ins.
Driving wheel centres	Cast steel
Driving journals, diar. and length	9 by 12 in.
Cylinders, diar. and stroke	21 by 28 in.
Boiler, type	Wide firebox, radial stayed
Boiler pressure	200 lbs.
Tubes, no. and diar.	232 2¼ ins.
Tubes, length	19 ft.
Brakes	Westinghouse American
Weight of tender loaded	120,000 lbs.
Tank, style	Water bottom
Tank, capacity	5,000 gals.
Coal, capacity	10 tons
Truck, style	4 wheel, steel bolster
Wheel, diar.	36 ins
Wheel, type	W. I. centre, steel tire
Journal, diar. and length	5½ by 10 in.

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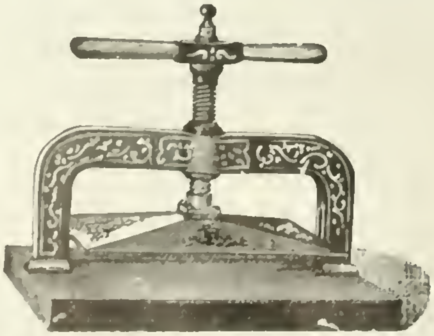

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MAINLY ABOUT PEOPLE.

C. M. Hays, President G.T.R. and G.T.P.R., sailed from New York, Apr. 19, for Europe.

Sir William Mackenzie, President Canadian Northern Ry., sailed from Halifax, N.S., Apr. 19, for England.

W. W. Butler, Vice President Canadian Car and Foundry Co., Montreal, has been elected Vice President Rea Mines, Ltd.

Major-General F. Wilson, who died at Montreal, Apr. 12, married a daughter of the late Sir Hugh Allan, of the Allan Line.

G. B. Greene, for many years Secretary-Treasurer Upper Ottawa Improvement Co., Ltd., Ottawa, died there, Mar. 30.

P. W. Graham, younger son of Hon. G. P. Graham, Minister of Railways and Canals, died at Brockville, Ont., Apr. 17, aged 25.

Mrs. McIntyre, who died at Lakewood, N.J., April 14, was the widow of Duncan McIntyre, one of the original C.P.R. directors.

J. P. McNaughton, General Sales Agent Dominion Iron and Steel Co., was married April 26, to Miss Etta Peppett, of North Sydney, N.S.

Sir William Mackenzie, President Canadian Northern Ry., has been elected a director of the Metropolitan Life Insurance Co., New York.

Walter Anderson, father of James Anderson, manager Sandwich Windsor and Amherstburg Ry., died at Ayr, Ont., April 14, aged 91.

G. W. Stephens, Chairman Montreal Harbor Commission, returned to Montreal, early in April, after having spent the winter in Europe.

The Governor General and Lady Grey will occupy Benvenuto, Sir William Mackenzie's house at Toronto, during the Ontario Jockey Club's race week, in May.

R. Creelman, Assistant General Passenger Agent, Canadian Northern Ry., Winnipeg, returned to duty, Apr. 12, having recovered from an attack of appendicitis.

Mrs. Bosworth, wife of G. M. Bosworth, Vice President, C.P.R., sailed Mar. 31, for Europe, where she will spend some weeks to recuperate after an illness.

J. S. Pyeatt, formerly Superintendent Canadian Division, Pere Marquette Rd., St. Thomas, Ont., has been appointed Superintendent District 3, 'Frisco Lines, at Chaffee, Mo.

Miss Ethel Holtby, daughter of A. R. Holtby, Bridge and Building Master, Grand Trunk Pacific Ry., Prince Rupert, B.C., was married, Apr. 13, to T. B. B. O'Neill, of Quebec.

F. Mabee, brother of J. P. Mabee, Chairman of the Board of Railway Commissioners, was found drowned, near Toronto, Apr. 15. He was incapacitated, some time ago, by paralysis.

Sir Thos. and Lady Tait, will be in London, Eng., for the cononation, when Miss Tait will be amongst the debutantes at Court, after which they will return to Canada, arriving about July 10.

J. R. Leckie, Locomotive Foreman, G.T.R., London, Ont., who was recently transferred from Palmerston, Ont., has been presented with a gold ring and gold mounted umbrella, by the staff at Palmerston.

E. J. Caron, assistant soliciting agent, G.T.R., Montreal, while boarding a train at Waterville, Que., April 4, missed his footing and fell under a car, one of his legs being so badly hurt that it had to be amputated below the knee.

The appointment of Lieut.-Col. H. H. McLean, K.C., M.P., Vice President St. John Ry., to command the Canadian troops at the coronation of King George, in June, with the temporary rank of Colonel, has been confirmed.

S. Sharples, private secretary to W. Wainwright, Second Vice President G.T.R. and G.T.P.R., Montreal, died there of typhoid fever, Apr 17, aged 22. He was born at Houghton, Eng., and had occupied the position for two years.

A. L. Clements, who was formerly City Freight Agent, C.P.R., Vancouver, B.C., and whose resignation we announced in our last issue, has entered the service of Evans, Coleman and Evans, Ltd., wharfingers and general shippers, Vancouver.

J. F. Stevens, M. Am. Soc. C.E., is reported to have resigned as President of the Oregon Trunk Ry., and other railways of the Hill system in Oregon, and to have been succeeded by C. R. Gray, Senior Vice President of the St. Louis & San Francisco Rd., of St. Louis, Mo.

Lord Strathcona has accepted the honorary chairmanship of the western committee of the Canadian Y.M.C.A., and has given $150,000 to the funds for suitable buildings for the association's purposes, in Manitoba, Saskatchewan and Alberta.

A. E. Duff, who was recently appointed District Passenger Agent, G.T.R., Toronto, was presented with an engraved gold watch, locket and chain, by the passenger and train agents, at Winnipeg, on his leaving there to take up his new duties.

W. C. Cushing, Chief Engineer Maintenance of Way, Pennsylvania Rd. Southwest System, Pittsburgh, Pa., who was recently elected President American Railway Engineering Association, for the current year, was born at St. John, N.B., Mar. 18, 1863, and has spent his railway career entirely in the U.S.

A. E. Duff, who was recently appointed District Passenger Agent, G.T.R., Toronto, was, prior to his leaving Winnipeg, where he had been for some time General Agent Passenger Department, G.T.R., and District Passenger Agent, G.T.P.R., presented with a travelling bag and Mrs. Duff with a silver tea service, by a number of the local railway officials.

Henry K. Wicksteed, B.A.Sc., M.Can. Soc. C.E., whose portrait we published in our last issue, was born at Quebec, Que., May 25, 1855, and prior to his appointment as Chief of Surveys, Mackenzie, Mann & Co., in 1905, he was with the Inverness and Richmond, and Halifax and South Western Rys., and Chief Engineer in charge of location on James Bay. His father was a lawyer of considerable eminence, and was for fifty years, Law Clerk of the House of Commons.

Hon. L. J. Forget, Director Richelieu and Ontario Navigation Co., and of the C.P.R., and a former President of the Montreal St. Ry., died at Nice, France, Apr. 7. He had been in poor health for some years, and left Canada for the south of France in November. He was uncle of R. Forget, who is interested in a number of transportation companies, and was father-in-law of Guy Boyer, ex-Superintendent of Construction, Montreal St. Ry., who is one of his executors. The estate is stated to amount to about $4,000,000.

Lieut.-Col. Hon. D Tisdale, K.C., who died at Simcoe, Ont., recently, aged 76, after a long illness, took a prominent part in the construction of the Grand Trunk, Georgian Bay and Lake Erie Ry., now the Georgian Bay Division of the G.T.R., and was President of the former railway for several years. He was also President of the St. Clair and Erie Ship Canal Co., and during his membership of the House of Commons, representing South Norfolk, he acted, for a considerable time, as chairman of the railway committee.

G. Cogger, who has been appointed joint agent, G.T.R. and Intercolonial Ry., at Quebec and Point Levi, Que., was born at Point Levi, Dec. 17, 1874, and entered G.T.R. service in Nov., 1889, since when he has been to Mar., 1890, messenger at Chaudiere, Que.; Mar., 1890 to Apr., 1893, messenger and clerk at Point Levi; Apr., 1893, to 1898, in Export Department at Portland, Me.; 1898 to Jan. 1, 1908, chief clerk at Point Levi; Jan. 1, 1908, to Mar. 15, 1911, accountant, Freight Department, Quebec, Que.

G. Hodge, whose appointment as Superintendent, District 2, Ontario Division, London, was announced in our last issue, was born at Montreal, Oct. 2, 1874, and entered C.P.R. service Mar. 24, 1890, since when he has been, to Aug. 8, 1890, in General Passenger Agent's office, Montreal; Aug. 8, 1890 to Jan., 1896, in various positions in Vice President's office, Montreal; Jan. 1896 to Feb. 1907, chief clerk to Vice President; Feb. 1907, to June 1908, Superintendent Montreal Terminals; June 1908 to Mar. 1911, Superintendent, District 3, Eastern Division, Montreal.

W. Stapelton, who has been appointed District Passenger Agent, Canadian Northern Ry., Saskatoon, Sask., was born at Bristol, Eng., May, 20, 1884. He entered Canadian Northern Ry. service in May, 1903, as stenographer in the Passenger Department and worked through the various positions to that of chief clerk of that department. From 1906 to Jan. 8, 1910, he was Travelling Passenger Agent, and from Jan. 8 to Apr. 8, 1910, was City Ticket Agent, Winnipeg, and from Apr. 8 to May, 1910, General Agent, Passenger Departmeent, Canadian Northern Steamships, Winnipeg.

A. J. Donegan, who has been appointed Assistant Superintendent, Algoma Central and Hudson Bay Ry., Michipicoten Harbor, Ont., was born at Perth, Ont., Feb. 17, 1881, and entered railway service June, 1899, since when he has been, to May 1, 1900, freight clerk, C.P.R., London, Ont.; May 1, 1900, to Mar. 15, 1901, bill clerk, Dominion Express Co., London, Ont.; Apr. 20, 1901, to July 31, 1910, brakeman, conductor and Trainmaster, consecutively, Algoma Central and Hudson Bay Ry.; Sept. 1, 1910, to Mar. 15, 1911, Storekeeper, Lake Superior Iron and Steel Co., Magpie Mine, Ont.

Robt. Stockton, C.E., who has been appointed Superintendent of Operation and Maintenance under the administration division of the C.P.R. Irrigation Department, Strathmore, Alta., was heretofore Irrigation Manager in the U.S. Reclamation Service on the Yellowstone Project in Montana. He designed the Huntley project, there, and operated it for some time, and had also, charge of construction work on the Yellowstone project. He will have charge of the field force of the western section of the C.P.R. irrigation block, where the construction work has been completed, and which has been handed over to the administration division for operation.

H. E. Whittenberger, Superintendent Eastern Division G.T.R., Montreal, whose portrait appears on the first page of this issue, was born at Peru, Ind. Nov. 9, 1869, and entered transportation service in 1885, his record being: 1885 to Feb., 1897, various positions, Wabash Rd.; Feb. 1897, to May, 1902, Trainmaster Middle Division, G.T.R.; May 1902 to Sept. 1904, Superintendent Denver and Rio Grande Ry.; Sept. 1904 to Jan. 1906, Superintendent Cincinnati, Hamilton and Dayton Rd., Indianapolis, Ind.; Jan. 1906 to Sept. 30, 1907, Superintendent Kansas City and Southern Rd.; Sept. 30, 1907 he was appointed Superintendent Eastern Division G.T.R., which position he still holds.

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W. M. Kirkpatrick, who has been appointed General Freight Agent, Eastern Lines, C.P.R., Montreal, is a son of the late Sir Geo. A. Kirkpatrick, at one time a director of the C.P.R. He was born at Kingston, Ont., Oct. 8, 1874, and entered C.P.R. service Mar. 7, 1892, in the Vice President's office, and up to July, 1899, he filled various positions in Chief Engineer's office, Foreign Freight Department, Montreal, and General Freight Agent's Office, Toronto; July, 1899, to Dec., 1902, clerk in Fourth Vice President's office, Montreal; Dec., 1902, to Apr., 1905, Assistant General Freight Agent, Pacific Division, Vancouver, B.C.; Apr., 1905, to Feb., 1907, Export Freight Agent, Montreal; Feb. to Dec., 1907, General Freight Agent, Atlantic Division, St. John, N.B.; Dec., 1907, to Apr., 1911, General Freight Agent, Through Traffic, Ontario Division, Toronto.

Jules Hone, who recently resigned the position of City Passenger and Ticket Agent, C.P.R., Quebec, Que., was born at Montreal, Sept. 8, 1874, and entered C.P.R. service in the Car Accountant's office, Montreal, Mar. 14, 1889, and from July, 1890, to Aug., 1891, was secretary to the Manager of Transportation, Montreal; Aug., 1891, to the summer of 1892, in City Ticket Office, Montreal; 1892 to July 4, 1893, chief clerk, City Ticket Office, Ottawa; July 4, 1893, to June 21, 1896, assistant to Chief Clerk City Ticket Office, Montreal; June 21, 1896, to Nov. 1, 1903, Ticket Agent at the Windsor Hotel, Montreal; Nov. 1, 1903, to 1906, City Passenger, Freight and Steamship Agent, Quebec, Que.; 1906 to Apr., 1911, City Passenger and Ticket Agent, Quebec. He is a director of the Quebec Cartage and Transfer Co., a member of the Quebec Board of Trade, and of a number of other local organizations. He has opened a steamship and general ticket agency, in partnership with L. J. Rivet, at 5 and 9 St. Lawrence Boulevard, Montreal with a branch office in Quebec.

J. K. McNeillie, whose appointment as Superintendent, District 1, Eastern Division, C.P.R., Farnham, Que., was announced in our last issue, was born at Toronto, Feb. 23, 1874, and entered railway service in 1890, since when he has been, to July, 1890, call boy and clerk in Stores Department, G.T.R., Lindsay, Ont.; July, 1890, to Nov., 1891, apprentice in round house, G.T.R., Lindsay, Ont.; Nov., 1891, to Sept., 1896, apprentice, locomotive fitter and machinist, G.T.R. Point St. Charles shops, Montreal; Sept., 1896, to Nov., 1897, clerk in Superintendent and Trainmaster's office, C.P.R., Farnham, Que.; Nov., 1897, to Nov., 1899, chief clerk Superintendent's office, C.P.R., Farnham, Que.; Nov., 1899, to May, 1900, clerk in General Superintendent's office, C.P.R., Winnipeg; May, 1900 to July, 1902, chief clerk same office; July, 1902, to Mar., 1903, Car Service Agent, C.P.R., Winnipeg; Mar., 1903, to Oct., 1907, in Car Service Department, C.P.R., Montreal, in charge of the distribution of passenger equipment; Oct., 1907, to June, 1908, Assistant Superintendent of Terminals, C.P.R., Toronto; June, 1908, to Jan., 1909, Superintendent, District 1, Ontario Division, C.P.R., Toronto; Jan., 1909, to Mar., 1911, Superintendent, District 2, Ontario Division, C.P.R., London.

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Dominion Railway Subsidy Contracts. The Dominion Dovernment has entered into a contract with the Kootenay Central Ry., under the act granting aid to certain railways, for the construction of a railway from Golden, B.C., towards the International boundary, via Windermere and Fort Steele, thence crossing the Crows Nest Pass branch of the C.P.R., near Elko, a distance not exceeding 186 miles.

Quebec and Saguenay Railway.

We are officially advised that a contract has been let to O'Brien and Doheny, for the building of 56 miles of this projected railway. The line will run from St. Joachim, where connection can be made with the line of the Quebec Ry., Light and Power Co., to Murray Bay wharf, and then up to the Falls. The present contract covers the building of the line from Cap Tourmente to Murray Bay, and calls for the completion of the work by 1912. The line from Murray Bay wharf to the Falls is already under construction, the contractors being the Bishop Construction Co., of Montreal, and it is expected to be completed in 1911. (Mar., pg. 259.) A delegation of U.S. landowners in the vicinity of Murray Bay waited on the Provincial Government, April 11, with a view of securing some change in the route of Murray Bay, with a view of protecting the property of summer residents, and L. A. Vallee, Engineer of the Provincial Public Works, was instructed to report on the question. Construction is to be started at once. A. H. N. Bruce is Chief Engineer, and J. F. Guay, General Manager. (April, pg. 365.)

Since the above was put in type we have received later official advices in which it is stated that it is expected to start work on the first 56 miles in May and to complete it by September. The contract which has been let to the Bishop Construction Co. is for 7½ miles from Pointe a Pic to the East Canada Power & Pulp Co.'s site. The contract is on a percentage basis and work has been started on it.

There are four engineering parties in the field revising location, and one on construction on the Bishop Construction Co.'s contract. The location of the main line follows the shore and is extremely rough, the rocks in some places rising for several hundred feet perpendicularly. The tides will wash the banks for fully half the distance and great care will have to be exercised to prevent washouts. The St. Lawrence River averages about 12 miles wide for the whole distance and with the prevailing easterly winds the seas at high tide are very high.

From the fact that the Q. & S. Ry. will start from Cap Tourmente, the terminus of the Quebec Ry,, Light & Power Co.'s Montmorency Division, the impression seems to have got abroad that the Q. & S. Ry. is also to be an electric line. It is to be operated by steam.

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C. P. R. Montreal-Ottawa Line.

In an interview at Toronto April 24 D. McNicoll, Vice President C.P.R., is reported to have stated that the location of a line from Glentay, on the Montreal-Toronto line, 15.7 miles west of Smiths Falls, via Belleville, thence along the shore of Lake Ontario to a point east of Leaside Jct., 5.3 miles east of Toronto. It was originally intended to start this line from Bathurst, 19.4 miles west of Smiths Falls, but Glentay has been decided on instead. Mr. McNicoll added that engineers would be started from the western end of the proposed new line to meet those working from the east, and that construction would be completed in about two years. The new line would have a gradient of about four-tenths of 1%, and would be adapted for fast passenger travel, avoiding the Scarboro elevation.

Mr. McNicoll also stated that track on the Georgian Bay and Seaboard Ry. from Victoria Harbor will be laid this year to Bethany, 12.7 miles west of Peterboro' on the Montreal-Ottawa line, and that in July the C.P.R. upper lake steamships will begin running from Victoria Harbor to the head of Lake Superior, instead of from Owen Sound, as at present.

NOTICE.

PUBLIC Notice is hereby given that the Canadian Pacific Railway Company, as lessee of, and exercising the franchises of, the Atlantic and Northwest Railway, will, so soon after the expiration of four weeks from the first publication of this notice, as the application can be heard, apply to the Board of Railway Commissioners for Canada under the provisions of sections 221 to 225, 227 and 237 of The Railway Act, for authority to construct, maintain and operate a branch line or railway and spurs in the Parish of St. Brigide, County of Iberville, and the parish of West Farnham, county of Missisquoi, in the Province of Quebec, said spur commencing at a point on the centre line of the main line of the Farnham section of the railway, at chainage 437+20, and extending northeasterly across public road from St. Brigide across part of Lot No. 401 in the said Parish of St. Brigide, to and into said Parish of St. Brigide, to and into the Parish of West Farnham, thence northerly parallel to and east of the boundary between the Counties of Iberville and Missisquoi across the Central Vermont Railway, and across public road to the Town of Farnham, to and into the Military Camp ground of the Canadian Government situate on Lot 341 of the Parish of West Farnham, as said branch line of railway and spur are shown on a plan with book of reference and profile deposited in the Registry Office for the County of Missisquoi on the 20th March, 1911, and in the Registry Office for the County of Iberville, on the 6th April, 1911.

E. W. BEATTY,
Solicitor.

Montreal, the 8th day of April, 1911.

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NOTICE.

NIAGARA RIVER BRIDGE COMPANY.

The annual general meeting of the Niagara River Bridge Company, for the election of directors and other general purposes, will be held on Wednesday, the 7th of June, 1911, at the hour of eleven o'clock in the forenoon, at the offices of the Canada Southern Railway Company, in the City of St. Thomas.

NICOL KINGSMILL,
Secretary, N. R. B. Co'y.

20th April, 1911.

CANADA SOUTHERN RAILWAY COMPANY.

The annual general meeting of the Canada Southern Railway Company, for the election of directors and other general purposes, will be held on Wednesday, the 7th of June, 1911, at the hour of eleven o'clock in the forenoon, at the Company's head office in the City of St. Thomas.

NICOL KINGSMILL,
Secretary C. S. Ry. Co.

20th April, 1911.

NIAGARA GRAND ISLAND BRIDGE COMPANY.

The annual general meeting of the Niagara Grand Island Bridge Company, for the election of directors and other general purposes, will be held on Wednesday, the 7th of June, 1911, at the hour of eleven o'clock in the forenoon, at the Company's head office in the City of St. Thomas.

NICOL KINGSMILL,
Secretary N. G. I. B. Co.

20th April, 1911.

The Hudson's Bay Company

THE COMPANY OFFERS FOR SALE

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Transportation by the Company's Steamers, brigades of boats and canoes throughout the Territories not traversed by railways.

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Train Numbering on C. P. R.

On June 4 a new system of train numbering will go into effect on all C.P.R. lines from coast to coast. The general principle of numbering is to carry the same number with the same train from starting point to destination, and thus do away with the system of having two or three numbers applying to the same train because it happens to run over two or three subdivisions on the same general division. In some instances it may be necessary for odd and even numbers of trains to be running in the same direction. There can be no objection to this, as the time table clearly shows which direction is superior and has no reference to numbers whether odd or even. Thus new no. 951 will appear from Smiths Falls to Vancouver, instead of the present no 126 Smiths Falls to Carleton Place, and 117 Carleton Place to Fort William.

Nos. 1 to 14 inclusive have been allotted for through passenger trains where they run over eastern and western lines and portions thereof. No. 1 train will be numbered through from Montreal to Vancouver, taking the place of old no. 97. No. 2, Vancouver to Montreal, old no. 94. No. 3, Toronto to Vancouver old no. 95. No. 4, Vancouver to Toronto, old 94. No. 5, Montreal to Winnipeg, old no. 1. No. 6, Winnipeg to Montreal, old no. 2. Nos. 7 to 14 are reserved for future use.

Nos. 15 to 50, are allotted to eastern lines inter-division passenger trains.

So far nos. 15 to 32 only have been allotted, the balance of the numbers up to 50 being reserved for future use.

Nos. 901 to 950 have been allotted to eastern lines inter-divisional fast freights, and 951 to 970 to fast through freights eastern and western lines. The balance of numbers of this service up to 950 are reserved for future use.

In the case of dead freight numbers which are only used in order to provide schedules in the superior direction for greater safety in train movement, small numbers are desirable on account of used so often in train orders. Therefore, nos. 71 to 99 have been reserved for these dead freight schedules and may be used as required on any general division.

The balance of the passenger and mixed trains will be numbered in the series allotted to each general division.

The numbers for passenger and mixed trains are to be decided by the General Superintendent. The series of numbers allotted to eastern lines are as follows:—

Atlantic Division	101 to 199 inclusive
Eastern Division	200 to 599 inclusive
Ontario Division	600 to 799 inclusive
Lake Superior Division....	800 to 899 inclusive

A sufficient margin for numbers has been figured on for each division to permit of the putting on of additional trains and keeping within the series allotted to each general division.

At the time of writing we had not received details of the new numbering of the inter-division passenger trains, local passenger and mixed trains and freight trains on the western lines.

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Canadian Freight Association.

At the annual meeting in Montreal, April 13, officers and committees were elected as follows:—

President, C. A. Hayes, G.T.R., Montreal; 1st Vice President, B. R. Hepburn, Ontario & Quebec Nav. Co., Picton, Ont.; 2nd Vice President, G. C. Ransom, Michigan Central Rd., Buffalo, N.Y.

Advisory Committee—J. Pullen, W. B. Bulling, G. C. Ransom.

Executive Committee—C. A. Hayes, F. F. Backus, W. M. Kirkpatrick.

Classification Committee—W. B. Bulling, M. H. Brown, C A. Hayes, W. Phillips, F. J. Watson, W. M. Kirkpatrick, L. Macdonald, H. E. Macdonell, A. E. Rosevear, R. E. Perry.

Inspection Committee—R. W. Long, G. Tombs, F. Conway, R W. Youngs, J. Paul, G. T. Pettigrew, J. P. Daly, H. A. Young, W. S. Elliot, W. B. Bamford.

C. A. Hayes, G. B. Brown, G. H. Shaw and the Secretary, T. Marshall, were appointed a committee to select a place for the quarterly meeting in July.

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G.T.R. Coach Wheel Lathe.

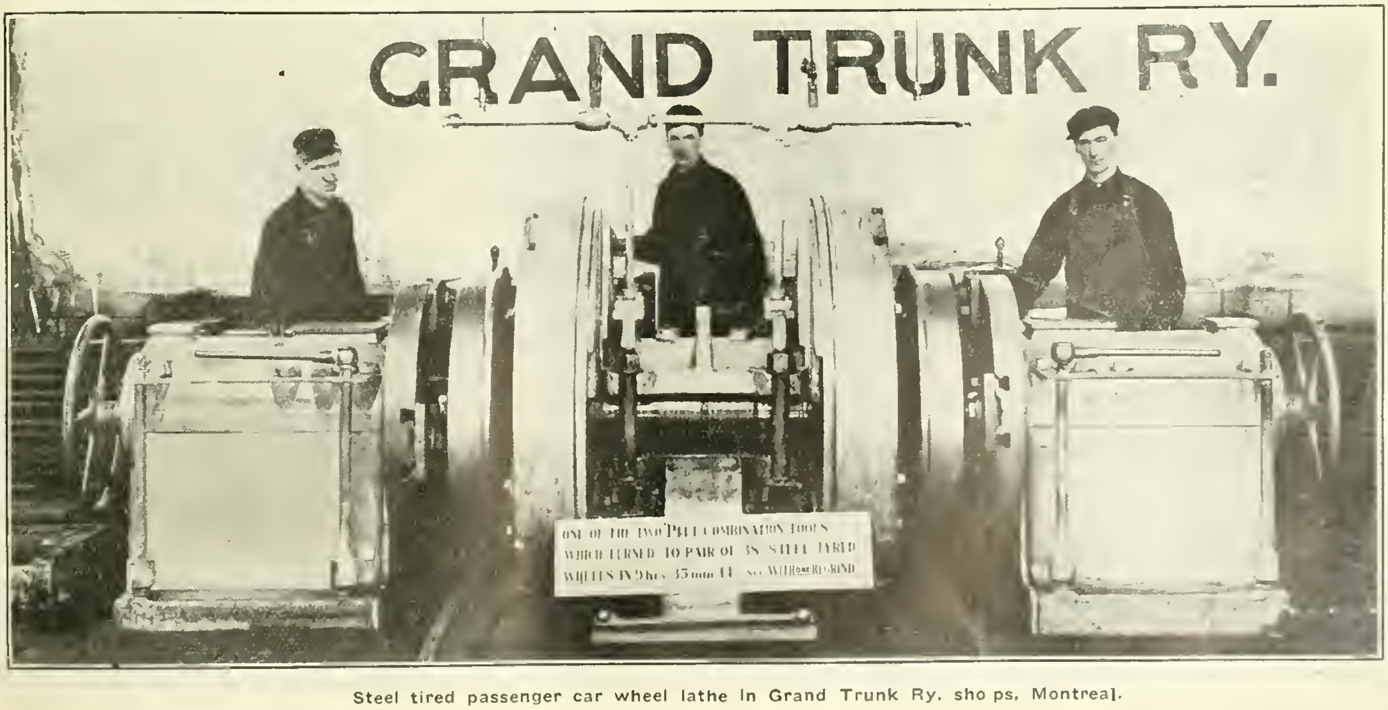
The illustration on this page shows a steel tired passenger car wheel lathe which was installed at the G.T.R. shops, Point St. Charles, Montreal, in March. The accompanying table gives a record of the passenger car wheels turned out at a test of the machine on March 23, when 40 pairs of 38 in. steel tired wheels were turned out in 9 hours 35 minutes. It is said that the result of this test excels any other which have been made on this continent. The lathe, which was built by the London Machine Tool Co., Ltd., of Hamilton, Ont., is driven by a 50 h.p. motor, variable speed, the tail stock operated by motor greatly facilitating the operation of the lathe. The tools used in the test only required one grind for the entire operation used on the 21 lb. pair of wheels.

Record of passenger car wheel turning test on wheel lathe at G.T.R. car shops, Montreal, March 23, 1911:—

Pairs of Wheels	Time Putting Wheel in Lathe	Actual Turning Time	Time Removing Wheel	Total Time
1st	3.50 2/5	6.19 4/5	2.49 4/5	13.00
2nd...... ..	3.40 2/5	6.19 3/5	3.00 2/5	13 00 2/5
3rd	8.25 4/5	7 34 1/5	4.00 1/5	15.00 1/5
4th	3 30	5.41 2/5	2.48 1/5	11.59 3/5
5th........	3.34 2/5	7.15	2.40 4/5	13 30 1/5
6th	3.36	6.55 2/5	3.28 1/5	13.59 3/5
7th	4.15	8.15 2/5	3.00	15.30 2/5
8th	3.59 2/5	6.45 1/5	3.15 2/5	14.00
9th........	4.51 2/5	8.48 4/5	4.20	18.00 1/5
10th .	3.55 1/5	11.12 1/5	2 52 2/5	17.59 4/5
11th........	3.36 1/5	6.46 4/5	2.37 1/5	13.00 1/5
12th	3.34 2/5	10.05 2/5	4.20 2/5	18.00 1/5
13th	4.49	7.21 3/5	3.19 1/5	15.29 4/5
14th........	3 37 3/5	7.15 4/5	3.26	16.09 2/5
15th........	3.21 3/5	8.55 4/5	4.02 3/5	15.20
16th........	3 47 3/5	9.31 4/5	3.00 3/5	16.20
17th........	3.58 3/5	7.20	5.06 2/5	16.25
18th	3.57 3/5	6.26 4/5	3.10 3/5	13.35
19th......	2.53 2/5	6.54 1/5	4.17 2/5	14.10
20th...... ..	3.21 2/5	7.06 1/5	4.02 2/5	14 30
21st ...	2.45	6.49 1/5	2.41 1/5	12.15 2/5
22nd......	3.14 3/5	5.49 4/5	2.36 4/5	11.41 1/5
23rd.	2.36 1/5	7.00	3.10 3/5	12.46 4/5
24th	3.25 2/5	6.38 4/5	3.39 4/5	13.44
25th	2.56 1/5	6.13 4/5	2.36 2/5	11.46 2/5
26th........	2.29 2/5	7.55 2/5	3.46 1/5	14.10
27th.....	2.45 2/5	7.38	3.06.3/5	13.30
28th... .	4.06 1/5	7.38	2.46 1/5	14.30 2/5
29th	4.28 2/5	10.53	2.17 4/6	17.39 1/5
30th...... .	2.39 2/5	9.39 2/5	3.39	15.57 4/5
31st	3.05 2/5	8 31 1/5	2.43 3/5	14.19 1/5
32nd	3.18 1/5	8.33	2.45 3/5	14.36 4/5
33rd	4.24 4/5	8.21 4/5	2.11 4/5	14.58 2/5
34th	3.15 1/5	6.29 1/5	2 28 1/5	12.12 3/5
35th...... ..	2.43 2/5	6.51 4/5	2 09	11.44 1/5
36th........	3.13 1/5	8.23 1/5	5.45 4/5	17.22 1/5
37th	2 57	9.56 2/5	2.28 4/5	15.22 1/5
38th	3.34 2/5	8.29	2.33 3/5	14.37
39th	2 46 2/5	7 46	2.24	12.56 2/5
40th	2.58 1/5	7.43 1/5	2.22 4/5	13.04 1/5
	2.21.12 4/5	5.10.10 3/5	2.07.51	9.39.14 2/5
Average ...	3.31 4/5	7.45	3.06 1/5	14 23 4/5
Minimum ..	2.29 2/5	5 41 2/5	2.09	11.41 1/5
Maximum .	5.27 3/5	11.12 1/5	5 45 4/5	18.00 1/5

The machine was operated by two mechanics and two helpers, in addition, one man took electrical readings.

The wheels were Krupp B.V.G. pairs 1 to 31, were 38 in. 5×9 wheels, pairs 32 to 40 were 38 in. 4½ by 8 wheels.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railway publications better than **"Forest Stream and Seashore."** It is a well written book of over 200 pages, beautifully illustrated, and describes this portion of the Great Dominion of Canada in much detail and can be obtained by sending ten cents in stamps to cover postage to

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Steel Rails.
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TRANSPORTATION APPOINTMENTS.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Algoma Central and Hudson Bay Ry.—A. J. Donegan, heretofore Storekeeper, Lake Superior Iron and Steel Co., Magpie Mine, Ont., has been appointed Assistant Superintendent. A.C. & H.B. Ry. Office, Michipicoten Harbor. Ont.

Canadian Northern Ontario Ry.—E. Myers, Roadmaster at Beaverton, has had his jurisdiction extended over the lines north of Parry Sound, the position of Roadmaster at Sudbury having been abolished on the resignation of W. B. Clearwater. A. E. Reid continues as Assistant Roadmaster at Sudbury.

F. V. Higginbottom, heretofore in City Ticket Office, G.T.R., London, Ont., has been appointed City Ticket Agent, C.N.O.R., Toronto, vice E. P. Wright, transferred.

E. P. Wright, heretofore City Ticket Agent, Toronto, has been appointed chief clerk to Commercial Agent at St. Paul. Minn.

Canadian Northern Quebec Ry.—J. B. Hoseason, heretofore chief clerk to Assistant Passenger Traffic Manager, G.T.R., Montreal, has been appointed chief clerk to General Freight and Passenger Agent, C.N.Q.R., Montreal.

Canadian Northern Ry.—W. Stapleton, heretofore General Agent, Passenger Department, Canadian Northern Steamships Ltd., Winnipeg, has been appointed District Passenger Agent, C.N.R., at Saskatoon, Sask., vice R. L. Fairbairn, transferred to Toronto.

Canadian Northern Steamships, Ltd.—F. J. Thompson has been appointed Marine Superintendent at Montreal.

A. H. Davis, heretofore Passenger Agent, Montreal, has been appointed General Agent for Manitoba, Saskatchewan and Alberta, and that part of Ontario west of, and including, Port Arthur, vice W. Stapleton, transferred. Office, 272 Main St., Winnipeg. The position of Passenger Agent at Montreal has been discontinued for the present.

Canadian Pacific Ry.—W. R. MacInnes, Freight Traffic Manager, issued a circular Apr. 15, re-organizing the Freight Traffic Department, Eastern Lines, as follows:—W. B. Bulling, Assistant Freight Traffic Manager, with general supervision over all matters pertaining to rates and divisions; all matters under the jurisdiction of the Board of Railway Commissioners, Transcontinental Freight Bureau, etc. Office, Montreal.

W. M. Kirkpatrick, heretofore General Freight Agent, (Through Traffic), Ontario Division, Toronto, is appointed General Freight Agent, in charge of the solicitation of freight traffic and of interchange with connecting lines. Office, Montreal.

W. B. Bamford, heretofore General Freight Agent, Atlantic Division, St. John, N.B., is appointed Division Freight Agent, Atlantic Division, with territory east of Megantic, Que., to St. John, N. B., including branch lines. Office, St. John, N.B.

H. E. Macdonnell, heretofore General Freight Agent, Eastern Division, Montreal, is appointed Division Freight Agent, Eastern Division, with territory, Chalk River and east, also Smiths Falls, Ont., to Newport, Vt., Megantic, Que., and Quebec, including branch lines. Office, Montreal.

M. H. Brown, heretofore General Freight Agent, (Local Traffic), Ontario Division, Toronto, is appointed Division Freight Agent, Ontario Division, with territory, Smiths Falls and west to Windsor, and Romford Jct., and south, including branch lines. Office, Toronto

J. H. Gritlin, heretofore District Freigh Agent, San Francisco, Cal., is appointed District Freight Agent, Toronto, with territory, Smiths Falls and west, to, but not including, Galt, Ont., including branch lines, reporting to the Division Freight Agent, Toronto.

W. J. Grant, heretofore Commercial Agent, Hamilton, Ont., is appointed District Freight Agent, Hamilton, Ont., with territory, Hamilton, Brantford and east to the Niagara Frontier, reporting to the Division Freight Agent, Toronto.

L. Mulkern, District Freight Agent, London, Ont., with territory, Galt and west, to Windsor, Ont., including branch lines, reporting to the Division Freight Agent, Toronto.

W. S. Elliott, heretofore General Freight Agent, Lake Superior Division, North Bay, Ont., is appointed Division Freight Agent, Lake Superior Division, with territory, Chalk River and west to Sault Ste. Marie and Port Arthur, Ont., including branch lines. Office, North Bay, Ont.

R. J. Hunt, Chief of Tariff Bureau, in charge of tariff publications and divisions, Eastern Lines. Office, Montreal.

G. J. P. Moore, heretofore chief clerk to First Assistant General Passenger Agent, Montreal, has been appointed City Passenger and Ticket Agent, Quebec, Que., vice Jules Hone, resigned.

P. J. Murphy has been appointed Storekeeper at Ignace, Ont., vice J. Paxton, transferred to Calgary, Alta.

J. McCallum, heretofore Assistant Superintendent, Maintenance of Way and Structures, District 2, Lake Superior Division, White River, Ont., has been appointed Assistant Superintendent, District 1, Lake Superior Division. Office, Sudbury, Ont. The position is a new one for District 1, and no appointment will be made for that position on District 2.

H. Bailey has been appointed Bridge and Building Master, District 1, Lake Superior Division, Sudbury, Ont., vice T. N. Colgan, resigned, on his appointment as Commissioner of Works for the Town of North Bay, Ont.

W. B. Lanigan, Assistant Freight Traffic Manager, Western Lines, issued a circular dated Apr. 1, re-organizing the Freight Traffic Department, Western Lines, as follows:—

W. B. Lanigan, Assistant Freight Traffic Manager, Winnipeg, with general supervision of freight traffic on Western lines, including the Esquimalt and Nanaimo Ry.

R. E. Larmour, heretofore General Freight Agent, Central Division, Winnipeg, is appointed Division Freight Agent, Central Division, with territory covering main line branches, Port Arthur to Swift Current and Rossyth, inclusive. Office, Winnipeg, Man.

G. H. Smith, heretofore Assistant General Freight Agent, Central Division, Winnipeg, is appointed District Freight Agent, Winnipeg city and terminals, including St. Boniface, reporting to Division Freight Agent, Winnipeg. Office, Winnipeg, Man.

R.W. Drew, District Freight Agent, with territory, main line, Yorkton to Rossyth, inclusive and branch, Lanigan to Strassburg, inclusive, reporting to Division Freight Agent, Winnipeg. Office, Saskatoon, Sask.

John Halstead, heretofore General Freight Agent, Western Division, Calgary Alta., is appointed Division Freight Agent, Western Division, covering main line and branches, Beverley to Laggan and Burmis, inclusive, Hardisty to Wetaskiwin, inclusive, Calgary to Edmonton, inclusive, and Lacombe to Castor, inclusive. Office, Calgary, Alta.

W. R. Haldane, heretofore General Freight Agent, Kootenay and Boundary Division, Nelson, B.C., is appointed Division Freight Agent, Kootenay and Boundary Division, with territory, Passburg to Kootenay Landing, inclusive, Proctor to Midway and Rossland, Gerard to Lardo inclusive; Nakusp to Sandon, inclusive, Slocan Jct. to Slocan city inclusive, and Arrow and Kootenay Lakes steamers. Office, Nelson, B.C.

W. C. Bowles, heretofore General Freight Agent, Pacific Division, Vancouver, B.C., is appointed Division Freight Agent, Pacific Division, with territory, main line and branches, Stephen to Vancouver, B.C., Esquimalt and Nanaimo Ry., Okanagan Lake Service, B.C. Coast Service and all Pacific Coast Freight Traffic. Office, Vancouver.

F. H. Clendenning, heretofore Assistant General Freight Agent, Pacific Division, is appointed District Freight Agent, B.C. Coast Service and trans-Pacific steamers. Office, Vancouver, B.C.

W. H. Gardiner, heretofore City Freight Agent, C.P.R., and District Freight Agent Esquimalt and Nanaimo Ry., is appointed District Freight Agent, E. & N. Ry., with territory covering Victoria to Cameron Lake, B.C. Office, Victoria, B.C.

R. G. Holmes, Chief of Tariff Bureau, Winnipeg, Man.

E. B. Patterson, heretofore Locomotive Foreman at Wilkie, Sask., has been appointed Locomotive Foreman at Hardisty, Sask., vice M. W. Boucher, assigned to other duties.

G. Sellars, heretofore Locomotive Foreman at Strassburg, Sask., has been appointed Locomotive Foreman at Wilkie, Sask., vice E. B. Paterson, transferred.

E. Dodd, heretofore night charge hand, has been appointed Locomotive Foreman at Strassburg, Sask., vice G. Sellars, transferred.

J. E. Ryan, heretofore Chief Dispatcher District 3. Alberta Division, Macleod, has been appointed Chief Dispatcher District 2, Alberta Division, Calgary, vice A. Allan, transferred.

A. Allan, heretofore Chief Dispatcher, District 2, Alberta Division, Calgary, has been appointed Fuel Agent, Alberta Division, vice R. A. Gamble, transferred. Office, Calgary, Alta.

J. Paxton, heretofore Storekeeper at Ignace, Ont., has been appointed Storekeeper Roundhouse Store at Calgary, Alta. This is a new position.

H. J. Humphrey, heretofore dispatcher, District 2, Calgary, has been appointed Chief Dispatcher, District 3, Alberta Division, Macleod, vice J. E. Ryan, transferred to Calgary.

Robt. Stockton, C.E., heretofore Irrigation Manager U.S. Reclamation Service, in charge of the Yellowstone project, Montana, has been appointed Superintendent of Operation and Maintenance under the Administration Division of the Irrigation Department, in charge of the Field Force of the Western Section of the Irrigation Block. Office, Strathmore, Alta.

E. W. Kolb, heretofore Superintendent, District 3, Sleeping, Dining and Parlor Cars and News Service, Winnipeg, has been appointed Superintendent Alberta Division, same service. Office, Calgary, Alta.

W. Kennedy, at one time Superintendent of Motive Power and Car Department, Central Vermont Ry., has been appointed General Foreman, C.P.R., Revelstoke, B.C., vice W. Byrd, resigned.

H. A. Seibel, heretofore on general agency staff, Chicago, Ill., has been appointed Travelling Passenger Agent, Atlantic Steamship Service, Chicago, Ill., vice E. L. Sheehan, promoted.

E. L. Sheehan, heretofore Travelling Passenger Agent, Atlantic Steamship Service, Chicago, Ill., has been appointed City Passenger Agent, same service, Chicago, Ill., vice J. J. Forster, appoint-

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TATE BIFUNCTIONAL ACCUMULATORS

ARE BETTER ADAPTED THAN ANY OTHER BATTERY.

They have Longer Life. Their watt-hour efficiency is higher.
They occupy less space for given capacities.
They are not affected by heavy discharge rates, including short circuiting.
They do not discharge while standing.
They do not require any repairs during their life.
They are not affected by mechanical jarring.
They are mechanically stronger.
The plates hold the active material in place PERMANENTLY.
The cells never have to be washed out, as there is no deposition of active material.

For portable work they are vastly superior, owing to their mechanical strength. And for given capacities they are lighter.

They are superior to Primary Batteries; especially in cold or damp climates. They show relatively small drop in capacity due to low temperature. They do not require the same expensive means of protection from dampness and cold.

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All statements made by us concerning the physical characteristics and performance of the TATE BIFUNCTIONAL ACCUMULATOR are based solely upon independent Engineering Reports or the results of practice. We can quote unquestionable authority for each and every assertion embraced in our advertisements.

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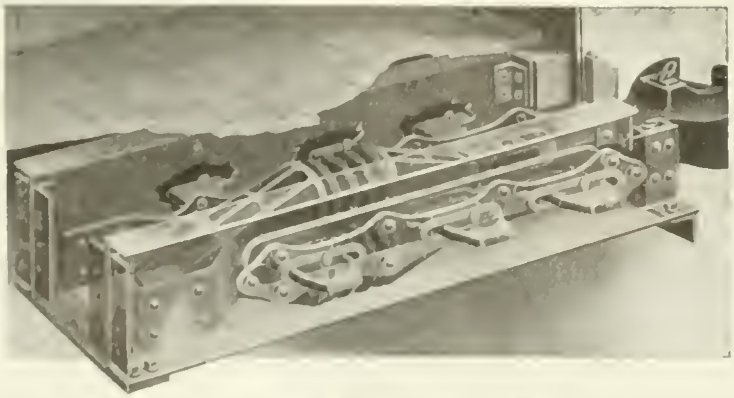

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ed Travelling Passenger Agent, same service, Seattle, Wash.

W. W. Smith, heretofore Travelling Freight Agent in California, has been appointed District Freight Agent, San Francisco, Cal., vice J. H. Griffin, transferred to Toronto.

Central Vermont Ry.—D. T. Lawrence, heretofore Manager, National Despatch-Great Eastern Line, Boston, Mass., has been appointed General Freight Agent, C.V.R., vice C. E. Dewey, transferred to Grand Trunk Pacific Ry. service. Office, St. Albans, Vt.

Chicago, Milwaukee and St. Paul Ry. A. W. Jones, heretofore Soliciting Agent Great Northern Ry., Montreal, has been appointed Travelling Freight and Passenger Agent, C.M. & St. P.R., Toronto, vice J. M. Copeland, resigned, to enter the C. & N.W.R. service, as announced in our last issue.

Grand Trunk Pacific Ry.—W. J. Quinlan, heretofore City Ticket Agent, G.T.R. and G.T.P.R., has been appointed District Passenger Agent, G.T.P.R. Winnipeg, Man., vice A. E. Duff, appointed District Passenger Agent, G.T.R. Toronto. Office, 260 Portage Ave., Winnipeg.

The following agents have been appointed:—Cabot, Man., J. Graham; Wainwright, Alta., G. Harper; Redditt, Ont., E. S. Nixon. The station at Clavet, Sask., has been closed.

Grand Trunk Ry.—E. S. Cooper, heretofore Chief Train Dispatcher, Districts 1 and 2, Eastern Division, Island Pond, Vt., has been appointed Chief Train Dispatcher, Districts 4 and 5, Eastern Division, vice E. S. Waterson, resigned. Office, Bonaventure Station, Montreal.

T. H. Mason, heretofore dispatcher at Island Pond, Vt., has been appointed Chief Train Dispatcher, Districts 1 and 2, Eastern Division, vice E. S. Cooper, transferred. Office, Island Pond, Vt.

The following agents have been appointed:—St. Gregoire, Que., J. A. Simoneau; Chaudiere Jct., Point Levi and Quebec, Que., G. Cogger; Beaconsfield, Que., N. Clark; St. Annes, Que., J. A. Carriere; Glen Huron and Nottawa, Ont., J. D. McGibbon (acting); Hamilton, (King St.), Ont., V. A. Cline; Thamesville, Ont., L. E. Marcus; Belle River Ont., E. G. Willson; La Sallette, Ont., J. W. MacDonald; Mount Forest, Ont., J. F. Roe; Elmwood, Ont., W. Given; Dobbinton, Ont., A. Henderson; Morrisburg, Ont., J. F. Myers; Mimico, Ont., T. H. Sumner; Burlington Jct., Ont., M. G. Watson; Pinkerton, Ont., N. J. Lowes; Wiarton, Ont., W. J. Riesberry; Whitechurch, Ont., W. M. Salkeld; Greenfield, Ont., R. J. Hardy; Port Huron, Mich., (Pass.), F. H. Potter; outside agencies, Cornwall, Ont., W. J. James; Peterboro, Ont., B. A. Rose; Reaboro, Ont., L. McMahon; Omemee, Ont., R. J. Mulligan; Fraserville, Ont., W. A. Kidd; Paris, Ont., B. Travers and Son.

Lake Erie and Western Rd.—J. S. Hall, heretofore Assistant General Passenger Agent, Michigan Central Rd., Detroit, Mich., has been appointed General Passenger Agent, Lake Erie and Western Rd., Fort Wayne, Cincinnati & Louisville Rd., and Northern Ohio Rd., vice L. W. Landman, promoted.

Lake Shore and Michigan Southern Ry., Etc.—I. P. Spining, in addition to his previous duties has been appointed General Western Passenger Agent, L. S. & M.S. Ry., Dunkirk, Allegheny Valley & Pittsburg Rd., and Lake Erie, Alliance & Wheeling Rd., vice L. D. Huesner, promoted.

Michigan Central Rd.—L. D. Huesner, heretofore General Western Passenger Agent, Lake Shore and Michigan Southern Ry., Chicago, Ill., has been appointed Assistant General Passenger Agent, M.C.Rd., vice J. S. Hall, appointed General Passenger Agent, Lake Erie and Western Rd. Office, Detroit, Mich.

National Despatch-Great Eastern Line.—C. J. Pierce, heretofore New England Agent, Boston, Mass., has been appointed Manager, vice D. T. Lawrence, appointed General Freight Agent, Central Vermont Ry. Office, Boston, Mass.

J. E. Berry, heretofore on the New England Agent's staff, has been appointed New England Agent, vice C. J. Pierce, promoted. Office, Boston, Mass.

New York Central and Hudson River Rd.—H. H. Downs has been appointed Chief Claim Agent N.Y.C. & H.R. Rd., and its leased and operated lines, except the Boston and Albany Rd. Office, New York.

M. Bronson, heretofore Superintendent Mohawk Division, Albany, N.Y., has been appointed Superintendent Electric Division, vice C. L. Bardo, resigned to enter another company's service. Office, New York.

D. W. Dinan, heretofore Superintendent Pennsylvania Division, Corning, N.Y. has been appointed Superintendent, Mohawk Division, vice M. Bronson, promoted. Office, Albany, N.Y.

J. W. Evans, heretofore Assistant Superintendent at Jersey Shore, Pa., has been appointed Superintendent, Ontario Division, vice S. J. Kearns, promoted. Office, Oswego, N.Y.

S. J. Kearns, heretofore Superintendent Ontario Division, Oswego, N.Y., has been appointed Superintendent Rochester Division, vice F. E. McCormack, promoted. Office, Rochester, N.Y.

F. E. McCormack, heretofore Superintendent Rochester Division, Rochester, N.Y., has been appointed Superintendent Pennsylvania Division, vice D. W. Dinan, promoted. Office, Corning, N.Y.

New York Central Lines.—F. V. Whiting has been appointed General Claims Attorney, for all lines except the Boston and Albany Rd., in general charge of claims for loss and damage to persons and property, except such as are subject to the jurisdiction of the traffic or accounting departments. Office, New York.

W. H. Falling has been appointed Assistant Chief Claim Agent, N.Y.C. & H.R. Rd., and its leased and operated lines, except the Boston and Albany Rd. Office, New York.

Ottawa and New York Ry.—J. P. Daly heretofore chief clerk to Division Freight Agent, New York Central Lines, Buffalo, N.Y., has been appointed General Freight and Passenger Agent, O. & N.Y.R., vice F. J. Balch, resigned. Office, Ottawa, Ont.

Grain Elevator Notes.

The elevator at Broadview, Sask., owned by A. R. Colquhoun and Sons, with about 6,000 bush. of grain, and one C.P.R. box car, were destroyed by fire, Mar. 30.

The Redcliffe Mill and Elevator Co., Ltd., of Redcliff, Alta., has been licensed to carry on its business in British Columbia, with office at Vancouver, and E. Munnings as its attorney.

The Saskatchewan Legislature, at its recent session, authorized the Government to raise by way of loan on the credit of the province, such sums as may be required for the purposes of the act incorporating the Saskatchewan Co-operative Elevator Co., passed during that session. The money is to be raised on securities bearing interest not to exceed 4%, the principal to be repaid in 40 years.

The G.T.R. has awarded a contract to John S. Metcalf Co., Ltd., Montreal, for the construction of a re-inforced concrete storage and shipping elevator of 500,000 bush. capacity, at Windmill Point, Montreal. This elevator is to be connected with the G.T.R. existing elevator there, which has a 1,100,000 bush. capacity, and was built by the same firm a few years ago. The cost will be about $125,000. Both elevators will be operated by the Montreal Warehousing Co., a subsidiary company of the G.T.R.

The International Milling Co. of Canada, Ltd., has been incorporated under the Dominion Companies Act, with a capital of $6,000,000, and office at Toronto, to carry on a general milling business, and in connection therewith to own and operate grain elevators, steam and other vessels, and other transportation facilities. The incorporators are A. Bicknell, J. W. Bain, F. R. McKelcan, M. L. Gordon, T. W. Lawson, E. G. McMillan, J. F. MacGregor, J. E. Riley, W. H. Walter and H. Riley, Toronto.

Among the Express Companies.

The Canadian Northern Ex. Co. has opened offices at Calder, Sask., and North Edmonton, Alta.

The Western Ex. Co. has closed its office at Skinner, Me. Shipments intended for there must be forwarded to Lowelltown.

The Western Ex. Co. has opened a regular waybill office at Skagway, Alaska, reached at all seasons of the year, via Vancouver, B.C., and steamer lines.

The Dominion Ex. Co. has announced that navigation having re-opened for the season, shipments for Michipicoten, Michipicoten Harbor, Michipicoten Island, Michipicoten River and Helen Mine should be routed via Sault Ste. Marie, Ont.

W. H. Plant, Traffic Auditor, Dominion Ex. Co., Toronto, has also been appointed Auditor in charge of all accounting, Western Ex. Co. The positions of Traffic Auditor and Auditor of Money Order Acounts, Western Ex. Co., have been abolished.

The Board of Railway Commissioners, after a hearing of complaints regarding the delivery limits, fixed by the express companies, in cities and municipalities, decided that the companies must make collections and deliveries within the limits of the boundaries, commencing June 1, and gives companies the right to ask for relief in special cases.

Telegraph and Cable Matters.

The Order of Railway Telegraphers will hold its biennial convention at Toronto, May 8.

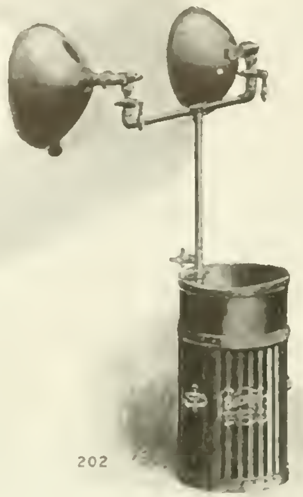
The Great North Western Telegraph Co. has removed its Brandon, Man., office to the rotunda of the Hotel Cecil.

The Newfoundland Legislature has confirmed contracts with the Western Union Telegraph Co. and the Direct United States Cable Co.

The Dominion Government telegraph line from Battleford, Sask., northerly to Isle Lacrosse, about 250 miles, will be proceeded with this year, an appropriation of $37,000 having been made.

The board of conciliation appointed to investigate the grievances of the Great North Western Telegraph Co.'s operators, consists of Justice Teetzel, Toronto, chairman; F. H. Markey, Montreal, representing the company, and D. Campbell, Toronto, on behalf of the men.

The Nova Scotia Telephone Co., which recently received an offer from the Maritime Telegraph and Telephone Co. to lease the former company's franchises, etc., guaranteeing 7% to the shareholders, or to purchase the stock at 125, is to recommend to the shareholders that the companies be merged, on terms which are stated to be satisfactory to both concerns.



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ASSOCIATION'S OFFICE, 70 Bond St., Toronto.

EXECUTIVE COMMITTEE.—C. E. A. Carr, General Manager Quebec Ry., Light, Heat and Power Co.; P. Dubee, Secretary Montreal St. Ry.; H. M. Hopper, Secretary-Treasurer, St. John Ry.; J. E. Hutcheson, Superintendent and Purchasing Agent Ottawa Electric Ry.; C. B. King, Manager London St. Ry.; W. R. McRae, Superintendent Motor and Truck Department Toronto Ry.

ASSISTANT SECRETARY, Aubrey Acton Burrows, Secretary and Business Manager Railway and Marine World.

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Projects, Construction, Betterments, Etc.

Alberta Electric Ry.—The Dominion Parliament has incorporated a company with this title to build the various lines mentioned on pg. 71 of our Jan. issue. (Mar., pg. 257.)

Aroostook Valley Electric Ry.—The act authorizing the company to acquire and electrify the Presque Isle branch of the C.P.R., and to extend its line westward from Washburn, Me., to the International boundary at L'Islet county, Que., and to other points in Maine, was finally passed by the Maine Legislature, Mar. 30. (April, pg. 363.)

Belleville Radial Ry.—The Ontario Legislature has extended the time for the construction of the lines authorized to be built by the act passed in 1909. (Mar., pg. 257, and April, 1909, pg. 281.)

Birds Hill and Springfield Ry.—The Manitoba Legislature has incorporated a company with this title to build an electric railway from St. Boniface to Birds Hill, Man. (April, pg. 363.)

Brandon Electric Ry.—The Manitoba Legislature has incorporated a company with this title to build an electric railway in Brandon, Man. A resolution was adopted by the city council Mar. 25, directing the preparation of a bylaw for submission to the ratepayers authorizing the issue of $300,000 of debentures for the purpose of building an electric railway line in the city. A committee of the board of trade was appointed to act with the city council in discussing probable routes. Mr. Farquharson, of Fort William, Ont., was in Brandon, Mar. 30, in consultation with City Engineer Speakman as to the routes to be recommended. As a result of their consultation, the City Engineer recommended the construction of a belt line, with four cross lines, aggregating 10 miles in length, to be laid with 80 lb. steel on Rosser Ave., and 60 lb. steel on the other streets.

An offer has been made to the city council by J. D. McGregor, Brandon, on behalf of a British company to finance and build a street railway upon the basis of an equal division of profits between the company and the city. The matter was referred to the special committee which has the street railway matter in hand. (April, pg. 363.)

The British Columbia Electric Ry. Co. has secured control of a property at the corner of Carrall and Pender streets, Vancouver, B.C., for a future extension of its Hastings St. building. This gives the company control of the entire block.

The Board of Railway Commissioners has authorized the Vancouver, Fraser Valley and Southern Ry., controlled by the B.C.E.R., to connect its tracks with those of the B.C.E.Ry. at Park Drive, Vancouver, and at Eighth Ave., Sapperton, New Westminster.

The Point Grey municipal council was advised April 5, that an appropriation had been made for the buliding of a second track on the Vancouver-Eburne line, and that work would be started at an early date.

Application is being made to the company to arrange for the building of additional lines in various parts of the Vancouver-New Westminster district which are not served by existing lines.

The new wharf at New Westminster has been completed and track laid on it.

Press reports state that arrangements are being made for the building of a line from Victoria to Deep Cove, about 22 miles.

It is expected that power from the Jordan River plant will be delivered in Victoria, May 15. (April, pg. 363.)

Calgary Municipal St. Ry.—Construction on the extension of the municipally owned electric railway in Calgary, Alta., was started April 1. A large amount of the necessary material being on hand the work is reported to be progressing rapidly. (Mar., pg. 257.)

Cape Breton Electric Co.—It is proposed to build an extension to the company's power house in Sydney, N.S. A contract has been let for a 500 k.w., tube generator, 2,300 volt alternating current. (Feb., pg. 167.)

Dunnville, Wellandport and Beamsville Electric Ry.—The Ontario Legislature has extended the time for the building of the previously authorized lines, and authorized the building of an extension from Fenwick to Welland, Ont. (April, pg. 365.)

Edmonton Radial Ry.—The annual report of the city commissioners for Edmonton, Alta., for 1910, states that they would not recommend any extension of the street railway during the current year, but all efforts would be centred upon the improvement of the present system, it being understood that extensions commenced during the past year are to be completed as promptly as possible. It is planned to operate the cars on the single end plan, with Y's or loops at the end of the lines. Too much work was laid out last year for the time available considering the late date at which specifications for materials were issued. It is expected that the system as a whole will be in operation by Aug. 1. After careful study of the question of the distribution of power the commissioners have arrived at the conclusion that a sub-station would be most desirable for the economical system of feeders, and consequently recommend the purchase of a motor generator, to be installed at the present car barns, to take care of the feeder system at the east end, the power plant to supply direct current for the present for the central portion of the city, Strathcona and the west end. (Mar., pg. 257.)

Guelph Radial Ry.—The Ontario Legislature has extended the time within which certain branch lines may be built, and confirmed agreements with the Peoples Ry., respecting the building of that company's lines in the city of Guelph. (Mar., pg. 257.)

Halifax Electrical Tramway Co.—No action having been taken by the city council on the company's application to lay a second track on the belt line in Halifax, the company recently advised the Mayor that it was too late to do anything with the work this year. Permission was granted to build a line on Gottingen St., from Cunard to Young St., this year, and for which permission was asked. (April, pg. 365.)

Hamilton and Dundas Electric Ry.—The Manager of the Dominion Power and Transmission Co., has advised the Ontario Railway and Municipal Board, that a new substation will be completed early in June, which will enable the company to have all the power necessary to give an adequate service on the line. (Jan. 1909, pg. 53.)

Hamilton, Grimsby and Beamsville Electric Ry.—The company was granted permission by the city to begin relaying its tracks on Main St., Hamilton, on April 15, but prior to that date a deputation of Main St. residents asked the council to approach the company with a view to the abandonment of Main St., and the utilization of King St. east by the company for its line. The council agreed to do so, but W. C. Hawkins, General Manager, on behalf of the company, stated in an interview that the project was impracticable. (Jan., 1908, pg. 47.)

Hamilton St. Ry.—After a lengthened discussion the Hamilton city council decided to ask the company to transfer its tracks on Barton St., east, into the middle of the road and to double track Aberdeen Ave. and move back the poles there, or to put down an extension on Herkimer St. from MacDonald St. to Queen St, and to ask the company to allow it to use the radial subway under the Grand Trunk track. The company promised to consider the matter on May 1. The extensions proposed by the city would add about nine miles to the present 21 miles of road, and are estimated to cost $238,000. (April, pg. 365.)

The International Traction Railways, is the title of a company for which the authority of the Dominion Parliament is being obtained to take over the "estate, property, name, rights, privileges and franchises" of the International Ry. within Canada. The bill specifically provides that the rights of Ontario in respect of the Niagara Falls Park and River Ry., which forms part of the property taken over, shall in no way be affected. An act passed by the Ontario Legislature provides for the transfer of the line, and especially reserves its authority and the authority of the commissioners of the Queen Victoria Niagara Falls Park in respect of the Niagara Falls Park and River Ry. (Mar., pg. 257.)

London St. Ry.—Work is in progress in laying an additional track on the Dundas St. line, by the company, and the city is repaving the street. (Mar., pg. 257.)

Moncton Tramways, Electricity and Gas Co.—We are advised that work has been started upon the construction of a street railway in Moncton, N.B., Owing, however, to the severity of the weather, work was expected to proceed but slowly until well on in May, but we are informed the company expects to have the line opened for traffic in Nov.

The line under construction starts at the corner of King and Main Streets, proceeds along Main St., to High St., along High St. to Union St., with a branch along St. George St. to the Intercolonial Ry. tracks; a line extends from the King-Main St. corner along Union St. as far as Wilberforce St., and a third line starts from Main St., proceeds along

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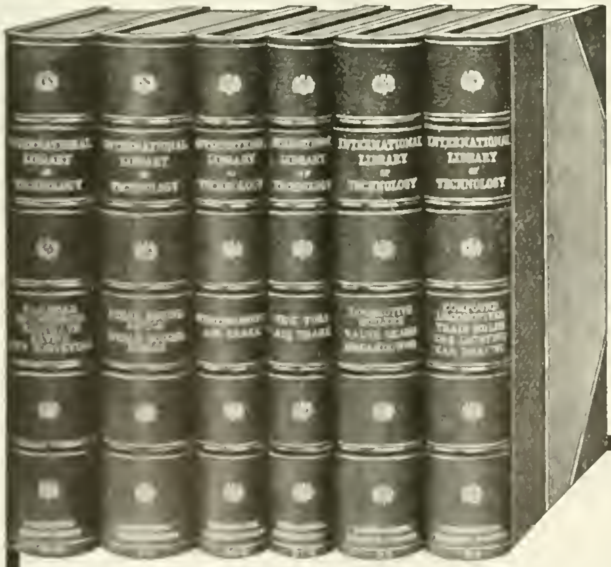

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Bon Accord St., St. George St., Robinson St., Railway Ave., Church St., Church St. extension, First Ave., and Shediac St., to the Humphrey golf links. (April, pg. 365.)

We were advised April 21 that work has been started with the erection of poles on King St. and Mountain Road. Under the terms of the agreement with the city the company is required to have not less than two miles of track equipped and in actual operation by Nov. 30. The total mileage of the system, as outlined, will be 6.5 miles. The track will be laid with 76-lb. rails, which have not yet been ordered. The company's power house will be located on Mechanic St., and at first coal will be used for fuel, but natural gas may be used in the near future instead. It is the ultimate intention of the company to instal gas engines in which natural gas will be consumed. The power plant will consist of two 150 k.w. generators. Tenders are under consideration for the supply of six single truck cars, with longitudinal seats, each capable of accommodating 22 people, and fitted with two series wound motors of 40 b.h.p. The resident engineer in charge of construction is W. G. Ritchie.

Montreal St. Ry.—The question of the renewal of the franchise came before the Montreal board of control April 18, when it was decided to write the company on the matter. It is expected that before any arrangement is made with the city, the four companies will be amalgamated under the title of the Montreal Tramways Co., as sanctioned by the Quebec Legislature. (See Montreal Tramways Co., April, pg. 359.)

Montreal Tramways Co.—The Quebec Legislature has incorporated a company with this title to construct and operate an underground railway through the Island of Montreal and Ile Jesus and Bizard, and other railways and tramways, and to acquire existing lines. The purpose of the company is to amalgamate the existing companies and to provide for the extension of the lines. After an agreement had been reached with the city of Montreal as to the existing contracts, certain amendments were made and the bill was allowed to pass. (April, pg. 359.)

Moose Jaw Electric Ry.—We are advised that tenders are being asked for the building of a power house and car barns. It was expected to start work early in April on the completion for operation of the track laid during 1910, and upon laying an additional three miles of track.

A. H. Dion, in a recent interview, stated that work on the Electric Ry. will be pushed to a completion as speedily as possible. Tenders are under consideration for the building of a power house and car barns. The engines and generators for the power house are ready, but will not be delivered until the power house is ready. A number of the cars are ready for shipment, and others are being built by the Ottawa Car Co. The portion of the lines built include a double track from the C.P.R. station to Oxford St., on Main St., and from Fourth Ave. to Main St., on High St. (April, pg. 365.)

Nelson St. Ry.—We are advised that during 1910, the company reconstructed the old line of two miles in Nelson, B.C., and built an extension of 1.25 miles. (Sept., 1910, pg. 781.)

Niagara Frontier Electric Ry.—The Ontario Legislature has incorporated a company with this title to build an electric railway from Niagara-on-the-Lake to Fort Erie, Ont. (April, pg. 365.)

Niagara, Welland and Lake Erie Ry.—The Dominion Parliament has incorporated a company with this title to build an electric railway. The route of the various lines, and the names of the provisional directors have already been published in this department.

A. P. Laughlin, one of the provisional directors, is quoted as having stated recently that arrangements are being made to start work on the building of an electric railway through Welland, Ont., at once, and to have it completed by the fall. (Mar. pg. 259.)

Ontario West Shore Ry.—Negotiations are in progress with the municipal council of Bayfield, Ont., for an extension of the line southerly from Goderich, Ont. (April, pg. 365.)

Ottawa and St. Lawrence Electric Ry.—The Ontario Legislature has extended the time within which this projected electric railway may be built. (Mar., pg. 259.)

Ottawa Electric Ry.—We are advised that it is the company's intention to lay a double track line on Preston St., from Somerset St., to Dow's Lake, 1.25 miles, this season. The work of relaying the present tracks on Sparks St. was expected to be started in April. No other construction is likely to be undertaken this year. (April, pg. 365.)

Ottawa, Smiths Falls and Kingston Ry.—A meeting of shareholders was held in Ottawa, April 12, when the following were elected directors:—F. A. Heney, Westboro, Ont.; T. A. Kidd, Burritt's Rapids, Ont.; J. F. Caldwell, City View, Ont.; G. L. Dickenson, Manotick, Ont.; and G. Boyce, Merivale. Arrangements were made with a view of raising the capital necessary for the building of the railway, and it was proposed to hold a series of meetings to secure financial aid in the municipalities through which the projected line will pass. (April, pg. 365.)

Port Arthur and Fort William Electric Ry.—R. S. Kelsch, Montreal, has been engaged in making preliminary surveys for extensions of lines in Fort William, Ont. (April, pg. 365.)

Peoples Ry.—The agreements made between the company and the Guelph Radial Ry., with respect to the construction of certain lines in the city of Guelph Ont., and their connection with the G.R.R. lines, have been confirmed by the Ontario Legislature. The Legislature has also granted the company an extension of time within which to build its previously authorized lines, and has given power for the building of additional lines. (Mar., pg. 259.)

Quebec and Island of Orleans Ry.—The Quebec Legislature has granted an extension of time for the building of the line already authorized, and has given the company power, if thought advisable, to build the line on the mono-rail system of construction. (Feb., pg. 169.)

St. John Ry.—The company's application to the New Brunswick Legislature for power to extend its lines in various directions has been amended by limiting the extensions to the parishes of Rothesay, Westfield and Hampton. (April, pg. 365).

St. Thomas Street Ry. — The St. Thomas, Ont., city council is being asked to approve of the submission to the taxpayers of a bylaw providing for the raising of $35,000 for the purpose of putting the line and the overhead construction in proper repair; to repair the present rolling stock, and to purchase three new cars. (Mar., pg. 261.)

Saskatoon, Sask. — Six propositions were submitted to the city council of Saskatoon, Sask., April 4, for the construction of an electric railway in the city. The propositions were submitted by E. J. Wenger and Co., Regina, Sask.; the interests behind the Moose Jaw Electric Ry., J. E. Hutchinson, Ottawa; Lyons and Shepard, Edmonton, Alta.; C. Meredith and Co., Montreal; C. C. Cohan, Montreal. The whole matter was referred to a special committee consisting of Aldermen Caswell, Willoughby and Harrison.

Sherbrooke Railway and Power Co.—The power plant has been completed and power was turned on about a month ago. The whole plant is of very fine construction. The completion of the railway within the city was expected to be taken up April 15. The new rails and special work have been ordered, and it is expected that the whole system will be completed by about June 15. When finished it will cover about 11 miles. Besides the branch to Lennoxville further extensions are under consideration. The Lennoxville line extends three miles from Sherbrooke, and forms a very important link, connecting Sherbrooke with Lennoxville, which is the seat of Bishops College University. (April, pg. 365..)

Toronto and York Radial Ry.—Application is being made to the Ontario Railway and Municipal Board to approve plan and profile of the proposed deviation of the Metropolitan division westerly off Yonge St.,* from the C.P.R. tracks, northerly to within a few feet of Balmoral Ave.

The building of the double track deviation near Mimico, on the Sunnyside-Port Credit line, is nearly completed, and the new bridge over the Mimico creek has been built. It is expected that the new piece of line will be connected up and put in operation by June.

The Ontario Legislature has amended the company's powers as to the construction of lines. (Mar., pg. 261.)

Toronto Civic Street Railway.—The city engineer was directed April 4 to prepare plans for a subway on Yonge St. from the Union Station to St. Clair Ave., in connection with the proposed civic street railway and tube system. It is expected that tenders will be asked for on the adoption of the plans, and that a vote of the ratepayers will then be taken as to construction.

The city solicitor has been instructed to prepare a report upon the question of the interchange of traffic between the Toronto Ry. lines and the civic lines. (April, pg. 365.)

Toronto Interurban Ry. Co.—The Ontario Legislature has incorporated a company with this title to build a railway to be operated by steam or electricity from Toronto to Newmarket, Ont. (Mar., pg. 261.)

Toronto Suburban Ry.—The Ontario Legislature has extended the time within which certain extensions of the company's present lines may be built, and has authorized the building of a line via Cooksville to Milton and Acton, Ont. The time extension allowed is one year, and the Legislature did not grant the increase of capital stock, or power to build all the extensions asked for.

The committee had engineers out over the routes of proposed lines which should be built within the year's extension granted, April 5, and the following week. (Mar., pg. 261.)

Windsor, Essex and Lake Shore Rapid Ry.—A Chatham, Ont., press report states that J. Piggott says the company is planning to extend its line from Chatham to London, and that for the purposes of construction an issue of bonds will be placed on the London, Eng., and Paris, France, markets.

Winnipeg Electric Ry.—The city council, April 12, passed a resolution asking the company to at once file plans for various extensions of lines in the city, and for certain second track work. The material has been delivered for the new belt line on Princess and Donald streets from the C.P.R. tracks to Broadway, for the purpose of relieving the traffic on Main St. The work is expected to be completed early in July. (Mar., pg. 261.)

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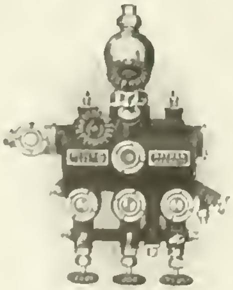

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Electric Ry., Finance, Meetings, Etc.

British Columbia Electric Ry.—Applications for the recent issue of £600,000 4¼% perpetual consolidated debenture stock, were received during April. Of the issue 5% was due on application, 10% on allotment, 20% on Apr. 27, and 30% is due on June 6, and 35% on July 10. The proceeds are required for general purposes, and for extensions necessitated by increasing business. The stock ranks parri passu with the present perpetual consolidated debenture stock, which is secured by a first mortgage on the whole of the assets and undertakings, subject to existing mortgages and charges issued to secure the £228,400 first mortgage debentures and £110,600 Vancouver Power Co.'s debentures now outstanding. The interest dates are Mar. 31 and Sept. 30 each year, the principal being irredeemable. On the present showing, the company's net earnings will be sufficient, after paying all charges, to pay its debenture interest three times over.

Gross earnings for Feb. $348,332; operating expenses, $212,239; operating earnings, $136,093; renewal funds, $29,770; net earnings, $106,323; approximate income from investments, $20,000; net income, $126,323, against $237,756 gross earnings; $139,884 operating expenses; $97,872 operating earnings; $17,852 renewal funds; $80,020 net earnings; $16,500 approximate income from investment; $96,520 net income for Feb., 1910. Aggregate gross earnings for eight months ended Feb. 28, $2,708,734; net earnings, $1,096,775, against $1,968,901 gross, and $861,148 net for same period 1909-10.

Calgary Municipal St. Ry.—Passenger earnings for Mar., $22,493.10; miscellaneous earnings, $323.15; total earnings, $22,816.25; operating expenses, maintenance of way and structures, $385.05; maintenance of equipment, $1,075.10; transportation, $9,490.92; general expenses, $687.46; total operating expenses, $11,639.53; net operating revenue, $11,176.72; contingent account, 5% gross receipts, $1,140.81; interest and sinking fund, $2,715.88; net profits, $7,320.03.

Halifax Electric Tramway.—Railway receipts for Mar., $16,129.49, and for two weeks ended Apr. 14, 7,661.62, against $15,966.97 and $7,303.94 for same periods 1910.

London Street Ry.—Experts were in the city making a valuation of the plant of the L.S.R., and of the London and Lake Erie Ry. and Transportation Co. line recently, and it is stated that an offer will be made for these two lines on behalf of a syndicate which is arranging for a merger of all the electric lines in Western Ontario, as predicted in these columns nearly two years ago.

Gross earnings for Mar., $21,175.20; expenses $15,370.73; net earnings $5,804.47; deductions, $2,441.75; net income, $3,362.72, against $20,451.80 gross earnings; $14, 762.17 expenses; $5,689.63 net earnings; $2,441.75 deductions; $3,247.88 net income for Mar. 1910. Aggregate gross earnings for three months ended Mar. 31, $61,080.86; expenses $45,065.94; net earnings, $16,041.92; deductions, $7,000.05; net income, $8,925.80, against $56,164.74 aggregate gross earnings; $41,467.30 expenses; $14,697.44 net earnings; $7,089.00 deductions; $7,608.39 net income for same period 1910.

Montreal and Southern Counties Ry.—The Dominion Parliament has authorized the G.T.R. to acquire, and deal with the capital stock, bonds and other securities issued by the M. & S.C.R. Co.

Montreal St. Ry.—Passenger earnings for Feb., $326,628.34; miscellaneous earnings $4,109.33; total earnings $330,737.67; operating expenses $227,604.44; net earnings $103,133.23; city percentage on earnings $21,024.29; interest on bonds and loans $15,642.58; rent leased lines $607.10; taxes $4,700; total charges $41,973.97; surplus $61,159.26; expenses per cent. of earnings 68.82; for March, passenger earnings $368,079.75; miscellaneous earnings $3,912.68; total earnings $371,992.43; operating expenses $234,484.22; net earnings $137,508.21; city percentage on earnings $25,616.79; interest on bonds and loans $15,498.86; rent leased lines $607.10; taxes $4,700; total charges $46,422.75; surplus $91,085.46; expenses per cent. of earnings, 63.03; against $300,029.83 passenger earnings; $3,947.43 miscellaneous earnings; $303,977.26 total earnings; $204,255.58 operating expenses; $99,721.68 net earnings; $20,487.50 city percentage on earnings; $14,834.90 interest on bonds and loans; $552.89 rent leased lines; $4,000 taxes; $39,875.29 total charges; $59,846.39 surplus; 67.19 expenses per cent. of earnings, for Feb., and 332,781.05 passenger earnings; $3,415.54 miscellaneous earnings; $336,196.59 total earnings; $220,790.08 operating expenses; $115,406.51 net earnings; $21,484.65 city percentage on earnings: $14.637.64 interest on bonds and loans; $552.90 rent leased lines; $4,000 taxes; $40,675.19 total charges; $74.731.32 surplus; 65.67 expenses per cent. of earnings, for March, 1910. Aggregate total earnings for six months ended Mar. 31, $2,202,914.87; operating expenses $1,370,472.62; net earnings $832,442.25; total charges $229,205.39; surplus $603,236.86; expenses per cent. of earnings 62.21, against $1,992,236.21 aggregate total earnings; $1,216,984.37 operating expenses; $775,251.84 net earnings; $212,585.76 total charges; $562,666.08 surplus; 61.09 expenses per cent. of earnings, for same period 1909-10.

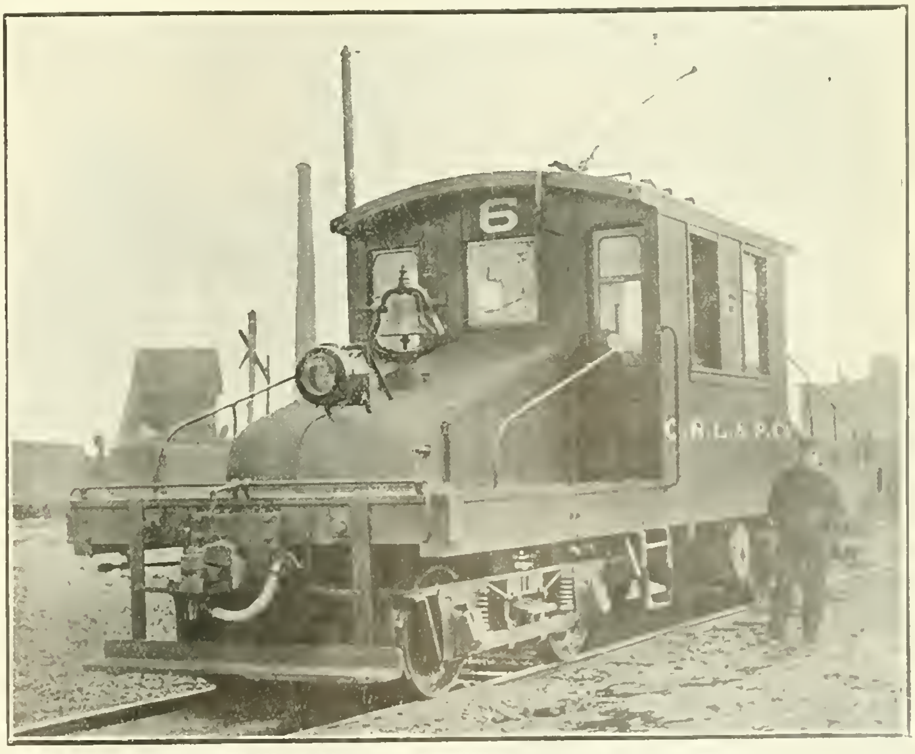
Toronto Ry.—Gross earnings for Feb., $335,010; operating expenses $181,933; net earnings $153,077, against $305,617 gross earnings; $167,085 operating expenses; $138,532 net earnings for Feb., 1910. Aggregate gross earnings for two months ended Feb. 28, $693,854; net earnings $322,484, against $632,265 gross and $290,165 net for same period, 1910.

Winnipeg Electric Ry.—Gross earnings for Feb., $309,500; working expenses, $162,074; net earnings, $147,126, against $261,864 gross earnings; $133,270 working expenses; $128,594 net earnings for Feb., 1910. Aggregate gross earnings for two months ended Feb. 28, $655,644; net earnings, $305,221, against $559,408 aggregate gross earnings and $271,941 net earnings for same period 1910.

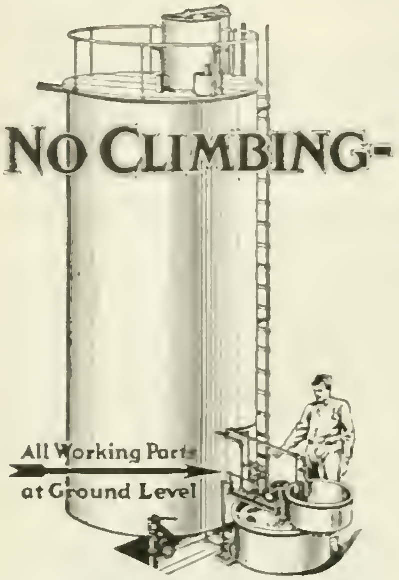
◆

Q.R.L. & P. Co's. Electric Locomotive.

The Quebec Railway, Light & Power Co. has recently built at its own shops at Ste. Anne de Beaupre a new electric locomotive for its Montmorency division. The company plans to build a number of other locomotives of the same type and to do away entirely with steam operation on the division. The dimensions of the locomotive are: Length over all, 34 ft.; width, 8 ft. 8 ins.; weight, 59.300 lbs.; diameter of driving wheels, 33 ins.; wheel base of each truck, 6½ ft.; total wheel base, 28 ft. 8 ins.; axles, 4½ ins.; journals, 7x3½ ins.; gauge of track, 4 ft. 8½ ins. The axle carries a motor wound for 600 volts. The flanges, journals and boxes are of M.C.B. standard. The longitudinal frame consists of two outside pitch pine sills 12x5 ins., and four inside sills 9x4½ ins. Steps are provided at each end on the sides. The body bolster is of wrought iron. The cab is of wood, size 11 ft. by 8½ ft., with two windows 30 by 28 ins. on each side, and one at each end of the same size. There are also two glass doors at the end. Hoods at each end of the cab cover the resistance and other electrical equipment. The locomotive is fitted with a hand brake on all the wheels, also with the Westinghouse automatic air brake. The equipment includes a bell and whistle. The gear ratio is 14:68, gives a normal speed of 18 miles an hour, and on a level carries 400 tons at a speed of 10 miles an hour. The locomotive carries a quadruple equipment of four no. 56 Westinghouse railway motors, having a nominal rating of 55 h.p. each, total of 220 h.p. at 600 volts. Standard nose suspension is used. The one K34 controller is located in the centre of the cab.



Quebec Railway, Light and Power Co.'s Electric Locomotive.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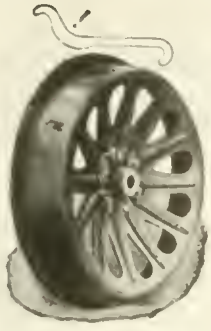

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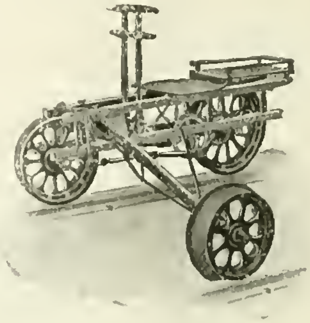

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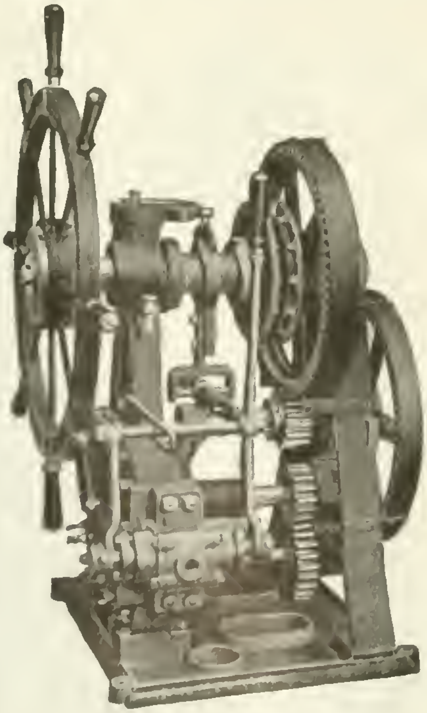

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Nipissing Central Railway.

An arrangement has been made by the Temiskaming and Northern Ontario Ry. Commission for the purchase of the Nipissing Central Ry., a five mile railway running from Haileybury, on Lake Timiskaming, to North Cobalt. The price to be paid, it is stated, is $250,000, the purchase being made from D. Fasken, Toronto, representing the company. The railway has done a large amount of business.

The N.C. Ry. Co. was incorporated by the Dominion Parliament in 1907, the provisional directors being: J. W. Fitzpatrick, F. R. Latchford, Ottawa; B. F. Pearson, Halifax, N.S.; G. A. Browning, North Bay, Ont.; G. Taylor, New Liskeard, Ont.; M. J. O'Brien, Renfrew, Ont.; H. L. Dunn, Toronto; G. F. Duncan, Portland, Me.; J. J. Whipple, Brockton, Mass. In the following year an amending act was passed in which E. J. Daly, Ottawa, replaced F. R. Latchford; Hon. D. McKeen, Halifax, replaced B. F. Pearson, and C. M. Stone, Cleveland, Ohio, replaced J. J. Whipple as provisional directors. The company was authorized to build two lines starting at Latchford, Ont., and extending to the National Transcontinental Ry., the junction point of one line being fixed in the act near the Metagami River; a line from Latchford to Timagami station on the Temiskaming and Northern Ontario Ry., and various branch lines serving the whole of the intervening district. The company was given authority to develop water powers, generate and distribute electricity, to operate steam and other vessels, and to enter into agreements with the G.T.R., the G.T. Pacific Ry., or the T. and N.O. Ry. Commission for any of the purposes specified in sec. 361 of the Railway Act.

Franchises were granted April, 1909, by the Haileybury, and Cobalt municipalities and by the township of Bucke, for the building of an electric railway between Cobalt and Haileybury, a distance of about five miles; preliminary work on construction was started, and a contract was let to the Lindsay Construction Co. for building the line. Grading was completed about the end of Oct., and the line was completed by the end of March, 1910. The line was passed for operation by the Government engineers April 12, 1910, and a regular half-hour passenger service was inaugurated April 30. Four cars were delivered in Oct., 1909; four trailers and a locomotive were subsequently ordered, the latter to be used for hauling the cars, pending the completion of the electrical plant.

Surveys were made in Aug., 1910, for the extension of the line from Cobalt to Kerr Lake, and in the following month a franchise was granted for an extension of the line from Haileybury to Liskeard.

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Electric Railway Notes.

The Ottawa Electric Ry., has received two pay-as you-enter cars, 45 ft. long over all, mounted on 27-G-1 trucks from the Ottawa Car Co.

The Edmonton Radial Ry. has received four 28 ft. pay-as-you-enter cars, mounted on 27-G-1 trucks, 44½ ft. over all, from the Ottawa Car Co.

The Moose Jaw Electric Ry., has received two single truck semi-convertible pay-as-you-enter cars, mounted on 21-E trucks, from the Ottawa Car Co.

The Berlin and Waterloo St. Ry., and the Galt, Preston and Hespeler St. Ry., are now receiving their power from Niagara, over the Hydro-Electric Commission line.

The Montreal and Southern Counties Ry. has ordered one electric motor combination passenger and baggage car, and one electric motor flat car, to be built at the G.T.R. Montreal shops.

The Peterboro Radial Ry. has ordered three single truck pay-as-you-enter cars, mounted on 27-E trucks, and one double broom snow sweeper, from the Ottawa Car Co., for delivery by July 15.

J. E. Hutcheson, Superintendent and Purchasing Agent, Ottawa Electric Ry., on his return to Ottawa from the west, Apr. 10, is reported to have said that early in May the company hoped to put in operation 20 new p.a.y.e. cars.

One of the six pay-as-you-enter type of cars being built for the Moose Jaw, Sask., Electric Ry., by the Ottawa Car Co., was exhibited in Ottawa, April 18. It is similar to those in use on the Bank St. line in Ottawa, with the exception that instead of four cross seats at the back, there are two longitudinal seats. The same seating capacity is provided, but there is greater standing room.

The Calgary Municipal St. Ry. has awarded contracts for the supply of a 1,600 k.w. turbo-generator set with condenser, etc., to Allis-Chalmers-Bullock, Ltd., Montreal, and for a 100 k.w. exciter and switchboards, to the Canadian Westinghouse Co., Ltd., Hamilton, Ont. Allis-Chalmers-Bullock, Ltd., will also have charge of the removing and reerecting of the boilers from the power house to Victoria Park, and such other necessary work as is required.

The Nova Scotia Legislature has passed an act providing that in all matters regarding extensions of electric railways, whether proposed by the city council, or the company, in case of disagreement, the Board of Public Utilities shall be the court of appeal. The Board shall have power to regulate frequency of service, ventilation of and heating of cars, etc. Hitherto the Board had control only of telephone, lighting and power companies. The Cape Breton Electric Co., and the Pictou County Electric Co., which have electric railways at Sydney, and New Glasgow, respectively, have been exempted from the operations of the act.

An application which had previously been made to the Board of Railway Commissioners for leave to prosecute the London and Lake Erie Ry. and Transportation Co. for operating its cars on Sundays, and dismissed, was made to the Ontario Railway and Municipal Board recently. The Chairman, J. Leitch, K.C., in delivering judgment, said that there was no dispute as to the facts. The company, which operates an electric railway between London and Port Stanley, Ont., through St. Thomas, was incorporated by the Dominion Parliament, but under sec. 9 of the Railway Act it comes under provincial jurisdiction so far as operating cars on Sundays is concerned. Nothing in the act, however, applies to any railway which forms a part of a continuous system between any of the ports of the Great Lakes, nor does it apply if the Governor General proclaims it to be exempt. It has not been contended that the company has been declared exempt, and the question is whether or not it forms part of a continuous system between Ontario and the U.S. The Board is of opinion that very important questions of law and fact are involved, and does not feel like closing the doors of the court on the applicant. If it is found that the company has not violated the law, then the applicant will suffer the penalty of costs which the courts impose. The application was granted, no order being made as to costs. It is stated that should this case be successful from the applicant's point of view, other actions will be taken against companies running cars on Sundays under similar conditions.

Sandwich, Windsor and Amherstburg Ry.

The Detroit United Ry. Co.'s annual report for the year 1910 embraces all the subsidiary companies, including the Sandwich, Windsor and Amherstburg Ry., of which the following particulars are given: Mileage, 36,060; interest on funded debt, $34,000; revenue passengers, 3,261,664; transfer passengers, 429,383; employe passengers, 20,269; total passengers. 3,711,316; mileage statistics, car mileage, 856.186; earnings car mile .2165; expenses, .1115; net earnings, .1050. In extending the S.W.A.R. lighting plant and addition to power house $55,113.16 was expended. Under investments, the S. W. & A. R. is given as $253,134.91, and under accounts current, $200,503.57.

Balance Sheet, Sandwich, Windsor and Amherstburg Ry.

Capital stock		$ 297,000.00
Mortgage bonds		490,000.00
Accrued interest on bonds		4,987.50
Detroit United Railway		200,503.57
Accounts payable		5,831.38
Injuries and damages reserve		1,333.92
Insurance reserve		797.84
Accrued taxes		304.73
Unredeemed tickets		3,073.58
Profit and loss		18,096.56
Investment	$1,000,057.14	
W. & T.E. Ry. Co. (stock)	10,000.00	
W. & T.E. Ry. Co.	9,553.79	
Accounts receivable	905.35	
Stores	1,203.82	
Cash	208.98	
	$1,021,929.08	$1,021,929.08

Balance Sheet, Windsor and Tecumseh Electric Ry. Co.

Capital stock		$ 100,000.00
Mortgage bonds		189,000.00
Sandwich, Windsor and Amherstburg Ry.		9,553.79
Investment	$298,553.79	
	$298,553.79	$298,553.79

The earnings and expenses of the Windsor & Tecumseh Electric Ry. are included in the operations of the Sandwich, Windsor & Amherstburg, Ry., which latter company owns all of the capital stock of the W. & T.E.R.

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Ontario Electric Railway Legislation.

The Ontario Legislature passed the following Act at its recent session:

The Ontario Railway and Municipal Board Amendment Act, 1910, is amended by adding thereto the following sections:

"11. All tracks, switches, additional lines and extensions of existing lines which are, have been or shall be hereafter constructed and operated by a street railway company in pursuance of an order of the board, shall nevertheless be deemed to have been constructed under the authority, and shall be subject to all the provisions of the agreement between the company and the corporation of the municipality, or the bylaw of the council thereof, by which authority to construct the railway was conferred upon the company.

"12. It was not intended by the said Act to confer, and it did and does not confer upon the board power or authority to require or to permit a railway company, or a street railway company, without the consent of the corporation of the municipality, to construct or lay down within the municipality more tracks or lines than under its agreement with the corporation or the bylaw of the council of the corporation of the municipality by which authority to construct the railway upon any such street or highway or part of a street or highway was conferred, it has authority to construct or lay down, but the agreement or bylaw shall govern as to the number and location of the tracks and the streets or highways upon which the railway may be constructed."

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The Nova Scotia Legislature has passed an act respecting street railways within the province, and another one authorizing the granting of aid to electric railways.

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Portland to Liverpool—Winter
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Sailing from New York regularly.

WHITE STAR LINE

New York—Liverpool—Queenstown
Sailing from New York Saturdays.
N.Y.—Plymouth—Cherbourg—Southampton
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Boston—Queenstown—Liverpool
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MARINE DEPARTMENT

Dominion Marine Association.

President, F. Plummer, Toronto; Counsel, F. King, Kingston, Ont.

Great Lakes and St. Lawrence River Rate Committee.

Chairman, E. E. Horsey, Kingston, Ont.
Secretary, Jas. Morrison, Montreal.

International Water Lines Passenger Association.

President, W. M. Lowrie, New York.
Secretary, M. R. Nelson, New York.

The Shipping Federation of Canada.

President, A. A. Allan, Montreal; Manager and Secretary, T. Robb, 526 Board of Trade, Montreal.

Ship Masters' Association of Canada.

Grand Master, Capt. J. H. McMaugh, Toronto, Ont.; Grand Secretary-Treasurer, Capt. H. O. Jackson, 376 Huron St., Toronto.

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Coast Lake and River Officers for 1911.

The following appointments have been made by the principal navigation companies engaged in Canadian navigation, for their various steam vessels and tugs for the current year, in addition to those mentioned in our April issue. In the first column is given the name of the vessel, in the second, that of the captain, and in the third, that of the chief engineer:—

THE CANADIAN FISHING CO., LTD., VANCOUVER, B.C.

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Flamingo	A. Freeman	W. Britton

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Columbia	W. H. Wright	K. Carlson
Hosmer	F. L. Orr	W. Jacobs
Kaleden	D. C. McMorris	J. Walker
Kokanee	L. McKinnon	D. H. Biggam
Kootenay	L. H. Fraser	T. F. McKechnie
Kuskanook	W. Seaman	J. G. Cameron
Minto	A. Forslund	N. Hawthorne
Moyie	G. Robertson	D. McLeod
Okanagan	G. L. Estabrooks	J. Grey
Proctor	J. Fitzsimmons	H. Pierce
Rossland	O. J. Alfsmo	J. Fyfe
Sandon	G. Graham	J. Donaldson
Slocan	W. Kirby	H. Colbeck
Valhalla	J. Ferguson	T. C. I. Anson
Whatshan	J. Dougal	J. Russel
York	M. Reed	S. Peterson

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British Columbia	G. Foellmer	D. Macdonald
Celtic	N. S. Nilson	T. Kay
Clansman	W. Hewson	J. McIsaacs
Fingal	J. Finlay	M. Learreta

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Filgate	H. Caza	A. Cote

DOMINION FISH CO., LTD., OWEN SOUND, ONT.

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Manitou	N. J. McCoy	W. Rennie

FRENCH RIVER AND NIPISSING NAVIGATION CO., LTD., STURGEON FALLS, ONT.

Elgin L. Lewis	E. Muir	J. Kelso
Highland Belle	—. Johnston	E. Clarke
Northern Belle	J. A. Clark	J. Coventry

GREAT LAKES AND ST. LAWRENCE TRANSPORTATION CO., CHICAGO, ILL.

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Geo. C. Howe	F. H. Hoffman	J. R. Jones
H. G. Dalton	H. L. Jones	C. E. Crampton
John Crerar	J. B. Rinn	Jas. Elliott
John Lambert	W. Rinn	J. Gallarno
J. S. Keefe	D. Barry	G. Squier
Robt. Wallace	J. A. Connelly	J. Young
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St. Antoine	G. Willer	T. Arbin
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Northland Star	J. Bird	....
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Montreal	F. X. Lafrance	G. Gendron
Murray Bay	W. Gague	G. Gagnon
Quebec	L. R. Demers	J. Hamelin
Rapids King	G. Batten	J. A. Crepeau
Rapids Prince	S. Putnam	W. Chipman
Rapids Queen	J. Stephenson	W. S. Parker
Rochester	J. Owens	J. Cummings
Ste. Irenee	J. Dugal	N. Beaudoin
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Castor	D. Farquharson	B. Lavoie
E. H. Bronson	J. C. Merchant	J. Trottier
G. B. Greene	J. Chartier	G. Noel
G. B. Pattee II.	A. D. Smith	J. Andrecheck
Hamilton	W. J. Toner	R. Spooner
Hiram Robinson	J. Ricard	A. Savagean
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Quinte Chief	E. Hanley	F. Reuport
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Montreal Harbor Improvements.

The Montreal Harbor Commissioners' improvement programme for the present season, comprises the completion of the no. 2 elevator, with a capacity of 1,772,000 bush.; the preparation of the site for the proposed dry dock; and the completion of ten additional miles of high level railway with sidings. Increased accommodation will be given for ocean going vessels, by the re-modelling of the Victoria pier, which when completed will have 2,700 ft. of high level permanent quay with five double decked re-inforced concrete sheds and grain conveyor equipment. The inner side will be 4,800 ft. long, and a jetty 500 ft. long will provide accommodation for the Richelieu and Ontario Navigation Co.'s vessels. With this extension of the Victoria pier, it is considered necessary to divert the flow of the St. Mary's current, which will be accomplished by an addition to the south of the down stream end of the Mackay pier, as well as by dredging a channel to the south of St. Helen's island. A number of old sheds will be removed near the elevator, to make room for the office building for the traffic and elevator staffs. A concrete ferry wharf is also to be built at St. Helen's island, about 265 ft. long. The work of preparation of the site for the dry dock, includes the dredging of a basin 50 ft. deep, the filling of about 20 acres of reclaimed land, the erection of quay walls for the reception of the floating dock, and preparing for the erection of the shipbuilding plant. The building of the high level railways, which was commenced last season, will be continued as far as Racine pier this year. There will be 11 concrete subways to allow passage to and from the docks. The foundations of the elevators were laid last year, and are for a building 314 by 100 ft., and 230 ft. high, having accommodation for 1,772,000 bush., and provision will be made for a further 800,000 bush. capacity should it be rendered necessary. The receiving capacity will be at the rate of 40,000 bush. an hour from vessels, and 24 cars an hour, while it will provide for the transfer of 45,000 bush. an hour to ocean going vessels. There will also be a cleaning plant with a capacity of from 3,000 to 6,000 bush. an hour, and a drying plant of 500 to 700 bush. capacity. The elevator was designed by the John S. Metcalf Co., Ltd., Montreal. There

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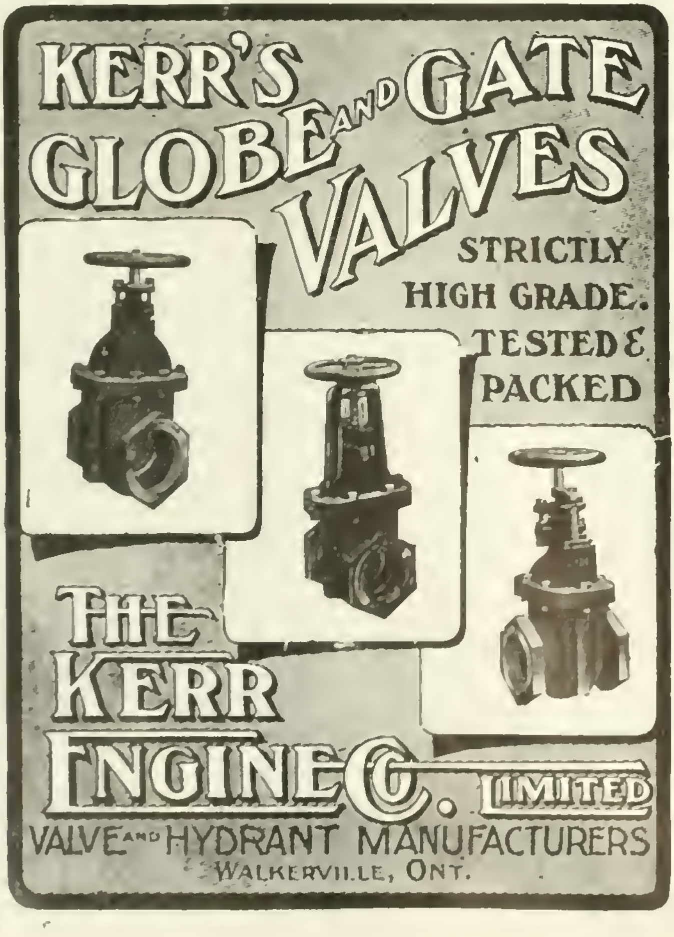
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will also be completed this season, a marine tower jetty, or pier, 400 ft. long, of solid crib work substructure and concrete superstructure with a quay wall, in front of the elevator, with a mile of railway track connected. The Commissioners have acquired the dredging plant, formerly operated by F. Gilbert, and a seven yard dredge has been built at the harbor shops, where another is under construction. A light draught twin screw steam tug, to be named John Young, is approaching completion, and an ice breaking steam tug for towing and inspection purposes, to be named Sir Hugh Allan, is being built at Barrow-in-Furness, Eng., and is expected to sail for Montreal in June. The erection of additional workshops and storage warehouses, with connecting sidings, and two single story concrete sheds, will also be undertaken.

The Canada Shipping Act.

The Dominion Parliament is being asked to amend the Canada Shipping Act in several details. It is desired to bring it into conformity with Imperial legislation by making it unnecessary for the vessels of the naval service, with the exception of the those engaged in the hydrographic surveys, and the fisheries protection service, to be registered. As regards sick mariners the new measure makes it clear that contributions to funeral expenses shall be paid out of the fund created under the act. and that collectors of customs who collect the dues under the act, shall report more frequently than they do at present.

An important change is made concerning pilotage in the St. Lawrence. It was proposed to make pilotage in the St. Lawrence, and in all parts of Canada where pilotage exists, compulsory. At present, pilotage is not compulsory in the St. Lawrence, although the payment of pilotage dues is. This provision is being made as the result of conferences which have taken place between the Department and the various shipping interests. The provision applies to all vessels of over 10 ft. draught; all sea going vessels must take pilots, and others need not do so, if they are provided with masters and mates who have passed the necessary examination qualifying them to run a vessel in the St. Lawrence channel. It is also proposed to include the St. John pilotage authority, and the Minas Basin pilotage authority, and the those authorities which are at present allowed, under existing legislation, to force all vessels engaged in the coasting trade to take pilots.

The measure also extends the period within which investigations into wrecks may be ordered from a month to a year; to permit the holding of the position of inspector of hulls, and inspector of machinery by the same person, if duly qualified; to permit of an appeal to the House of Lords or to the Privy Council in cases where the certificate of a sea-going master or mate is cancelled by the Wreck Commissioner, and to authorize the dispensation of inspection of boilers and hulls of vessels certified by British or foreign authorities. This latter provision is to be subject to the authority of the Governor-General, who shall define what certificates shall be accepted. Power is also taken in the measure to regulate traffic in the St. Lawrence channels, and provision is also made for obtaining the sanction necessary under the Imperial Shipping Act of 1894 for any Canadian legislation which might conflict in words, if not in fact, with the Imperial legislation. This Imperial act of 1894 provided that the self-governing colonies could enact their own shipping legislation, provided that the several acts were approved by the King-in-Council before they became operative.

The bill was read a second time, April 5, and was then referred for special consideration to the Committee on Marine and Fisheries, before which all interests affected by the bill will appear and state any objections they have to its becoming law. So far as the Dominion Marine Association is concerned, its position is that it does not offer any serious objection to the proposal to render pilotage as well as payment of dues compulsory in the two districts named, the proposal being considered preferable to the existing state of affairs. While this is the most important point of the bill there are, we understand, certain of the clauses in the bill as it stands, which require to be amended so as to bring them more in accord with the views of the marine men.

A deputation of those interested in the proposals contained in the bill, including Francis King, representing the Dominion Marine Association, and F. E. Meredith, K.C., on behalf of the Shipping Federation of Canada, waited on the Minister of Marine, Apr. 25. The Minister explained that the shipping interests of Ontario had complained there was discrimination in favor of the Maritime Provinces and Quebec, and the Dominion Marine Association had asked that the compulsory pilotage proposals be eliminated from the bill, and the law stand as it was. This was agreed to by the Shipping Federation of Canada, and all the pilotage clauses, so far as they related to the St. Lawrence, would be struck out.

Notices to Mariners.

The Department of Marine has issued the following:—

29. Mar. 24.—68. General, buoyage, shapes of tops of spars. 69. New Brunswick, east coast, Pokemouche gully, hand fog horn at light station. 70. Quebec, River St. Lawrence, Montreal harbor, Ile Ronde, lighthouse increased in height.

30. Mar. 27.—71. Quebec, Ottawa River mouth, Lake St. Louis, improvement of channel, rearrangement of lights and buoys.

31. Mar. 30, 72. Quebec, Ottawa River, Rigaud river entrance, range lights established, lighted buoys discontinued, buoys re-arranged. 73. United States of America, Lake St. Clair, St. Clair flats canal, gas buoy to be established. 74. United States of America, River St. Clair, St. Clair middle ground, gas buoy to be established. 75. United States of America, River St. Mary, Sweets point shoal, gas buoy to be established, light and buoy to be discontinued. 76. United States of America, River St. Mary, Mud lake, Pointe aux Frenes, gas buoy to be established. 77. United States of America, River St. Mary, Sailors' Encampment, gas buoy to be established, float lights to be discontinued.

32. Mar.31. 78. British Columbia, Queen Charlotte Islands, Moresby island, Selwyn inlet, Pacofi, hydrographic information, private buoys. 68. General, buoyage, shapes of tops and spars.

33. Apr. 1.—79. Quebec, River St. Lawrence, survey steamer at work in the vicinity of Father Point and Bicquette island, caution. 80. Quebec, River St. Lawrence, Bic island and vicinity, hydrographic information, anchorages. 81. Quebec, River St. Lawrence, Escoumains, anchorage, wharf.

34. Apr. 4.—82. New Brunswick, Miramichi River, beacons between Newcastle and northwest arm. 83. England, west coast, Wales, Fishguard approach, light and submarine bell buoy established.

35. Apr. 12.—84. Ontario, Lake Huron, Goderich harbor entrance, buoyage. 85. Ontario, Muskoka Lake, east side, Muskoka River, lights established.

36. Apr. 13.—86. Nova Scotia, south coast, Shelburne, light established. 87. Prince Edward Island, Northumberland Strait, gas and whistling buoy in mid-strait between Tryon shoal and Tormentine reefs withdrawn. 88. Prince Edward Island, Northumberland Strait, west reef, whistling buoy replaced by gas and whistling buoy. 89. Prince Edward Island, North Point reef, whistling

LIST OF STEAM VESSELS REGISTERED IN CANADA DURING MARCH, 1911.

Name	No.	Where and When Built.	Engines, etc.	Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
Alaskan......	130,445	Onetta, Ore , 1886	Screw 13 n. h. p..	96.5	19.0	7.1	150	102	Vancouver, B. C....	A. M. Tyson, Vancouver, B.C.
Cartier	129,745	Newcastle, Eng., 1910	" 141 " ..	164.0	29.2	13.1	556	234	Ottawa, Ont.........	Minister of Marine, Ottawa, Ont.
Kinburn	126,828	Mahone Bay, N.S , 1910	" 28 " ..	104.2	24.6	10.5	168	79	Lunenburg, N.S.. ..	A. Ernst, M.O , Mahone Bay, N.S.
Lena Mac .	126,070	Portage, Lot 36, P.E.I., 191	" 15 " ..	33.5	12.2	5.4	12	11	Charlottetown, P.E.I.	J. A. McDougall, Kingston, P.E.I.
Minouch.....	126,928	Roberval, Que., 1908	" 20 " ..	85.0	8.0	2.8	11	7	Quebec, Que.	S. Cimon, Roberval, Que.
Princess Mary	126,950	Paisley, Scotland. 1910. ...	" 194 " ..	210.0	40.1	14.0	1697	1011	Victoria, B.C.........	C.P.R. Co., Montreal
Rosamond Billett	130,272	Winnipeg, Man., 1910	" 56 " ..	163.0	40.0	9.6	679	474	Winnipeg, Man	Hugh Sutherland, Winnipeg, Man.
Viner	130,443	North Vancouver, B.C., 1911	" 6 " ..	45.7	14.5	5.7	24	16	Vancouver, B.C.	Knight Inlet Canning Co., Vancouver, B.C.
Winnetka	130.444	Vancouver, B C., 1907	" 1 " ..	24.5	8.6	2.2	7	5	" "	A. Watt and E. H. Dunwoodie, Vancouver, B.C.

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA DURING MARCH, 1911.

Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners
Ainslie...........	130343	Liverpool, N.S., 1911........	Schr.	112.4	26.9	10.0	148	Liverpool, N.S.......	Hendry Ltd., Liverpool, N.S.
Harry W. Adams.	130461	Lunenburg, N.S., 1911	"	107.8	25.8	10.5	99	Lunenburg, N.S.	H. W. Adams, M.O., Lunenburg, N.S.
Lady Mine.......	126951	Port Ludlow, Wash., 1880.....	"	76.0	21.9	8.4	55	Victoria, B.C.	R. C. Hall et al, Victoria. B C.
Mark Twain	126829	Lunenburg, N.S., 1910	"	42.8	10.6	5.6	12	Lunenburg, N.S....	W. Wight, Blue Rocks, N.S.

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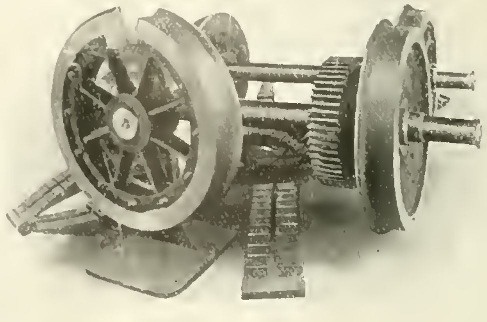

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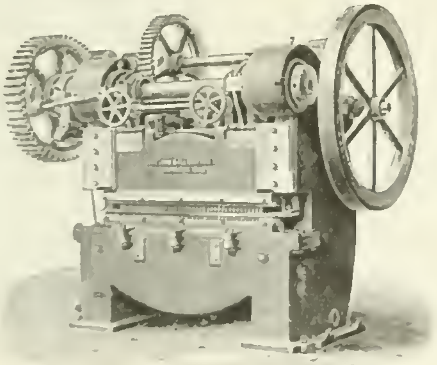

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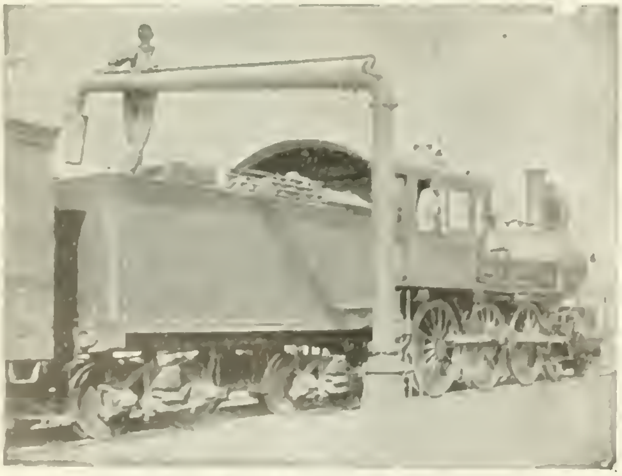

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buoy established. 90. England, west coast, Scilly Isles, Bishop rock, bell buoy established.

37. Apr. 18.—91. Quebec, River St. Lawrence, Chat river, daymarks attached to range light poles. 92. Quebec, River St. Lawrence, Ste. Irenee, temporary light. 93. Quebec, River St. Lawrence, Channel patch, gas buoy established. 94. Quebec, River St. Lawrence, ship channel between Quebec and Montreal, Ile a la Aigle, gas buoy established. 95. Quebec, Montreal harbor, Forsyth shoal, buoy established. 96. Quebec, River St. Lawrence, Montreal, day beacon erected to mark St. Lambert steamboat channel, buoy discontinued.

38. Apr. 18.—97. British Columbia, Strait of Georgia, Welcome pass, Welcome point, buoy in position. 98. British Columbia, Beaver passage, Connis islet, gas lighted beacon established.

39. Apr. 18.—99. Ontario, Lake Huron, Port Elgin, bearing of north range lights. 100. Ontario, Georgian Bay, Giant's Tomb island, Bennet bank, change in position of buoy. 101. Ontario, Georgian Bay, east side, approach to Parry Sound, Red Rock, new lighthouse under construction, temporary light. 102. Ontario, Lake Huron, North channel, Clapperton channel, Meredith rock, beacon rebuilt.

40. Apr. 19, 103. Ontario, River St. Mary, Sault Ste. Marie canal upper entrance, channel widened, changes in buoyage. 104. Ontario, River St. Mary, Vidal shoal, gas buoy established.

41. Apr. 20. 105. Quebec, River St. Lawrence below Quebec, Wye rock, gas buoy established. 106. Quebec, River St. Lawrence, ship channel between Quebec and Montreal, Cap Levrard, change in character of ouoys.

Atlantic and Pacific Ocean Marine.

The Canadian-Australian Line's s.s. Makura, in arriving at Victoria, Apr. 2, made what is claimed to be a record, for the trip from Sydney, N.S.W., in completing the journey under 19 days.

Press reports from Victoria, B.C., state that the s.s. Montfort, of the C.P.R. Atlantic service, will shortly be transferred to the Pacific service, and will alternate with the Monteagle, between Vancouver and Hong Kong.

The Canadian Mexican Pacific Steamship Co. has rechartered the s.s. Henley for its Vancouver-Salina Cruz service, and it is reported that the s.s. St. Ronald, recently chartered for the service, will be released on the completion of its present trip.

A Glasgow, Scotland, press dispatch, of Apr. 2, stated that shipbuilders on the Clyde were tendering for two steamships of 5,000 shaft horse power, for the C.P.R. Atlantic Service, to replace the steamships Empress of Britain and Empress of Ireland.

The Donaldson Line's steamships, Tritonia, Laconia and Kastalia, have recently been overhauled at Glasgow, in readiness for the season's business. The company's new vessel, which it is expected will be launched on the Clyde in October, will be named Letitia.

Press reports from Victoria, B.C., state that negotiations are proceeding between Alfred Holt and Co., Ltd., operating the Blue Funnel Line, and the G.T.P.R., relating to a steamship service between Canada and the Orient, with Prince Rupert as the Canadian port.

It is announced that the Red Star Line's steamships Samland and Gothland, are to be transferred from the New York to the Montreal route on the re-opening of navigation, and that they will be operated by the Canada Line, between Montreal and the European continent.

The Anglo-Newfoundland Development Co.'s ice breaking steamship Tritonia, recently built in Great Britain, for the pulp wood trade from Botwood, Nfld., will sail from Liverpool, Eng., shortly, Capt. H. Dawe and three seamen of Bay Robert, having sailed for England to bring her over.

The Allan Line s.s. Montevidean, which for a number of years operated in the River Plate trade, and made occasional visits to Montreal, has been sold to ship breakers for $25,000. She was built at Glasgow, Scotland, in 1887, her dimensions being, length 330 ft., breadth 42.1 ft., depth 24.7 ft., tonnage, 2,952 gross, 1,862 register.

The Department of Trade and Commerce is receiving tenders for a man service between Canada and Jamaica, for either 14, 10 or seven day service, calling on each trip at Bermuda and Turk's Island. The chief Canadian port is to be Halifax, N.S., and a call is to be made, each trip at St. John, N.B. Vessels mut be of British register, and preference will be given those having cold storage facilities.

It is reported from London, Eng., that a number of shipbuilders have been invited to submit tenders for the construction of two vessels for the C.P.R. Atlantic service. The plans submitted show a vessel 600 ft. long, and the whole built specially for passenger traffic. A vessel of larger dimensions than either of the Empresses is shown, and the specification calls for the most modern of reciprocating machinery.

The Weir Line s.s. Luceric, arrived at Victoria, B.C., Apr. 7, on her maiden trip from the Orient. She was built last year at Port Glasgow, Scotland, for Andrew Weir and Co., London, Eng. She is of the following dimensions, length 460 ft., breadth 57 ft., depth 32 ft., with 6,526 gross tons, and is equipped with triple expansion engines of 3,000 i.h.p., supplied with steam by four boilers, capable of 12 knots an hour.

The Harrison Direct Line has announced through its agents, Balfour, Guthrie and Co., Vancouver, that it will place a line of steamers in service between the Pacific coast and Europe, this season, the first vessel, s.s. Centurion, sailing from Antwerp, Belgium, Apr. 2, calling at Glasgow, Liverpool and Swansea, in Great Britain, and at San Pedrom San Francisco, Seattle, Vancouver and Victoria on the Pacific coast. The service will be a monthly one.

The Cunard Line, which recently purchased the steamships Cairnrona, Tortona and Gerona, the last named now approaching completion in England, as mentioned in our last issue, for operation on the St. Lawrence route, will, it is reported, re-name the vessels, Ausonia, Ascania and Albania. The first sailing from Montreal, for Southampton, Eng., is scheduled to take place May 20. We are informed that it is probable that they will be operated under the name of the Thomson Line.

Vancouver press reports state that investigations are being made into the possibilities of Quatsino Sound, Vancouver, as the port for the C.P.R. trans-Pacific steamships. The report states that a considerable saving of time would be accomplished by the adoption of this port, and it would mean the extension of the Esquimalt and Nanaimo Ry. to Quatsino Sound, where passengers and mails would be disembarked, and taken to Nanaimo or Nanoose, and shipped on other C.P.R. vessels to Vancouver.

The Allan Line s.s. Scotian, which recently arrived at Halifax, N.S., on her first trip for that company, was formerly the s.s. Statendam, of the Holland-Amerika Line, and was recently purchased by the Allan Line, to replace the s.s. Pretorian. She was built in 1898 at Belfast, Ireland, and is a twin screw steamer, equipped with two triple expansion engines with cylinders 27½, 45½ and 75½ ins. diar. by 54 ins. stroke, of 1126 h.p. Her dimensions are: length 515.3 ft., breadth 59.8 ft., depth 23.8 ft.; tonnage, 10,491 gross, 6,701 register.

A press dispatch from London, Eng., states that —. Tinsley, representative of the Uranium Steamship Co., the full name of which is said to be the Uranium Canadian Northern Steamship Co., and which is also said to be controlled by the Canadian Northern Ry., has been banished from Holland, for infringement of the regulations issued by the Netherlands Government regarding the landing of steerage passengers bound for Eastern Europe. The Uranium Steamship Co., operates two steamships between Holland and New York, with a call at Halifax. One of the vessels, the s.s. Volturno, was purchased last year by the Canadian Northern Steamships, Ltd., and is operated by the Uranium Steamship Co., under a charter.

Maritime Provinces and Newfoundland.

At a meeting of residents at Emerald, P.E.I., recently, a resolution was passed that a car ferry should be established between the island and the main land.

The Euphrates Steamship Co., of St. John's Nfld., is reported to have purchased the steamship Othar, from Crosbie & Co. It is stated to be the intention to operate it, in conjunction with the s.s. Euphrates in Conception Bay.

The following acts relating to the marine interests were passed by the Newfoundland Legislature at its recent session:—Respecting the coastal mail service; to encourage the operation of a dock at Harbor Grace; respecting pilots and pilotage; to provide for the inspection of boilers.

H. Cann and Sons' steamboat Hugh D., was destroyed by fire at Yarmouth, N.S., Apr. 3. She was built at Shelburne, N.S., in 1908. Her dimensions were: length, 80 ft., breadth 18 ft., depth 7½ ft; tonnage, 71 gross, 20 register. She was equipped with engine of 24 n.h.p., driving a screw.

The Dartmouth, N.S. ferry commission has been advised that, before Nov. 30, it will be necessary to install new boilers in the ferry steamboat Dartmouth. The question of the style of boiler to be adopted, is to be discussed, it having been suggested that oil-burning boilers be installed in place of the old ones.

A meeting was held, Apr. 5, at the Marine and Fisheries Minister's office, St. John's Nfld., to discuss arrangements whereby such vessels as were required for the Newfoundland trade generally could be built in the colony, instead of going outside as heretofore. The question of revising the act respecting ship building was also discussed.

The Eastern Transportation Co., the incorporation of which we announced in our last issue, is closely allied to, and will work in connection with, the Bathurst Lumber Co., Ltd. The headquarters are at Bathurst, N.B., and Angus McLean, Manager Bathurst Lumber Co., is President, with A. E. Loosen, accountant Bathurst Lumber Co., as Manager.

The Steamship Senlac Co.'s s.s. Senlac, which was to have been sold by public auction at Dalhousie, N.B., Apr. 5, was withdrawn, no bid being made. The vessel which is managed by Wm. Thompson & Co., St. John, N.B., is laid up at Dalhousie. J. H. Crossley has been appointed captain for this season, but we were advised Apr. 17, that it had not then been decided as to what route she would be placed on.

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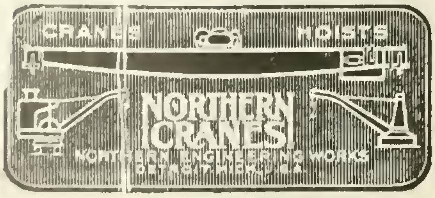


The Halifax and Newfoundland Steamship Co.'s s.s. Harlaw, under charter to Crosbie and Co., for sealing purposes, after having been crushed by ice, was abandoned, in a sinking condition, off St. Paul's Island, Apr. 7. She was built at Port Glasgow, Scotland in 1881, and was a screw driven vessel with engine of 71 n.h.p. Her dimensions were, length 165.1 ft., breadth, 24.5 ft., depth, 11.8 ft.; tonnage, 451 gross, 267 register. She was insured for $34,000 and $29,000 by the owners and charterers, respectively.

The Reid Newfoundland Co.'s s.s. Bruce, while en route from Port aux Basques, Nfld., to Sydney, N.S., towards the end of March, ran ashore in bad weather, at Point Nova, about eight miles from Louisburg, N.S., and became a total loss. Two of the passengers were drowned. A press report from Montreal, states that W. D. Reid, President Reid Newfoundland Co., has ordered a new steamer, of a similar type, to replace her. It is stated that the vessel will be ready for next season, and in the meantime, the s.s. Glencoe has been assigned to the route between Port aux Basques and Sydney.

A steel screw steamer, named Seal, was recently launched at Glasgow, Scotland, for Capt. J. A. Farquhar, Halifax, N.S. She is rigged as a two masted schooner, with upper and shelter decks, water ballast in double bottom and aft peak, and is specially strengthened for working in ice when sealing off Newfoundland. The machinery includes triple expansion engines, main boiler and donkey boiler, steam windlass, steam steering gear, steam winches, and she is equipped with wireless telegraph installation, electric light and electric searchlight. Her dimensions are, length 175 ft., breadth 26½ ft., depth 20½ ft.; tonnage, about 520 gross.

The s.s. Sandefjord, which recently underwent her trial trip off the Tyne, Eng., was built at Newcastle, for the iron ore trade between Wabana, Nfld., and Sydney, N.S. She is constructed on the Isherwood system to the requirements of the British Corporation for the Registry of Shipping, and the Norske Veritas. The machinery consists of triple expansion engines, with cylinders 28½, 47 and 78 ins. diar., by 54 ins, stroke, supplied with steam by three boilers, each 15½ ft., by 12 ft., at 180 lbs. pressure, under forced draught. There are also a steam windlass and steam steering gear, steam heating and complete electric light equipment, and ten steam winches, ten derricks and other facilities for the efficient handling of cargo. Her dimensions are, length 452 ft., breadth 58 ft., depth, molded, 28 ft., 8 ins., and she has a dead weight capacity of 10,650 tons.

The Nova Scotia Steel and Coal Co.'s ore steamers Tellus and Themis, recently built at Sunderland, Eng., which have been specially built for the trade between Wabana, Nfld., and North Sydney, Philadelphia and Middlesbrough, Eng., are of the following dimensions, length, 465 ft., breadth 60 ft., depth, molded, 37½ ft., with a dead weight capacity of 12,925 tons. The machinery includes triple expansion engines, with cylinders 27½, 45½ and 76 ins. diar., by 51 ins. stroke, supplied with steam by three Scotch boilers 17 ft. 2 ins. diar., by 11 ft. long, at 180 lbs. working pressure, developing about 2,500 h.p. The vessels are built on the cantilever principle with cellular double bottoms, and wing tanks extending the whole length, with water ballast capacity of 3,000 tons. There are five hatches, each 30 ft. wide, three being 36 ft. long and the others 30 ft. long. Twelve steam winches are provided with double derricks for each hatch. The Tellus recently arrived on this side, and the Themis is expected to arrive early in May.

Province of Quebec Marine.

The Dominion Government quarantine steamboat Polana was launched at Kingston, Apr. 4.

The Dominion Department of Public Works received Apr. 26, tenders for the construction of an extension to the western wharf at the quarantine station at Grosse Isle, Montmagny county.

The Richelieu and Ontario Navigation Co. is applying to Parliament for amendments to its act of incorporation, authorizing an increase of its capital stock to $10,000,000, and for other purposes.

Dominion Quarry, Ltd. has been incorporated under the Quebec Companies Act, with a capital of $20,000, and office at Quebec, to carry on a general stone quarrying business, and in connection therewith, to own and operate steam and other vessels.

P. Bourque, for some years keeper of the light at Bird Rocks, addressed the Canadian Club at Quebec, Apr. 6, on the possibility of winter navigation of the St. Lawrence river and gulf, and claimed that it was, with the assistance of wireless telegraphy, quite possible, though there might be delays owing to heavy ice.

The Montreal and Cornwall Navigation Co.'s steamboat Emerald, which has been sold to the Barclay Smith Forwarding Co., Montreal, was built at Montreal, in 1903, and was formerly named Garnet. She is a paddle wheel steamer, equipped with engine of 30 n.h.p., and is of the following dimensions: length 140 ft., breadth, 23 ft., depth 14 ft.; tonnage, 385 gross, 195 register.

The Canadian Whaling Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $100,000, and office at Seven Islands, Que., to carry on a general whaling business, and to own and operate steam and other vessels and other necessary facilities therefor. The incorporators are, B. Sawyer, Westmount, Que.; F. Rosenburg, G. Magnus, L. B. Jennings, J. L. Danziger, Montreal.

The Fairhaven Transportation and Coal Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $50,000 and office at Montreal, to build or otherwise acquire and operate steam and other vessels, and to carry on the business of forwarding and transporting passengers and goods on rivers, lakes and other waters, and to carry on the business of general merchants. The incorporators are, G. W. MacDougall, L. Macfarlane, G. Barclay, J. G. Cartwright and J. Graham, Montreal.

D. McNicoll, Vice President, C.P.R., had a conference with J. B. Laliberte, Chairman, Quebec Harbor Commission, Apr. 3, in connection with some improvements in the port. It is proposed to continue Prince Edward St., to the Empress docks, this meaning the continuation of the road from Prince Edward St., with the northern part of the embankment so as to run a direct line with that wharf for passengers and freight for the Empresses, and the construction of a line between the wharf and the Quebec and Montmorency Ry bridge. It was arranged that plans would be submitted to the Commission and to the city council, shortly.

The Government steamboat Cartier is engaged in re-surveying the River St. Lawrence in the vicinity of Father Point and Bicquette Island, and mariners are warned that as the lines of soundings take the vessel across the river at slow speed, on lines at right angles to the track usually followed by vessels, and as much loss of time ensues when she has to leave these lines, they should pass astern of her, if circumstances permit. In any case the helm should be altered to clear her in ample time, in order that the Cartier's officers may be in no doubt as to the course of passing ships. The Cartier being a two masted vessel, painted white, is easily recognizable.

The Quebec board of trade, recently memorialized the Minister of Marine, regarding the location of the proposed navy yard and ship building and repairing plant for vessels of the Canadian Navy, urging the claims of Quebec, which, it is claimed, has advantages over all other points. The Minister in his reply pointed out that tenders for the construction of vessels for the Canadian Navy had been invited, the firms tendering being asked to state the locality at which they proposed to establish their yards for such construction, and should the successful tenderer choose Quebec as the site for its operations, he would do his best to have that choice ratified.

Ontario and the Great Lakes.

It is reported that the Ontario Car Ferry Co., is considering the building of another car ferry, to run with its car ferry Ontario No. 1, between Cobourg and Rochester.

The water was withdrawn from the Cornwall canal during April, to enable the contractors, Fallon Bros., to complete their contract of building a new weir and a wall, running west from lock 17.

The Lake Carriers Association, Apr. 14, announced its recommended draught for vessels passing the Limekiln Crossing at Amherstburg, as 19 ft., and for the Canadian lock at Sault Ste. Marie, as 17¾ ft.

The Hamilton Steamboat Co.'s steamboat Macassa arrived at Toronto, Mar. 30, being the first vessel to arrive at that port this season. The customary hat was awarded by the harbor master to Captain J. Henderson.

At a special meeting of shareholders of the Northern Navigation Co., held at Toronto, Apr. 8, it was decided to increase the number of directors, and C. A. Barnard, K.C., was added to the board, the other members of which were given in our April issue.

The steam tug which has been built by Clark Bros., Toronto, during the winter, was launched Apr. 7, and named J. T. Clark. She is to be used in the Toronto island freight and baggage business, in connection with the Toronto Ferry Co.

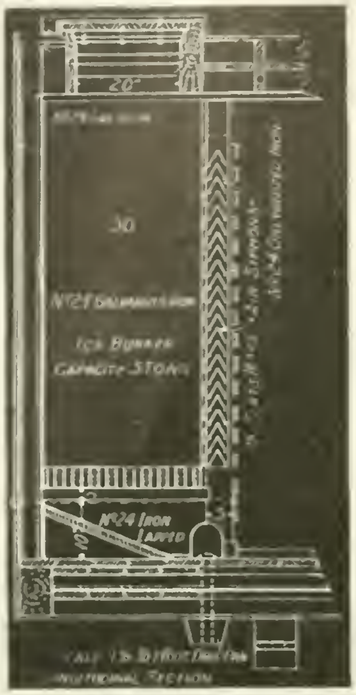
The Turbine Steamship Co.'s s.s. Turbinia, has been thoroughly overhauled, and some of her machinery renewed, during the winter, and it is announced that she will be put on her regular service between Toronto and Hamilton, May 20.

In consequence of the death of G. B. Greene, Secretary-Treasurer Upper Ottawa Improvement Co., Ottawa, the following appointments have been made:—Superintendent, P. W. Tomkins; Secretary-Treasurer, E. C. Woolsey; Paymaster, K. A. Greene.

It is announced that the Lake Erie and Northern Ry., which recently obtained a charter to operate an electric railway from Port Dover to Galt, by way of Brantford, intends to run vessels between Port Dover and Fort William, for both passengers and freight.

Eddy Bros., of Blind River, have ordered a steel steam tug at Collingwood, for delivery in July. It is to be of steel throughout, equipped with fore and aft compound engines, supplied with steam by a Scotch boiler. The dimensions will be, length 75 ft., breadth 14 ft., depth 9 ft.

The Peterboro and Lake Simcoe Navigation Co., is reported to have acquired



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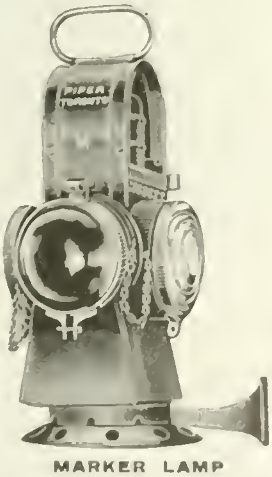

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the steamboat Geneva, for operation on Rice Lake, in place of the company's steamboat Otonabee, which is to be operated on Lakes Simcoe and Couchiching. The Geneva was built at Orillia in 1905.

The U.S. Board of Engineers for rivers and harbor work, is endorsing the project to straighten the Detroit channel between Fighting Island and Wyandotte. There are five turns in five miles, and it is estimated that to dredge away the curves, thus making a straight channel, 800 ft. wide, and 22 ft. deep, would cost $310,000.

The Niagara, St. Catharines and Toronto Navigation Co.'s steamboat Dalhousie, which is being built at Collingwood, will, it is anticipated, be completed in time to make her first trip to Toronto, June 15, when she will immediately be placed on her route between Toronto and Port Dalhousie in conjunction with the steamboat Garden City.

The s.s. Filgate, which has been sold by the Montreal and Cornwall Navigation Co., to the Cornwall and Montreal Transportation Co., Cornwall, was built at Montreal in 1879, and is a paddle wheel steamer with engine of 100 n.h.p. Her dimensions are, length, 158 ft., breadth, 25.4 ft., depth 7.8 ft.; tonnage, 425 gross, 237 register.

The Detroit and Windsor Ferry Co., incorporated under the laws of the State of Michigan, has been licensed to carry on its business in Ontario, provided that it shall not use, in Ontario, a larger amount of capital, than $500,000, without further application for supplementary license. N. A. Bartlet, Windsor, has been named as its attorney.

The annual meeting of the Merchants Mutual Line Ltd., was held at Toronto, Apr. 15, when the financial reports for 1910 were submitted and approved. Following are the officers and directors for the current year:—President, D. B. Hanna; Vice President, Z. A. Lash, K.C.; other directors, Sir Henry M. Pellatt, F. Nicholls and W. H. Moore.

A London, Eng., press dispatch, of Apr. 3, says: "A Newcastle correspondent wires confirming the report that Furness, Withy and Co., are moving a big scheme for securing direct communication between Liverpool and the Canadian lakes. Three companies operating on the lakes will become one large concern, working from Montreal with ocean steamships provided by Lord Furness."

The Canadian Lake and Ocean Navigation Co's annual meeting was held at Toronto, Apr. 15, when the accounts for the past year were submitted and approved. Following are the officers and directors for the current year:—President, D. B. Hanna; Vice President, Z. A. Lash, K.C.; other directors, Hugh Sutherland, F. H. Phippen, K.C., F. Nicholls, E. R. Wood, Sir Henry M. Pellatt and Noel Marshall.

Some trouble has arisen between the parties operating ferries between Fort Frances, Ont., and International Falls, Minn., and it is probable that the matter will be referred to arbitration. In the meantime, the ferry service is at a stand still.. Gagne Bros., Fort Frances, have the Canadian license to run the ferry, and L. W. Wilson, International Falls, the U.S. license, and they have hitherto worked in conjunction.

The Inland Lines steamboat Dunelm, which was stranded at Isle Royale, last fall, has been docked at Port Arthur for repairs. She is the first vessel to be docked at the Western Dry Dock and Shipbuilding Co.'s yards. After completion of these repairs, her place on the dock will be taken by the steamboat Trevor, which was also wrecked at Isle Royale, last fall, and subsequently purchased and salved by F. S. Wiley, Port Arthur.

In connection with the press reports to the effect that P. Paton, of Collingwood, has been appointed General Agent Inland Lines, and Northern Navigation Co., at Winnipeg, we are advised that it is somewhat misleading, as such an appointment has not been made, either by the Inland Lines or Northern Navigation Co. Upon the projected amalgamation of the two companies being completed, it is said that he will be appointed western representative of the amalgamated concern, with headquarters at Winnipeg.

The Rainy River Navigation Co. will operate both its vessels on the Lake of the Woods, this year, the Keenora running between Kenora and Rainy River, where she will transfer passengers, etc., to the Agwinde, which will run up to the Rainy River at Fort Frances. Considerable difficulty has, at times, been experienced with low water at the mouth of the river, but it is anticipated that the dredging now being carried out there, will keep the channel open during the time the boats are operating.

Included in the work to be undertaken on the Trent Valley canal this season is a number of repairs, the cost of which is stated as about $53,000, as follows:—between Kirkfield lift lock and Lake Simcoe, $5,000; Sturgeon Lake, Lindsay river, $4,000; rip-rap Balsam lake, Lake Simcoe division, $5,000; duplicate lock gates, $5,000; reservoir waters, Jumbo lake, $9,000; entrance piers at Buckthorn lock two piers above the one below, $4,000; moving bridge at Fenelon Falls, $2,000; purchase of land, etc., and repairs to lock at Bobcaygeon, $15,000.

The steamboat Cataract, owned by the Cataract Ice Co., Niagara Falls, Ont., was damaged by fire to the extent of about $8,000, recently. It is stated that the after part of the boat including the hull and machinery was destroyed. She was formerly known as the Myles and owned by the Myles Transportation Co., Hamilton, and was built at Hamilton in 1882, her dimensions being, length 175 ft., breadth 33.6 ft., depth 14.6 ft.; tonnage, 957 gross, 598 register and she was equipped with engine of 200 n.h.p driving a screw.

An examination of the steamboat John Sharples, which was wrecked on Galloup Island, Lake Ontario, last fall, shows that she is in comparatively good condition. There is a large hole in her starboard quarter, but otherwise the damage does not appear considerable. A portion of the cargo, about 12,000 bush. of grain, was removed during the winter but otherwise it is intact. The Reid Wrecking Co., Sarnia, have the contract from the underwriters for salving the vessel, for $20,000.

The Department of Marine and Fisheries will receive tenders, May 1, for two twin screw gasolene launches for the Fisheries Patrol Service on the Great Lakes. The dimensions of the boats must be, length between perpendiculars, 56 ft., breadth 10 ft., draught, 3 ft.; speed 10½ knots an hour, and each is to be equipped with two 34 h.p. gasolene engines of a type satisfactory to the Deputy Minister. One boat is to be delivered at Parry Sound, and the other at Sault Ste. Marie, Ont.

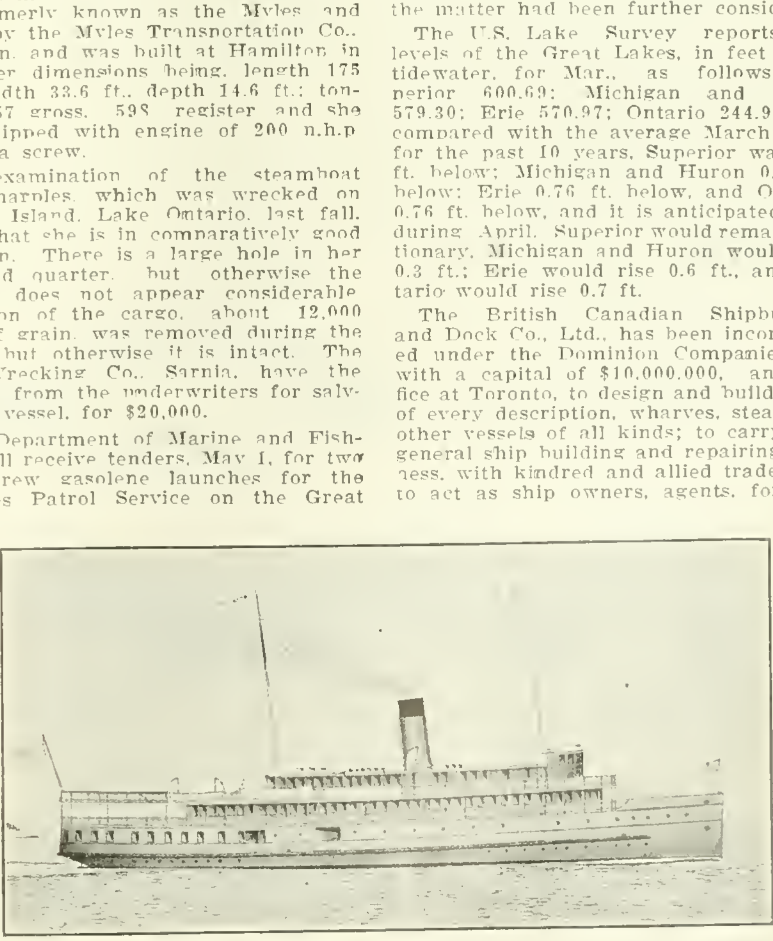
The Trent Valley Navigation Co., steamboat Esturion is reported to have been sold to a Fenelon Falls syndicate, and it is stated that she is being thoroughly overhauled, for operation between Lakes Simcoe and Rice Lake, this season. She was built in Toronto in 1884, and is paddle wheel driven, with engine of 31 n.h.p. Her dimensions are, length 96 ft., breadth 17 ft., depth 6.2 ft.; tonnage, 118 gross, 75 register. It is also stated that the owners will be known as the Trent Valley Navigation Co., Ltd.

A Belleville deputation waited on the Ministers of Railways and Canals and of Public Works recently, in reference to the proposed removal of the shoals in the Bay of Quinte at Telegraph Light and Point Anne, and also in Belleville harbor, and also to ask for the construction of a new wharf at Belleville, for which plans were submitted. Both Ministers promised early consideration, and it is said that engineers are to be sent down to make the necessary surveys for the preparation of estimates.

A meeting of the Canadian Society of Civil Engineers, in Montreal, Mar. 30, discussed the resolution passed at a previous meeting, requesting the Society's council to urge upon the Government the importance of study and report before any commitments are made in reference to the damming of the St. Lawrence or the carrying out of any other great scheme of canal transportation A resolution was passed delaying further action on the previous resolution, until the matter had been further considered.

The U.S. Lake Survey reports the levels of the Great Lakes, in feet above tidewater, for Mar., as follows:—Superior 600.69; Michigan and Huron 579.30; Erie 570.97; Ontario 244.96. As compared with the average March levels for the past 10 years, Superior was 1.22 ft. below; Michigan and Huron 0.98 ft. below; Erie 0.76 ft. below, and Ontario 0.76 ft. below, and it is anticipated that, during April, Superior would remain stationary, Michigan and Huron would rise 0.3 ft.; Erie would rise 0.6 ft., and Ontario would rise 0.7 ft.

The British Canadian Shipbuilding and Dock Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $10,000,000, and office at Toronto, to design and build docks of every description, wharves, steam and other vessels of all kinds; to carry on a general ship building and repairing business, with kindred and allied trades, and to act as ship owners, agents, forward-



Niagara, St. Catharines and Toronto Navigation Co.'s steamboat Dalhousie.

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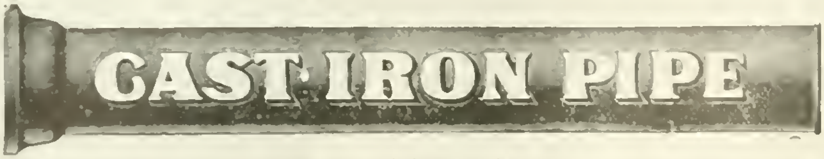

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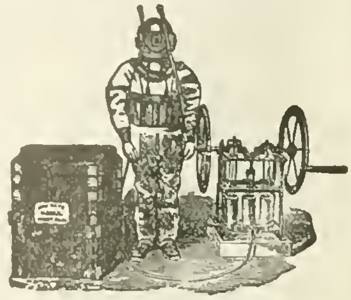

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The Merchants' Mutual Line, will, this season operate the following vessels:—A. E. Ames, H. M. Pellatt, J. H. Plummer, Beaverton, Mapleton, and Saskatoon, owned by the Merchants Mutual Line, Ltd., Toronto; Acadian and Canadian, owned by the Mutual Steamship Co., Ltd., Toronto; D. A. Gordon, owned by the International Steamship Co., Ltd., Toronto; C. A. Jaques, owned by the Jaques Transportation Co., Ltd., Montreal: Bickerdike. owned by the Montreal and Great Lakes Steamship Co., Ltd., Montreal; City of Ottawa, City of Hamilton and City of Montreal, owned by the Montreal and Lake Erie Steamship Co., Ltd., Montreal; A. E. McKinistry, owned by the Interlake Transit Ltd., Toronto, and Advance, owned by the Montreal Transportation Co., Ltd., Montreal.

The Nipissing-Pontiac Steamboat Co., has been organized at New Liskeard, to acquire the steamboat Aileen from the Upper Ontario Steamboat Co., and to operate her on Lake Timiskaming, between North Timiskaming, Guigues, Haileybury and New Liskeard. The Aileen is 78½ ft. long, by 12½ ft. beam, and has capacity for about 80 passengers and 20 tons of freight. A covered scow has also been acquired, a dock at Tomstown and a dock and storehouse at New Liskeard. the price paid for the whole being given as $6,500. Provisional directors were elected as follows: Messrs. Monaghan and Renaud, North Timiskaming; Piche and Gotnier, Guigues; Warrell, Brickendem, Fullerton, Bolger anl Burwash, New Liskeard. It was decided to apply for incorporation immediately.

A press dispatch from Montreal, Apr. 20, stated that following an important meeting of the Richelieu and Ontario Navigation Co., there, it was learned, that after conferences with the representatives of the Northern Navigation Co., and Inland Lines Ltd., the two companies have been bought out by a syndicate, of which Lord Furness is the head, and it is understood that the same syndicate has purchased a large block of R. & O.N. Co.'s stock, which will give it a large representation in the company. It was decided to issue 10,440 new shares at par, thus increasing the capital by $1,044,000, and making the total paid up capital, $4,176,000. The new stock will be issued to shareholders in the proportion of one share for every three now held, and a special meeting will be held, May 1 to ratify the directors' actions.

The steamboat which is being built at Kingston for Capt. A. Foster, mayor of Smiths Falls, was launched there, Apr. 19, and christened Buena Vista. It was intended to name her Venture, but, as there is already a vessel of that name, a new one had to be found. Her dimensions are, 96 ft. long over all; beam 18 ft., depth 6½ ft. She is of the composite type, with keel, stem and stern posts and deadwood of white oak, with 2 in. sides and 2½ in. bottom, frames 2½ by 2½ in. steel angles, and shear strake running the entire length, centre keelson 12 by 5 in. girder iron, boiler and machinery keelsons 12 by 3 in., and additional two 6 by 3 in. keelsons running the entire length of the bottom. On the promenade deck there is a saloon cabin with circular front and two state rooms. And aft of these two toilet rooms. Aft of the stairway are the galley and mess rooms, and the stern is taken up by a restaurant. The wheelhouse and captain's quarters are on the upper deck. The machinery consists of fore and aft compound condensing vertical engines with cylinders 9 and 18 ins. diar., by 14 ins. stroke, supplied with steam at a working pressure of 150 lbs, by a Fitzgibbon boiler. There is also a complete equipment of pumps and fire extinguishing appliances. She will run between Kingston and Smiths Falls.

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Manitoba, Saskatchewan and Alberta.

The Hyland Navigation and Trading Co., Ltd., has been granted supplementary letters patent, increasing its capital stock from $200,000 to $1,000,000.

The Hyland Navigation and Trading Co., has recently completed a large barge 200 ft. long, by 44 ft. wide, for use on the Red River. The officers and directors of the company for the current year, are: President and General Manager, J. L. Hyland; Vice President, J. L. Spencer; other directors, D. B. Sprague, J. R. Cote and W. E. Robinson.

V. Maurice of Grouard, Alta., is building a steamboat at Athabasca Landing, for operation on the rivers and the Lesser Slave Lake. She will be 60 ft. long, with 14 ft. beam, and equipped with engine of about 30 h.p. She will be used exclusively for freight, and will have a capacity for about 15 tons. It is expected to have the boat ready for operation about the middle of May.

The Hudson Hope and Vermillion Transportation and Development Co., which is reported to have secured a charter for the navigation of about 1,350 miles on the Peace River, is said to be arranging to build two steamboats at Athabasca Landing, Alta. The first vessel, will, it is anticipated, be ready for operation this season, and the other will be commenced about the end of the year. They will be used in shipping mineral products from the company's mines, and will connect with the Northern Transportation Co.'s vessels.

The Lake Winnipeg and Red River Navigation Co., the incorporation of which we announced in our last issue, has a capital of $300,000, divided into 30,000 shares of common stock, at a par value of $10, with power to issue first mortgage serial 6% gold bonds to the extent of 60% of the constructive value of steel clad steamships. It is making an issue of 15,000, at par, with a bonus of income warrants of equal value, which shall not be operative until the earnings have provided for regular 10% dividends on all stock issued, and for a surplus beyond the requirements of the dividends, of $150,000, for re-investment in extensions. The provisional directors are Capt. S. Sigurdsson, Gimli, Man.; J. McDiarmid, A. Davidson, W. F. Merrill and H. Cooper, Winnipeg.

The Northern Transportation Co.'s steamboat Northland Call, now under construction, and which it is anticipated will be completed and ready for operation by June 1, is built of wood, the hull being tamarac, and the upper works and cabin of spruce and B.C. cedar. Her principal dimensions are, length over all 98 ft., beam on water line 18 ft., depth, forward, 4 ft., draft, light, 14 ins. She is equipped with engines of patent inside valve drive with two main cylinders 7 ins. by 48 ins., direct connected to the 14 ft. stern wheel, and supplied with steam at a pressure of 200 lbs., by a Clyde dry back boiler 66 ins. by 96 ins. Other equipment includes pumps, electric lighting installation, and wireless telegraphy. The steamboat Northland Light, which was running to Slave Lake last year, and which, towards the end of the season, struck on a rock and sank, has been overhauled and repaired, and will be again in operation on the re-opening of the season during May, as will also the steamboats Northland Star and Northland Sun. All these vessels, except the Northland Star, are being equipped with a wireless telegraph installation, and a land station has also been equipped at the company's headquarters at Athabasca Landing, Alta., where the vessels will be operated from.

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B.C. and Pacific Coast Marine

The G.T.P. Coast Steamship Co.'s s.s. Prince John, on arrival on the coast, from Glasgow, Scotland, is to be equipped with a wireless telegraph installation.

The large dredge, which was recently built in Renfrew, Scotland, for dredging on the B.C. coast, has been overhauled and repaired after her trip from Great Britain, and has been named Mastodon.

The directors of the North Vancouver Ferry Co., at a recent meeting decided to ask the city council to submit a bylaw providing for raising $150,000, to be utilized for the building of another ferry steamboat and a Vancouver wharf.

The site for the dry dock, which the B.C. Marine Railway Co., proposes to construct, and for which the Government has been asked to grant a subsidy, has been chosen at Lang Cove. The dock will be of the first class, 900 by 100 ft., and will be the largest on the Pacific coast.

The C.P.R. s.s. Princess Charlotte, which has been equipped with the necessary machinery to enable her to burn oil as a fuel, was replaced on her run in the middle of April, the s.s. Princess Victoria being laid off for a similar equipment.

The purchasers of the property and assets of the Fort George Lumber and Navigation Co., are reported to be closely allied to the J. D. McArthur Co. The F.G.L & N. Co., last year operated three steamboats on the Fraser River, Chilco, Chilcoten and Fort Fraser.

The Westminster Marine Railway Co., has recently launched a stern wheel steamboat, which is owned jointly by it, and Capt. N. P. Roman, who will have charge of its operation. It is 100 ft. long, with 22 ft. beam, and will be used for general towing purposes, principally in the North Arm.

The C.P.R. s.s. Princess May, which has recently been thoroughly repaired and overhauled, and equipped for oil burning, recently completed her first voyage, using oil as a fuel, between Skagway and Vancouver, with the most satisfactory results. It is stated that her speed proved to be greater than anticipated

The B.C. Government has purchased the steam launch Kiora for patrolling the coast to prevent depredations on the Crown timber lands, making three vessels used for this purpose. She is screw driven with engine of 2 n.h.p., and was built at Victoria in 1906. Her dimensions are: length 37 ft., breadth 10.7 ft., depth 4.3 ft.; tonnage, 12 gross, 9 register.

The Union Steamship Co.'s s.s. Chelohsin, which is under construction at Dublin, Ireland, will, it is anticipated, be completed early in May. She is a twin screw vessel, 183 ft. long by 34 ft. beam, and is built on the same lines as the company's steamships Camosun and Cowichan. G. T. Legg, Manager, left Vancouver recently for England, to take delivery.

The C.P.R. has purchased the hulk Melanope, from Griffiths Bros., Seattle, Wash, to replace the wrecked barge Robert Kerr. The Melanope is on the British register, and was built at Liverpool, Eng., in 1876, as a fully rigged ship, and traded for a number of years between Great Britain and Australia. She was converted into a coal hulk in

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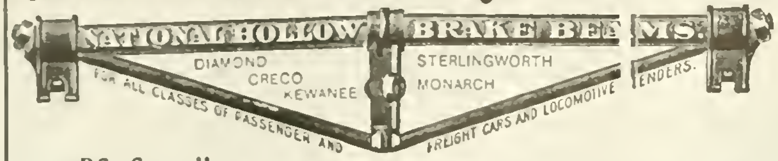
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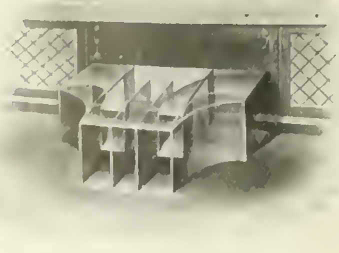

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1897, when she was purchased by Griffiths Bros. Her dimensions are, length, 258 ft. 2 ins., breadth 40 ft., 2 ins., depth. 23 ft.

The California Steamship Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $200,000 and office at Vancouver, B.C., to build, own and operate steam and other vessels, wharves, piers, warehouses, etc., and to carry on a general transportation business along the coast or on inland waters. The incorporators are, A. Baillie, Seattle, Wash.; T. W. Brownsmith, London, Eng.; H. G. Anderson, W. Houston, J. H. Lawson, Jr., Vancouver.

The s.s. Iroquois, running between Sidney and the Gulf Islands, sank near Robert's Bay, Apr. 10, and the majority of the passengers and crew were drowned. It has been stated that the disaster was due to the cargo shifting, causing the vessel to capsize. She was a wooden steamer, built at Port Moody in 1900. Her dimensions were: length, 82 ft., breadth, 20 ft.; depth, 7.7 ft.; tonnage, 195 gross, 94 register, and she was equipped with engine of 20 n.h.p., driving a screw.

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The All Red Line Ltd., recently incorporated under the B.C. Companies Act, as mentioned in a previous issue, has an authorized capital of $150,000, and its head office is at Vancouver. The company owns the steamship Selma, which is being operated in the passenger and freight trade, between Vancouver and Sechelt. The officers and directors for the current year, are: President, Capt. Polkinghorne; Secretary, M. G. Walton; other directors, S. Mortimor, —. Townsend and —. Anderson, Vancouver.

The Dominion Government hydrographic steamboat Lillooet, sailed Apr. 11, from Esquimalt, for a surveying cruise in northern waters. She will first take up her quarters at Grenville channel to complete the work left unfinished last fall, and afterwards proceed to Skidegate and the Hecate Strait, and on finishing the work there, will commence surveying the harbors of Queen Charlotte Islands, and take soundings at the western end of the Dixon entrance. She is not expected to return to port until November.

Tenders were recently received for the purchase of the British survey ship Egeria, which has been in service on the B. C. Coast for a number of years. It is reported that the Canadian Navy League had made a bid for the vessel, and hope to acquire it for navy training purposes.

Press reports from Nelson, state that the C.P.R. has decided to build another vessel for service on Kootenay Lake. It is stated that plans have been forwarded to Winnipeg, by J. C. Gore, Superintendent, B.C. Lake and River Service, and until they are approved, no definite announcement will be made. The plans provide for a vessel 200 ft. long, with 39 ft. beam, equipped with tandem compound condensing engines, berth accommodation for about 160 passengers, and general accommodation for about 1,000 on her three decks. There will be special observation saloons, one fore and one aft, one being reserved for ladies. She will be a modern stern wheeler, with a speed of about 18 miles an hour.

The Vancouver-Quesnel Navigation Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of $25,000, and office at Vancouver, to own and operate steam and other vessels, and carry on a general business as merchants and carriers by land and water, etc. Among those interested are J. R. Stewart, T. Marion and T. Connor. The steamboat Quesnel has been purchased from T. Marion, and it is reported that an option has been taken on another steamboat. The company intends operating on the Upper Fraser River between Soda Creek and Fort George, and, it is stated that it may also run a vessel on waters adjacent to Vancouver. The Quesnel is a paddle wheel steamboat with engine of 3 n.h.p. Her dimensions are, length, 70 ft., breadth, 16.2 ft., depth, 3.7 ft.; tonnage, 130 gross, 77 register. She was built at Quesnel in 1909.

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Vessels Removed From the Register.—The following vessels were removed from the register, during March, for the reasons assigned:—Steam.—Cunaxa, St. John, N.B., 2,048 tons, sold to foreigners; Iona, Vancouver, B.C., 36 tons, broken up. Sailing.—Adventure, Port Hawkesbury, N.S., 54 tons, broken up; Pilgrim, Lunenburg, N.S., 99 tons, transferred to Barbadoes; St. Pierre, Quebec, 44 tons, broken up; Shanks, Windsor, N. S., 1,034 tons, burnt; Souvenir, Yarmouth, N.S., 71 tons, broken up; Theta, Windsor, N.S., 420 tons, missing; W. M. Vogler, Port Medway, N.S., 46 tons, supposed to be out of existence.

CITY OF TORONTO

Tenders for Construction of Ashbridges Bay Docks.

Tenders will be received by registered post only, addressed to the Chairman of the Board of Control, City Hall, Canada, up to noon on Tuesday, 23rd May, 1911, for the construction of dock in Ashbridges Bay.

Envelopes containing tender must be plainly marked on the outside as to contents.

Specifications and forms of tender may be obtained upon application to the Department of Railways, Bridges and Docks, City Engineer's Office, Toronto.

The lowest or any tender not necessarily accepted.

G. R. Geary, (Mayor),
Chairman Board of Control.
City Hall, Toronto, April 12, 1911.

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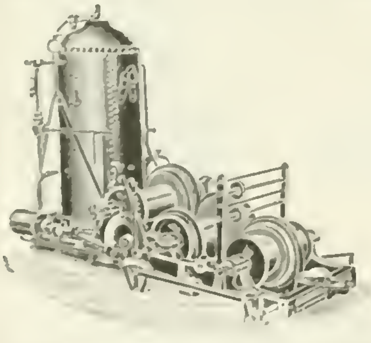

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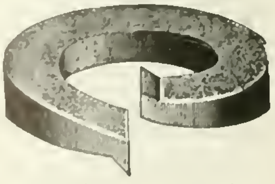

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James Hutton & Co. ....Montreal.
Nova Scotia S. & C. Co., New Glasgow, N.S.
Jas. W. Pyke & Co.............Montreal.
Steel Co. of Canada, Ltd., Hamilton, Ont.

Babbit Metal
Tallman Brass & Metal Co., Hamilton, Ont.

Battery Boards
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Beacons
International Marine Signal Co....Ottawa.

Bearings, Side
Canadian Car & Foundry Co....Montreal.
Chicago Railway Equipment Co..Chicago.

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Nathan Manufacturing Co......New York.

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Babcock & Wilcox, Ltd.........Montreal.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S

Boilers, Portable
Babcock & Wilcox, Ltd.........Montreal.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

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Babcock & Wilcox, Ltd.........Montreal
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S

Boilers, Steam
Babcock & Wilcox, Ltd.........Montreal.
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.

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Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S

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Canadian Ry. Equipment Co., Welland, Ont.

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London Machine Tool Co., Ltd., Hamilton.

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Bolts, Track
Nova Scotia S. & C. Co., New Glasgow, N.S.

Borers, Car Wheel
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Boring Mills
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Chicago Railway Equipment Co..Chicago.

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Canada Iron Corporation, Ltd..Montreal.
The Holden Co., Ltd............Montreal.

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Williams & Wilson, Ltd ....Montreal.

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Dominion Bridge Co............Montreal.

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Canadian Car & Foundry Co....Montreal.
Crossen Car Mfg. Co........Cobourg, Ont.
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Lumen Bearing Co.....West Toronto, Ont.
Russel Wheel & Fdry Co...Detroit, Mich.
Standard Steel Works Co..Philadelphia, Pa.
Titanium Alloy Mfg. Co...Pittsburgh, Pa.

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Canada Iron Corporation, Ltd...Montreal.
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Lumen Bearing Co.....West Toronto, Ont.
Tallman Brass & Metal Co., Ltd.Hamilton.

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Russel Wheel & Fdry.. Co..Detroit, Mich.

Castings, Iron
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Canada Iron Corporation, Ltd...Montreal.
Kerr Engine Co..........Walkerville, Ont.
Russel Wheel & Fdry.. Co..Detroit, Mich.

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Taylor & Arnold ....Montreal.

Castings, Manganese Steel
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Montreal Steel Works, Ltd......Montreal.

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Montreal Steel Works ....Montreal.
Titanium Alloy Mfg. Co...Pittsburgh, Pa.

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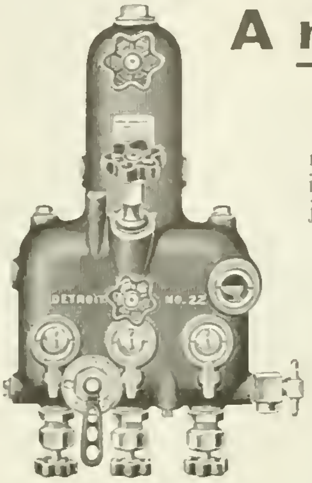

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Brown Hoisting Machinery Co..Cleveland.

Machines, Logging
Russel Wheel & Fdry. Co..Detroit, Mich.

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John Bertram & Sons Co. ..Dundas, Ont.

Machines, Planing and Shaping
John Bertram & Sons Co. ..Dundas, Ont.

Machines, Radial Drilling
John Bertram & Sons Co. ..Dundas, Ont.

Machines, Rivetting
Long & Allstatter Co. .... Hamilton, Ohio.

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John Bertram & Sons Co. ..Dundas, Ont.

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Long & Allstatter Co. .... Hamilton, Ohio.

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Canadian Fairbanks Co., Ltd...Montreal.
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Canada Iron Corporation, Ltd...Montreal.

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Goldschmidt Thermit Co. ....Toronto.

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Rice Lewis & Son................Toronto.

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Tallman Brass & Metal Co., Hamilton. Ont.

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Goldschmidt Thermit Co. ....Toronto.

Metal Work, Structural
Canadian Bridge Co.....Walkerville, Ont.
Dominion Bridge Co.............Montreal.
Montreal Locomotive Works.....Montreal.
Jas. W. Pyke & Co. ....Montreal.

Meters, Traction
Geo. C. Royce ....West Toronto, Ont.

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Chapman & Walker, Ltd.........Toronto.

Motors, Turntable
Taylor & Arnold ....Montreal.

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Steel Co. of Canada, Ltd..Hamilton, Ont.

Nickel
The Orford Copper Co. ....New York.

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The Orford Copper Co. ....New York.

Numbers
Acton Burrows, Limited ....Toronto.

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Positive Lock Washer Co. ..Newark, N.J.

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The Hudson's Bay Co....................

Office Fittings
Can. Office & Sch'l Furn. Co....Preston.

Office Signs
Acton Burrows, Limited ....Toronto.

Oil Cups
Nathan Manufacturing Co......New York

Oils
Galena Signal Oil Co..Franklin & Toronto.

Packing
Anchor Packing Co. of Can., Ltd.,.Montreal
Greene, Tweed & Co. ....New York.
The N. L. Piper Ry. Supply Co...Toronto.

Pile Drivers, Railway
F. H. Hopkins & Co. ....Montreal.
Mussens, Limited ....Montreal.

Piles
Harris Tie and Timber Co..Ottawa, Ont.

Pinch Bars
The N. L. Piper Ry. Supply Co..Toronto.

Pipe, Culvert, Cast Iron
Gartshore-Thompson Pipe Co...Hamilton.

Pipe, Gas, Cast Iron
Gartshore-Thompson Pipe Co...Hamilton.

Pipe, Sewer, Cast Iron
Gartshore-Thompson Pipe Co...Hamilton.

Pipe Stocks
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co........Hespeler, Ont.

Pipe, Water (Cast Iron)
Gartshore-Thompson Pipe Co...Hamilton.

Pipe, Wrought Lead and Galvanized
Steel Co. of Canada, Ltd..Hamilton, Ont.

Planers
John Bertram & Sons Co. ..Dundas, Ont.

Platforms, Steel
Standard Coupler Co. ....New York City.

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Meaford Wheelba'ow Co., Ltd., Meaf'd, Ont.
Mussens, Limited ....Montreal.
Western Wheeled Scraper Co..Aurora, Ill.

Poles and Posts, Cedar
Harris Tie and Timber Co..Ottawa, Ont.

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E. L. Drewry ....Winnipeg.

Preservative for Hose
Guilford S. Wood.............Chicago, Ill.

Printing
Southam Press ....Toronto.

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W. Kennedy & Sons, Ltd., Owen So'd, Ont.

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Canadian Fairbanks Co., Ltd...Montreal.
S. F. Bowser & Co., Ltd........Toronto.
Ontario Wind Engine & Pump Co..Toronto.
James Smart Mfg. Co....Brockville, Ont.

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M. Beatty & Sons ....Welland, Ont.
John Inglis Co., Ltd. ....Toronto.

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Long & Allstatter Co. .... Hamilton, Ohio.
Williams & Wilson, Ltd ....Montreal.

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Steel Co. of Canada, Ltd..Hamilton, Ont.

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Dominion Equip. & Supply Co., Winnipeg.
F. H. Hopkins & Co. ....Montreal.
Montreal Steel Works ....Montreal.
Whyte Railway Signal Co. ....Toronto

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A. B. Jardine & Co. ....Hespeler, Ont.
Whyte Railway Signal Co. ....Toronto

Rails, new
Dominion Iron & Steel Co....Sydney, N.S.
Drummond, McCall & Co.......Montreal.
J. T. Gardner ....Chicago, Ill.
J. J. Gartshore ....Toronto.
F. H. Hopkins & Co. ....Montreal.

Rails, for relaying
F. H. Hopkins & Co. ....Montreal.
J. J. Gartshore ....Toronto.
Mussens, Limited ....Montreal.
Provincial Steel Co., Ltd. .. Cobourg, Ont.
Jas. W. Pyke & Co. ....Montreal.

Rail Joints
Goldschmidt Thermit Co. ......Toronto.
The Rail Joint Co. of Canada...Montreal.
Whyte Railway Signal Co. ....Toronto

Rails, Re-rolled
Provincial Steel Co., Ltd. .. Cobourg, Ont

Railway Supplies
Canadian Fairbanks Co., Ltd..Montreal.
Canadian H. W. Johns-Manville Co.,
Ltd. ....Toronto
T. McAvity & Sons ....St. John, N.B.
Burton W. Mudge & Co......Chicago, Ill.
The Hiram L. Piper Co........Montreal.
The N. L. Piper Ry. Supply Co..Toronto.
Rice Lewis & Son...............Toronto.
Russel Wheel & Fdry. Co..Detroit, Mich.
Whyte Railway Signal Co. ....Toronto
Williams & Wilson, Ltd ....Montreal.

Reamers
Butterfield & Co.......Rock Island, Que.
A. B. Jardine & Co. ......Hespeler, Ont.

Refrigerators
Seeger Refrigerator Co. ..St. Paul, Minn.

Replacers, Car and Locomotive
Alexander Car Replacer Mfg. Co.Scranton
Dominion Equip. & Supply Co..Winnipeg
The Holden Co., Ltd. ....Montreal
F. H. Hopkins & Co. ....Montreal
Johnson Wrecking Frog Co.Cleveland, O.
Whyte Railway Signal Co.........Toronto

Rock Crushers
Allis-Chalmers-Bullock Ltd.......Montreal.
Western Wheeled Scraper Co..Aurora, Ill.

Rope
F. H. Hopkins & Co............Montreal.
The Hudson's Bay Company ....

Ropes, Derrick
Dominion Wire Rope Co. ....Montreal.

Ropes, Switch
F. H. Hopkins & Co., Ltd.......Montreal

Rubber Goods, Mechanical
Guilford S. Wood............Chicago, Ill.

Scales
Canadian Fairbanks Co., Ltd., Montreal.

Safes
J. & J. Taylor....................Toronto.

Scows, Dump and Deck
M. Beatty & Sons..........Welland, Ont.

Scrapers, Wheel and Drag
F. H. Hopkins & Co.............Montreal.
Meaford W'lbarrow Co., Ltd., Meaford, Ont.
Mussens Limited ....Montreal
Western Wheeled Scraper Co...Aurora, Ill.

Screw Plates
Butterfield & Co.........Rock Island, Que.
A. B. Jardine & Co.........Hespeler, Ont.

Screws, Wood and Machine
Steel Co. of Canada, Ltd..Hamilton, Ont.

Seats, Station
James Smart Mfg. Co. ....Brockville, Ont.

Semaphore Arms
Acton Burrows, Limited ....Toronto.

Semaphores
The N. L. Piper Ry. Supply Co., Toronto.
Saxby & Farmer, Ltd. ....Montreal

Shapers
London Machine Tool Co., Ltd., Hamilton.

Shingles
Imperial Timber & Trading Co. Vancouver.

Ships
Polson Iron Works, Ltd ....Toronto

Shop Equipment, Car and Locomotive
London Machine Tool Co., Ltd., Hamilton.

Shops
The Hudson's Bay Company ....

Signal House Numbers
Acton Burrows, Limited ....Toronto.

Signals
Railway Signal Co. of Canada..Montreal.
Hall Signal Co. ....Chicago, Ill.
The Hiram L. Piper Co., ...Montreal.
The N. L. Piper Ry. Supply Co...Toronto.
Saxby & Farmer, Limited ......Montreal.
Union Switch & Signal Co., Swissvale, Pa.
Whyte Railway Signal Co. ......Toronto.

Signals, Fog
International Marine Signal Co....Ottawa.

Signs
Acton Burrows, Limited ....Toronto.

Sills, Steel for Cars
Canadian Ry. Equip't Co..Welland, Ont.

Skidders and Loaders
Russel Wheel & Fdry Co...Detroit, Mich.

Slack Adjusters
Chicago Railway Equipment Co...Chicago

Sledges
James Smart Mfg. Co....Brockville, Ont.

Snow Ploughs
.Canadian Car & Foundry Co....Montreal.
Crossen Car Mfg. Co ....Cobourg, Ont.

Solder
Tallman Brass & Metal Co. Hamilton Ont.

Spikes, Railway, Ship or Pressed
F. H. Hopkins & Co.,..........Montreal.
Nova Scotia S.& C. Co. New Glasgow, N.S.
Steel Co. of Canada, Ltd..Hamilton, Ont.

Spreader Cars
F. H. Hopkins & Co.,..........Montreal.
Western Wheeled Scraper Co .Aurora, Ill

Spring Dampeners
McCord & Co., ...Chicago, Ill.

Springs
American Vanadium Co. ....Pittsburg, Pa.
B. J. Coghlin & Co. ....Montreal.
F. H. Hopkins & Co.,..........Montreal.
Montreal Steel Works ....Montreal.
Standard Steel Wks. Co.,Philadelphia, Pa.
Titanium Alloy Mfg. Co...Pittsburgh, Pa.

Sprinklers, Electric .
Preston Car & Coach Co...Preston, Ont.

Stand Pipes
John Inglis Co., Ltd. ....Toronto.
T. McAvity & Sons ....St. John, N.B.

Staples
Steel Co. of Canada, Ltd..Hamilton, Ont.

Steam Traps
Consolidated Car Heating Co., Albany, N.Y.

Station Name Signs
Acton Burrows, Limited ....Toronto

Staybolt Iron
Tayor & Arnold ....Montreal.

Staybolts, Flexible
Flannery Bolt Co. ....Pittsburg, Pa.

Staybolts, Locomotive
Flannery Bolt Co. ....Pittsburg, Pa.

Staybolt Taps
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co., ...Hespeler, Ont.

Steam Couplers
Safety Car Heating & L'ting Co. New York.

Steam Hammers
John Bertram & Sons Co. ..Dundas, Ont.

Steam Shovels
F. M. Beatty & Son ....Welland, Ont.
F. H. Hopkins & Co.,...........Montreal
Mussens, Limited ....Montreal.

Steamship Signs
Acton Burrows, Limited ...... Toronto.

Steel
Hermann Boker & Co. ....Montreal.
Nova Scotia S. & C. Co. New Glasgow, N.S.
Steel, Fire Box
Tayor & Arnold ....Montreal.
Steel for Axes
Montreal Steel Works ....Montreal.
Steel for Saws
Montreal Steel Works ....Montreal.
Steel for Springs
Jas. Hutton & Co., ...Montreal.
Steel Shafting
Nova Scotia S. & C. Co. New Glasgow, N.S.
Steel, Nickel for Nickel
The Orford Copper Co. ....New York.
Steel Plates
Jas. W. Pyke & Co., ...Montreal.
Steel, Tool
Montreal Steel Works ....Montreal.
Steering Gears
Dake Engine Co. ... Grand Haven, Mich.
Stokers, Mechanical
Babcock & Wilcox, Ltd ....Montreal.
Stoves
James Smart Mfg. Co....Brockville, Ont.
Superheaters
Babcock & Wilcox, Ltd ....Montreal.
Switchboards
Geo. C. Royce ....West Toronto, Ont.
Switches
Can. Ramapo Iron Wks. Ltd. Niagara Falls
Montreal Steel Works ....Montreal.
Switches, Electric
Geo. C. Royce ....West Toronto, Ont.
Switch Stands
Can. Ramapo Iron Wks. Ltd. Niagara Falls
Switch Targets
Acton Burrows, Limited ....Toronto.
Tacks
Steel Co. of Canada, Ltd..Hamilton, Ont.
Tanks and Tank Fixtures
John Inglis Co., Ltd. ....Toronto.
Ontario Wind Engine & Pump Co.Toronto.
Polson Iron Works ....Toronto
Tanks, Oil
S. F. Bowser & Co., Limited.....Toronto.
Tanks, Portable Acetylene, for Welding
Commercial Acetylene Co. ....Toronto.
Tapes, Measuring
Lufkin Rule Co. ....Saginaw, Mich.
Taps
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co., ...Hespeler, Ont.
Telegraph and Telephone Apparatus
Northern Electric & Mfg. Co. ...Montreal.
Telegraph and Telephone Office Signs
Acton Burrows, Limited ....Toronto.
Thermit
Goldschmidt Thermit Co. ....Toronto
Ticket Cases
Can. Office & School Furniture Co.Preston.
Tie Plates
B. J. Coghlin & Co. ....Montreal.
Nova Scotia S. & C. Co. New Glasgow, N.S.
Steel Co. of Canada, Ltd..Hamilton, Ont.
Guilford S. Wood ....Chicago, Ill.
Ties
Harris Tie and Timber Co..Ottawa, Ont.
Parry Sound Lumber Co. ....Toronto.
Timber, Railway and Bridge
Harris Tie and Timber Co..Ottawa, Ont.
Tires, Steel
Jas. Hutton & Co., ... Montreal.
Jas. W Pyke & Co. ....Montreal.
Standard Steel Wks. Co.,Philadelphia, Pa.

Tools and Supplies
Canadian Fairbanks Co., Ltd....Montreal.
Jas. Smart Mfg. Co. .....Brockville, Ont.
A. B. Jardine & Co., ...Hespeler, Ont.
Pratt & Whitney Co. ....Dundas, Ont.
Williams & Wilson, Ltd ....Montreal.
Tools, Track
John Bertram & Sons Co. ..Dundas, Ont.
B. J. Coghlin & Co. ....Montreal.
F. H. Hopkins & Co.,...... ..Montreal.
Montreal Steel Works ....Montreal.
Mussens, Limited ....Montreal.
Tools, Pneumatic
The Holden Co., Ltd. ....Montreal.
Tools, Cast Steel Track
American Brake Shoe & Fdry. Co. Mahwah
Track Equipment
Can. Ramapo Iron Wks. Ltd. Niagara Falls
Tramway Equipment
J. J. Gartshore ....Toronto.
Transformers
Allis-Chalmers-Bullock Ltd .....Montreal.
Geo. C. Royce ....West Toronto, Ont.
Transmission Appliances
Canadian Fairbanks Co., Ltd. ..Montreal.
Williams & Wilson, Ltd ....Montreal.
Trolley Poles, Steel
Dorner Railway Equip. Co...Chicago, Ill.
Trolley Wheels
Tallman Brass & Metal Co..Hamilton, Ont.
Trucks
Jas. Smart Mfg. Co. ......Brockville, Ont.
Trucks, Electric Car
Baldwin Locomotive Works..Philadelphia.
Montreal Steel Works ....Montreal.
Trusses, Roof
Canadian Bridge Co. ....Walkerville, Ont.
Dominion Bridge Co. ....Montreal.
Tubes, Boiler
Jas. W. Pyke & Co., ...Montreal.
Turbines, Steam
Allis-Chalmers-Bullock Ltd .....Montreal.
Turnbuckles
Montreal Steel Works ....Montreal.
Turntables
Canadian Bridge Co. ....Walkerville, Ont.
Dominion Bridge Co. ....Montreal.
Typewriters
Royal Typewriter Co. ....New York
Valves
Consolidated Car Heating Co. Albany, N.Y.
Williams & Wilson, Ltd. ....Montreal.
Valves, Angle and Globe
Kerr Engine Co. ....Walkerville, Ont.
Nathan Manufacturing Co. ....New York.
Valves, Brass Gate
Kerr Engine Co. ....Walkerville, Ont.
Valves, Check
Nathan Manufacturing Co. ....New York.
Valves, Iron and Brass
Canadian Fairbanks Co., Ltd....Montreal.
Valves, Iron Gate
Kerr Engine Co. ....Walkerville, Ont.
Valves, Locomotive Pop
T. McAvity & Sons ....St. John, N.B.
Taylor & Arnold ....Montreal.
Valves, Steam
Nathan Manufacturing Co. ....New York.
Vanadium Steels
American Vanadium Co ....Pittsburg, Pa.
Varnishes
Berry Bros. ....Walkerville, Ont.
The Dougal Varnish Co., Ltd....Montreal.
Velocipedes
Kalamazoo Ry. Sup. Co..Kalamazoo, Mich.

Ventilators, Car
Burton W. Mudge & Co. ....Chicago, Ill.
Vessels
Polson Iron Works, Ltd ....Toronto
Wagons, Dump
Western Wheeled Scraper Co..Aurora, Ill.
Washers
Steel Co. of Canada, Ltd..Hamilton, Ont.
Waste
B. J. Coghlin & Co. ....Montreal.
N. L. Piper Railway Supply Co...Toronto.
Water Softeners
Babcock & Wilcox, Ltd ....Montreal.
L. M. Booth Co. ....Chicago, Ill.
Dearborn Drug & Chemical Co., Chicago.
Water Towers
John Inglis Co., Ltd. ....Toronto.
Welding
Goldschmidt Thermit Co. ....Toronto.
Wheelbarrows
F. H. Hopkins & Co.,..........Montreal.
Meaford Wheelba'ow Co. Ltd. Meaf'd, Ont.
Wheels, Car
Canada Iron Corporation, Ltd.,..Montreal.
Canadian Car & Foundry Co....Montreal.
Jas. W. Pyke & Co., ...Montreal.
Standard Steel Wks. Co.,Philadelphia, Pa.
Wheels, Locomotive
Canada Iron Corporation, Ltd.,..Montreal.
Wheels, Re-inforced Pressed Steel
Kalamazoo Ry. Sup. Co.Kalamazoo, Mich.
Wheels, Rolled, solid Forged
Standard Steel Wks. Co.,Philadelphia, Pa.
Wheels, Steel Tired
Standard Steel Wks. Co.,Philadelphia, Pa.
White Lead
Steel Co. of Canada, Ltd..Hamilton, Ont.
Windlasses
Dake Engine Co. ....Grand Haven, Mich.
Windmills
Ontario Wind Engine & Pump Co.Toronto.
Wire
American Vanadium Co. ....Pittsburg, Pa.
Titanium Alloy Mfg. Co...Pittsburgh, Pa.
Wire and Wire Rope
Dominion Wire Rope Co. ......Montreal.
Mussens, Limited ....Montreal.
The Wire & Cable Co. ....Montreal.
Wire, Brass, Iron and Steel
Steel Co. of Canada, Ltd..Hamilton, Ont.
Wire, Copper
E. F. Phillips Elec. Works, Ltd .Montreal.
The Wire & Cable Co. ....Montreal.
Wire, Electric
Chapman & Walker, Ltd ... .Toronto.
E. F. Phillips Elec. Works, Ltd..Montreal
The Wire & Cable Co. ....Montreal.
Wire Goods, Bright
Steel Co. of Canada, Ltd..Hamilton, Ont.
Wire, Insulated, Copper
E. F. Phillips Elec. Works, Ltd..Montreal.
The Wire & Cable Co. ....Montreal.
Wire Rope Clips
American Hoist & Der. Co.St. Paul, Minn.
Wire, Telegraph and Telephone
Chapman & Walker, Ltd ....Toronto.
E. F. Phillips Elec. Works, Ltd..Montreal.
The Wire & Cable Co. ....Montreal.
Wire, Transmission and Trolley
Chapman & Walker, Ltd ....Toronto.
The Wire & Cable Co. ....Montreal
Wrenches, Cast Steel
American Brake Shoe & Fdry. Co. Mahwah
Yachts
Polson Iron Works, Ltd ....Toronto

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THE

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Old Series, No. 242.
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For Subscription Rates, See page 529.

Improvements in the Modern Locomotive.

By George Black, Road Foreman of Locomotives, G. T. R., Stratford, Ont.

In preparing this paper I have endeavored to give a review of the most important improvements in the modern locomotive brought about by the varying conditions and requirements from the time of its first appearance to the present time. In doing this I have been unable, in the limited time at my disposal, to give the exact dates of the introduction of the various improvements, but have trusted chiefly to my memory.

The first idea of steam navigation was set forth in a patent obtained in 1736 by Jonathan Hulls, for a machine for carrying vessels against wind and tide. In 1778 Thomas Paine proposed in America this application of steam. In 1781 the Marquis de Jouffray constructed one on the Seine, and in 1785 two Americans published descriptions of it.

In 1789, W. Symington made a voyage in one on the Forth and Clyde canal, and soon after Fulton visited Mr. Symington, took notes and then went to America and in 1807 started a steamboat on the Hudson River and made a success of it. In June 1819, the Savannah of 350 tons went from New York to Liverpool by steam. Steam power to convey coal on a railway was first used by Blenkinsop at Hunslet near Leeds, and afterwards for passengers and goods on the Stockton and Darlington Railway, the speed was from five to eight miles an hour.

In the trial of locomotive steam carriages at Liverpool, in October, 1829, Braithwaites' carriage, including water and fuel, weighed 8,220 lbs. Stephenson's weighed 9,216 lbs., and ran from 14 to 18 miles an hour. Braithwaites' ran 22 miles an hour, the size of the cylinder was six ins., the stroke 12 ins., and the load hauled was 10 tons. These figures are in striking contrast to the modern mastodon weighing 225 tons, and having cylinders of 36 ins. diameter, and 34 ins. stroke, and capable of hauling 4,000 tons or more, but it is a great tribute to Stephenson that we find on the great majority of the locomotives in service today the link motion for steam distribution invented by him, and the strange part of it is that we have not as yet found anything to beat it. Stephenson also saw the advantage of added weight to increase the traction power of an engine, and engines were made heavier and wheels were coupled in series to bring about this result.

Then we find another important matter to be considered, viz., the power to control and stop the engines and trains at the required time and place. This brought about the introduction of brakes, the first of these was of the crudest type and consisted of a block of wood attached to a long lever which, when not in use was hung on a hook, and when required was let down off the hook and exerted a retarding force on the wheel. The next thing was a brake operated by a crank, and a series of levers which did the service for a great many years until the introduction of power brakes, the first of which I believe was the vacuum brake which consisted of a series of suitable levers and a cylinder on each car and engine, and a pipe connecting all to an ejector on the engine. This ejector was capable of creating a partial vacuum in the cylinders, and the pressure of the atmosphere acting on the opposite side of the piston caused it to move and exert a force through the levers, etc., to the wheels, and thus bring about the desired result, but this had the great disadvantage that when the pipe connection got broken or leaked or the train broke in two the brakes could not be operated. This condition brought about the introduction of the automatic vacuum which would overcome this difficulty, for when the train broke in two or the pipes of the brake were disconnected, the brakes would automatically apply and stop the train. The name of the inventor of this brake was Smith. About this time there were other brakes operated about in the same manner, some by steam and some by compressed air, but it remained for Geo. Westinghouse to give to the world the brake that has made possible the controlling of heavy trains at high speeds, and added the element of safety in handling the commerce of the country and the enormous amount of passengers that travel over the great railways of today. The first of these brakes, as I said before, was rather crude, but as time went on, the requirements were noted and met on all sides, so that from the beginning, with the brake only on the engine, and then applied to a few passenger cars, we now have brakes on every wheel of the train, whether passenger or freight.

H. B. Spencer,
Superintendent, District 4, Eastern Division, C.P.R.

When the Westinghouse automatic brake was first introduced we had the old style plain triple valves operated by a three way cock on the engine, and it was found that the operation on long trains was slow on the rear cars and quicker on the cars next to the engine, than when the flow of air from the train pipe was suddenly cut off by the abrupt closing of the three way cock by the engineer, the air would surge from the rear of the train and release the brakes on the front of the train and engine, and sometimes cause damage to draft gear. This brought about the introduction of the equalizing discharge valve, which, by its gradual opening and closing, made the brakes operate uniformly. Then again on longer trains with plain triples, the brakes in an emergency were too slow to apply on the rear of trains and this brought about the introduction of the quick action triples which operate so quickly that the brakes on the last cars are set before the slack has time to run in. Pump governors have also been put on to govern the pressure of air in main reservoirs, feed valves to regulate the pressure in train pipes and auxiliaries and reducing valves to regulate the brake cylinder pressures in the operation of high speed brakes, so that trains running at high speeds can be brought to a stand in the shortest possible distance without shock or the skidding of wheels.

The improvements which have been made to the modern locomotive, are of two classes, those which have been adopted on account of their mechanical advantages, and those which have been adopted to effect economy in steam consumption. The piston valve, the Walschaert valve gear, and the mechanical stoker belong to the first class, and will be considered in the above order. To the second class belong the compound engine and the superheater. These are, without doubt, the most important improvements made in the locomotive and have, with one exception, the Walschaert valve gear, been successfully developed within the last 15 years.

THE WALSCHAERT VALVE GEAR.

The real test which should be applied to every detail which is assumed to in-

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S. A. MEGEATH,

PRESIDENT

crease the cylinder power of a locomotive, concerns its effect on the steam consumption of the engine. Will its use produce a horse power upon less steam than the device which it supersedes. If it will, then, when the boiler is supplying all the steam it can make, it will permit the cylinders to deliver more power than they were able to do without it. If it does not increase the efficiency of the cylinder action it cannot really increase the power.

This suggests the inquiry as to whether the distribution of steam in the cylinders of simple engines is satisfactory, whether, for example, we ought to persist in efforts to secure square cornered cards. The reply is, that in most cases wherethe gear is sufficiently heavy and stiff, to do the work for which it is designed, the distribution as obtained from present gears is satisfactory. The typical locomotive card, displaying the wire-drawing action throughout the cycle, which, especially at high speed, is strongly marked, is, after all, a card of high efficiency. The steam consumption of the locomotive is less than that of most other forms of high speed steam engines employing atmosphere exhaust, even when the speed is increased to limits which far outstrip those common to stationary engines. Its work is to be regarded as highly efficient. So well do the better class of valve gears which are now in common use perform their work that anyone who attempts to increase the power of a modern locomotive by improving its steam distribution will find but a narrow margin on which to work. The Stephenson link motion has been used on locomotives for very many years, almost since its first development. However, on large power, the Walschaert gear, on account of its important mechanical advantages, is displacing it to quite an extent.

The most suitable form of radial gear for locomotives is unquestionably the one invented by the Belgian engineer, Egide Walschaert, in 1844, and applied to locomotives a few years later, but it was not properly understood or appreciated during the first 20 years following its invention, and has ever since then made slow headway until a few years ago, when it took quite a sudden move forward and is at present the dominating valve gear throughout the continent of Europe, and is fast gaining ground in this country. This gear may be said to be based on a fundamental principle of its own, but has been subject to a few modifications without any improvements over its original form. The motion of the valve is derived from two sources—namely, the main crank by connection to the crosshead, and from an eccentric placed approximately at right angles to the main crank. The crosshead connection imparts the motion of lap and lead at the extremities of the stroke of the piston at which moment the link is in its central position. Therefore in mid gear with the reverse lever in its centre notch, this will be all the motion imparted to a radius equal to the length of the radius bar. By moving the reverse lever forward the eccentric motion is brought into combination with the motion from the crosshead, producing a valve opening for a forward motion of the engine, and by moving the reverse lever backward the link block is brought to the opposite side of link fulcrum, resulting in a valve opening governing the backward motion of the engine, in effect similar to that of the Stephenson motion. The action of this one eccentric is therefore the same as if there were two eccentrics, one for forward and one for backward motion placed diametrically opposite each other, and the angle of advance in the Stephenson motion is taken care of by the main crank in the crosshead connection. The latter motion being constant, it follows that the lead remains constant at all points of cut-off.

The proportions of the various parts of the Walschaert gear cannot be determined experimentally, nor should any change in setting the valves be made unless the effect of the change is known in advance. It is, therefore, important that the different parts of the motion should be made and set correctly from the beginning, and there will be no need for changes when the original dimensions are maintained. The difference in this gear for outside and inside admission valves must be considered in setting the eccentric crank, and as the forward motion of the engine should preferably be taken from the lower end of the link, when the eccentric crank will follow the main crank for inside admission valve and lead the main crank for outside admission valve. For outside admission valve the radius bar is connected to the combination lever below the valve stem and for inside admission above the valve stem.

The motion is reversed by an arm connected to the radius bar. The sliding lifter, the best method of suspension of the radius bar but due to wheel arrangements of various designs of engines, this is not always applicable, but must be substituted by swinging lifters, which when properly placed give for all practical purposes equally good results.

Following are general notes for adjusting Walschaert gear:—

1. Ascertain by the following method the position of the eccentric crank. Mark the position of the link relative to its midde position on both of the dead centres of the main crank. If the position of the link is the same in both cases the eccentric crank position is correct, if not, the eccentric crank should be lifted until this occurs, or as near so as possible.

A TRIBUTE FROM QUEBEC.

J. G. Scott, ex-General Manager Great Northern Railway and Quebec and Lake St. John Railway, writes from Quebec:—

"I have much pleasure in enclosing my renewal subscription to the Railway and Marine World. I am ashamed to send so small a trifle for so valuable a publication. It is replete with the most interesting information, and is worth ten times the subscription. I do not see how any railway man in Canada could be without it."

2. After the eccentric crank has been correctly set, the eccentric rod should be lengthened or shortened, as may be required to bring the link in its middle position, so that the link block can be moved from its extreme forward to its extreme back position without imparting any motion to the valve.

3. The difference between the two positions of the valve on the forward and back centres of the engines is the lap and lead doubled, it is the same in any position of the link block and cannot be changed by changing the position of the reverse lever.

4. The train marks of the opening moments at both ends of the valve should be marked upon the valve stem and the latter lengthened or shortened until equal leads at both ends are obtained.

5. Within certain limits this lengthening or shortening may be made on the radius bar, if it should prove more convenient, but it is desirable that its length should be so nearly equal to the radius of the link that no apparent change in the lead should occur in moving the link block as stated in no. 2.

6. The lead may be increased by reducing the lap, and the cut-off points will then be slightly advanced. Increasing the lap produces the opposite effect on the cut-off and reduces the lead by the same amount. With good judgment these quantities may be varied to efface the irregularities inherent in transforming rotary into lineal motions.

7. The valve events are to a great extent dependent on the location of the suspension point of the lifter of the rear end of the radius bar, when swinging lifter is used, which requires that this point should be properly laid out by careful plotting.

The chief point of difference between the Walschaert and Stephenson gear, when both are in proper condition is, as previously stated, that the former gives to the valve a constant lead at all cut-offs whereas the latter produces an increase of lead by linking up the engine and becomes excessive at short cut-offs. This very point has been the subject for much controversy, and has probably done more than anything else to retard the progress of the use of Walschaert gear, as it has been argued that in full gear, when the speed of the engine, generally is low, only small lead is needed, but at a high speed more lead is required, which is accomplished by the Stephenson motion, though this admittedly becomes excessive at early cut-offs, causing considerable compression and pre-admission detrimental both to maintenance and smooth running, and in fact, to some degree counteracts the work done by the steam on the driving side of the piston, which thereby also affects the speed of the engine.

It was generally discovered that the required lead for short cut-off and high speed was of no practical detriment to the working of the engine in full gear, as the pre-admission at that point is disappearingly small. The proper amount of lead, however, is dependent somewhat on the service, and the port opening becomes larger with a larger lead, or in other words, when all other conditions are equal in a Stephenson or Walschaert gear, the openings differ by the same amount as the lead, so that one-sixteenth more lead gives one-sixteenth wider port opening, but it is hardly advisable to make this over one-quarter or five-sixteenths inch as a maximum, as the advantage of any additional port opening by means of a larger lead is more than offset by the increase in compression and pre-admission, the larger lead would bring about at early cut-offs, and would do no good in the later cut-offs even if it does no harm.

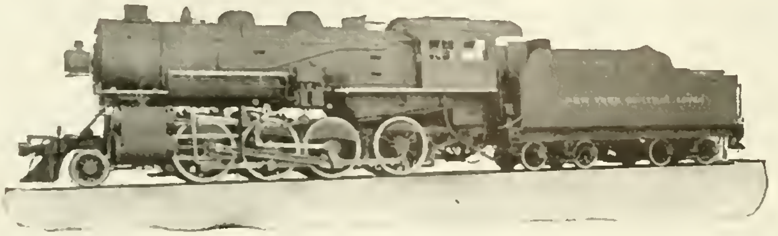
There is no fundamental reason why the Walschaert gear should produce any economy in steam consumption over the Stephenson motion when both are in the best condition, but an advantage in this respect comes to the former by the fact that it remains in its good condition if once made so, from one stopping to another and is, therefore, on an average more economical both in steam consumption and maintenance of the gear than the latter.

On one engine, no. 912, on the Lake Shore and Michigan Southern after making 39,000 miles, the total lost motion in the valves was one-sixteenth inch. Another engine, no. 5912, equipped with Stephenson link motion had five-sixteenths inch lost motion in the valve stem after making 32,000 miles.

Large eccentrics, besides occupying too large space, wear unevenly, and lubrication is difficult with the high surface velocities of the larger sizes. With hardened pins and bushings the Walschaert gear has not this disadvantage.

Stephenson links, under the influence of two eccentrics, move through wide angles, resulting in a wedging action of the link block, which strains the gear when working hard, and produces lost motion, whereas the Walschaert links

LOCOMOTIVES



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Total weight of engine in working order 237,500 pounds
Weight on driving wheels 212,000 pounds
Diameter of driving wheels 63 inches
Boiler pressure 200 pounds
Cylinders 23 x 32 inches
Maximum tractive power
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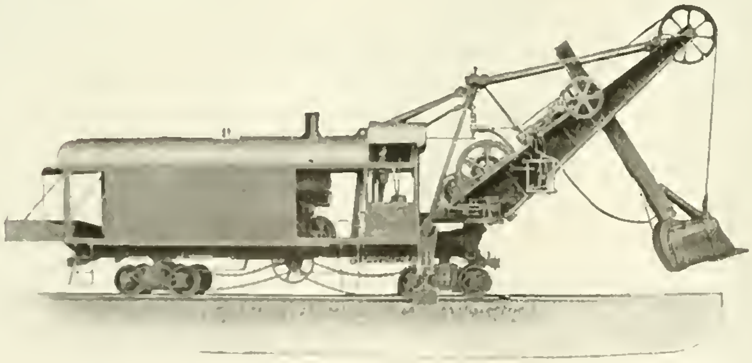

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Removal of the hoisting machines from the car body permits the use of locomotive type of boiler, giving a greater amount of heating surface and increased steaming capacity.

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The purchase of an Atlantic shovel means additional dollars, because of the saving in cost of fuel, repairs and oil.

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oscillate through smaller angles, producing practically no wedging effect and less lost motion.

In many cases the gear can be designed so that the motion is transferred from the eccentric crank to the valve stem in one vertical plane so that practically all of the pins can be put in double shear and all tendency to twist the valve motion is avoided, a thing that is almost impossible in the Stephenson motion.

While it may not be possible to adjust the valve as readily with the Walschaert gear as with the Stephenson motion, for the reason that the parts and connections are not as susceptible to change, it is not as liable to become disarranged, and if correctly designed and fitted up will give accurate results.

Equal cut-offs in both ends of the cylinders are more easily secured than with the Stephenson motion, which requires an exact location of the saddle pin with regard to the centre line of the link, and the play of the engine on its springs has no more effect on the valve than has the Stephenson motion.

The constant lead of the Walschaert motion prevents the sidling of the cylinders by the piston valve when the piston is at the end of its travels or approaching it, whereas with the link motion either by derangement or excessive wear, the valve laps the ports at the end of the stroke, causing excessive compression and many other consequent troubles.

The accessibility for attention and examination of the Walschaert gear is a great point of undisputed advantage over the Stephenson motion. There is not enough room for the Stephenson gear under a very large locomotive. The eccentrics are crowded, and proper inspection, not to speak of proper care, is extremely difficult.

It will be borne out in the course of time that the lateral bracing between the frames permitted by the Walschaert gear will bring about a considerable reduction in the maintenance expenses by the less wear and tear this additional rigidly will impart to the entire engine.

Another very important advantage of the Walschaert gear over the Stephenson gear is the great saving of weight possible. A saving of 1,700 lbs. was possible by using the Walschaert gear in the case of a very heavy passenger locomotive built for the Lake Shore and Michigan Southern. Stephenson gear weighing as much as two tons is far too heavy to be satisfactorily reversed twice in every revolution on fast running locomotives.

And finally a feature which appeals particularly to the engineer is the ease of handling the reverse lever when the locomotive is running at a high rate of speed.

THE PISTON VALVE.

With the large increases of the power developed in one cylinder of the modern locomotive and the high steam pressure used, the ordinary and balance valves increase in size proportionately and while they are balanced in the same ratio as the valves on smaller engines the difference in the unbalanced surface increased with the size of the engine, and this combined with the additional weight of the valve and the yoke, increases the wear on the valve, the motion and the eccentric straps and also the work necessary on the part of the engineer to handle the engine.

For these reasons the piston valve, which is perfectly balanced, has been very extensively adopted. Another reason for its adoption is its adaptability for compound cylinders since one valve can be arranged to effect the steam distribution of two cylinders, one high and one low.

With the slide valve on a large engine it will hardly exceed 25,000 miles before the valves need facing, which means the loss of the engine for a day, while if the piston valve were used and the rings were broken or needed attention the valve can be removed, new rings applied in from 30 to 40 minutes and the engine is ready for service. Of course the bushings wear, but they very rarely need renewing for less than 200,000 miles.

Another advantage to the piston valve over the slide valve is accessibility to its parts. When an engine needs its valves reset after running for some time, the port marks on the valve stems become obscured, and possibly the man, who is about to do the work, has a different train or wants to get new marks on the stem. With the slide valve, the machinist has to take off the steam chest cover before he can take his new port marks, while with the piston valves he simply has to remove one plug on each end of the chest leading directly to the edge of the steam port. With the piston valve there is a much larger port opening than with the slide valve, and this large opening gives a much better admission and release of the steam to and from the cylinder than can be obtained with the slide valve.

Since the piston valve is so perfectly balanced it is not necessary to have a small surface bearing valve, as it is with the slide valve. For this reason the ports can be brought up straight to the valve chamber, instead of curving up as they do for the D valve, resulting in a reduction in clearance loss for the piston valve due to the shorter ports.

There are two types of the piston valve, inside and outside admission. These are modified, some being solid and some hollow.

With the use of the inside admission piston valve, the metallic valve stem packing may be done away with, as there is only the exhaust pressure on the packing side, which results in an appreciable saving in maintenance cost, as the fibrous packing answers the purpose and lasts satisfactorily a long time.

Another feature of the inside admission valve is the protection to the live steam by being jacketed by the exhaust cavities, thus delivering the steam to the cylinder at a higher temperature than would be the case with the outside admission valves. For these reasons the inside admission valve is used much more than the outside admission.

Since the difference of pressure on the two ends of the inside admission solid valve often amounts to over a ton, for each exhaust, the valve acts as a piston and takes up the slack in the valve motion and increases the lead, which is very hard on the valve gear.

For the outside admission solid valve, the moment after exhaust takes place the valve becomes unbalanced on the admission side as the steam enters the cylinder and the higher pressure on the opposite end takes up the slack and decreases the lead as the valve gear wears.

In the outside admission hollow valve the area of the valve stem unbalances this type to the extent of about 600 lbs. at 200 lbs. boiler pressure, and always in the same direction, which causes the engine to go lame as the gear wears.

With the inside admission hollow valve these defects are absent and the valve is so well balanced that it works very much more easily and does not get out of square so soon as the other types. For these reasons it is the type of piston valve most extensively used.

With the ordinary slide valve, when there is an accumulation of water in the cylinder, the piston in its movement forces the water through the ports to the valve seats, the valve lifts and lets the water pass into the steam chest and out the stack. This will also be true for any excess pressure, on the piston and head, that may take place at the end of a stroke. With the piston valve, the valve sits solid in the bushings and will not admit any water or steam to pass over from steam port into steam chest when that port is closed by the valve. The pressure of this water would cause damage to the engine by the breaking of the cylinder head or the piston or bending the main rod if means were not taken to provide for it. This is done by a combined pops and by pass valve, the valve chamber being cast in one with the cylinder. This effectually eliminates the danger of any excess compression.

MECHANICAL STOKERS.

By the process which goes on within the firebox of the modern locomotive each pound of coal will, under favorable conditions, sustain one i.h.p. for from 12 to 15 minutes at the speed of 10 miles an hour, it will serve to carry six tons of freight per mile. Within certain limits the power developed is nearly proportional to the coal burned.

In the development of the modern locomotive, grates have been enlarged, and heating surface extended that larger amounts of fuel may be burned. In one direction only has the designer found his way blocked against his ingenuity. He has not been able materially to augment the strength of the fireman and consequently when running under constant conditions the power of the locomotive has not increased in proportion to its dimensions. A laborer is working at a fair rate when, in unloading coal from a gondola car, merely dropping it over the side, he handles 6,000 lbs. an hour. At the limit a locomotive fireman will handle an equal amount standing on an unsteady platform placing it upon some particular part of the grate and usually closing the door after each shovelful. This rate will serve to develop, approximately, 1,200 i.h.p. This rate cannot be exceeded under sustained conditions of running, though for short intervals the rate of power may outrun the rate of firing. Because of the limitations upon the strength of the fireman it is probable that further growth in locomotives will await the coming of an automatic stoker, which will remove its operation from dependence upon the physical condition and endurance of a single man.

In order to provide for this the following different makes of stokers have been developed: the Victor, Kincade Lucky, Straus, Crosby, Monarch, and Haydon. All of the stokers are very similar in operation, either by a series of pistons or plungers which produce longer or shorter exhausts or strokes, or steam jets, and tend to throw the coal closer to the flue sheets or the back end of the fire box and spread the coal very uniformly over the grate surface. Some of these use deflection plates to spread the coal.

The Haydon stoker is a representative type of the steam jet design. The method of operation is as follows: The coal is taken from the tank through a grating with three inch openings by an elevator operated by a quadruplex engine, then it passes into a conveyor and is elevated to the conveyor located over the fireman's head and is dropped into a hopper over the firebox door by a worm screw and falls by gravity through a slide gate opening in the firebox door, on to a table located just inside the firebox door 24 ins. long and 7 ins. wide and is blown by a blast of steam varying in length as desired, by five separate nozzles or pets in the firebox door, which have a tendency to cool the table and prevent its burning out. The centre jet blows the coal towards the flue sheet. The two jets on either side are located to place the coal in the front corners of the firebox. The two outside jets are located so that the coal will be distribut-

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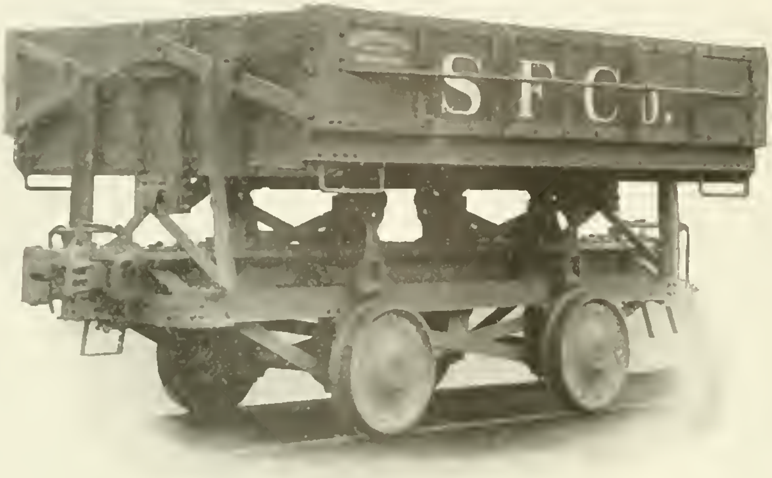

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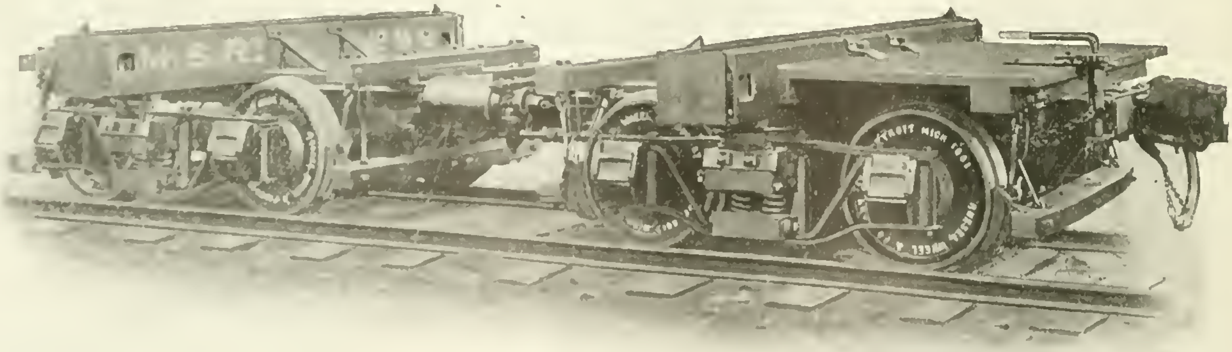

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ed along the sides and back corners of the firebox. They are governed by separate valves to regulate the blast of steam through each valve by common steam valves and can be adjusted at will at any time.

The steam that furnishes the blast to place the coal is controlled by a quadruplex engine, located on the back end of the boiler butt, which has a crank movement actuated by a screw wheel, operating a control valve, which admits steam through a one inch pipe passing to the nozzles, which are regulated by means of a globe valve. The control valve, as a general proposition, is run only one turn open and varies with the weight and amount of coal to be handled. The length of the blast is governed largely by the raising or lowering of the latch on the trip valve and the speed at which the engine is run. The greater the speed the less coal is thrown at one blast. If desired the valve can be tipped by hand and all of the coal in the hopper can be blown into the firebox. In fact, the fire can be covered black inside of half a minute. The steam connection to the engine operating the stoker conveyor is by one inch pipes, that to the stoker connection is three-eighths inch pipe which is open probably only a quarter of a turn. This stoker has on various occasions fired a locomotive 30 and 40 miles and even farther without there having been any necessity to open the fire door, and on opening the door the fire was found to be absolutely level. Occasionally coal will pile up in some place in the firebox, making it a necessity that it be levelled down, and may be caused by a clinker forming or a little deviation in front of engine and holes in grate. All that is necessary is to close the hopper, blow the coal off the table, when the door can be easily opened and the fire levelled with a rake if desired. There is nothing to be removed and it is a very easy operation, nearly as much so as though the engine were being fired by hand.

The Victor stoker is of the plunger design, and consists of the following essential parts: 1. A main cylinder and a trough in which reciprocates a piston and plunger which, with a variable stroke, throws the coal to the different parts of the firebox. This variable stroke is given to the plunger by means of a rotary valve, three separate steam ports, leading from the said valve to the rear end of the cylinder, and three choke plugs—one for each of the said steam parts. 2. A small controlling engine. It has been found desirable to place the controlling engine on the boiler-head on the fireman's side. This removes the liability of condensation and consequent dryness of engine parts when placed on and below the stoker itself. The steam for the operation of this engine is taken directly from the dome. 3. A hopper with two spiral conveyors journaled in the bottom of the hopper pan. The conveyors carry the coal to the front of the hopper on to the apron of the plunger, which, upon the return of the plunger, falls by gravity in front of it, giving a regular and uniform feed. The speed of the conveyors can be increased or diminished by giving more or less steam as may be required, to the controlling engine. This also increases the number of strokes made by the plunger but does not affect its velocity, or in any manner affect the distribution of coal in the firebox, the latter being governed by the three choke plugs.

4. A smaller steam chest containing a rotary valve which regulates the number of strokes made by the plunger. The portion of the stoker forming this valve chest is cast on one piece with the main cylinder, and has three separate steam ports leading to the rear end of the cylinder for the admission of steam behind the plunger or piston. These steam ports terminate in one common port before entering the rear end of the cylinder, the steam, after reaching this common port, communicates with the rear end of the cylinder, first through a small preliminary port at the end of the cylinder (which also acts in the form of compression by retarding the exhaust on the last portion of the return stroke), and after the piston has advanced a short distance it uncovers the main port, which also leads from the common port, giving free passage to the steam. A choke plug is placed in each of the steam ports between the valve sleeve and the common port. The function of the three choke plugs is to vary the amount of steam reaching the rear end of the cylinder through the various ports and thereby giving a variable stroke to the plunger. The valve operates in a rotary manner, each of the ports stopping full open in front of its corresponding steam passages in regular succession. Beginning with number three (the port nearest the rear end of the stroke) the steam, after leaving this valve passes through port number three into the common port and the rear end of the cylinder. By choking down this steam port until it is almost closed we get a very light stroke of the plunger, distributing the coal over the grate near the fire door. The other two operate in the same manner, each taking its respective turn. They are adjusted so that more steam is admitted on the second stroke than on the third, thus distributing coal over the middle portion of the grate, and more on the first than on the second, thereby scattering coal over the front end of the grate. By this adjustment of the choke plugs any range of distribution can be obtained that may be desired.

The rotary valve and cylinder are provided with suitable live steam exhaust ports for the return of the plunger and the exhaust steam from each end of the cylinder. In the front end of the main cylinder, is a very small live steam port, connected directly with the live steam supply, and its function is to return the plunger after its forward stroke, and also to add volume to the steam retained after the piston has passed over the forward exhaust port, this giving the desired compression to prevent the piston striking the front cylinder head. By means of a valve this port can be enlarged to give increased compression, necessary when expelling water from condensed steam in starting the stoker when it is cold.

5. The furnace door. Each machine is supplied with a furnace door made to fit the standard door frame of the locomotive to which the stoker is to be attached. This door has an opening to receive the stoker through, and is provided with suitable brackets for holding the machine in position. Cast upon its inner side are curved lugs, which serve the purpose of hinges for a deflector for spreading each charge of coal over the width of the firebox. The end of this deflector can be raised, if necessary, to aid in the distribution of coal by means of a set screw directly under its centre. It also has a small vertical sliding door for use when inspecting the fire, and the deflector can be turned vertically and held in place by a latch to close the opening when the stoker is removed. When using the stoker the smoke is very much lighter, indicating more thorough combustion of the gases. The darkest color when the stoker is used is not more than brown, while most of the time the emission from the stack is pure steam. This is a most important feature when it is taken into consideration that the smoke problem of railroads is becoming serious, now that the large cities are objecting so much to the smoke nuisance. There is no doubt that with the stoker in use very much less trouble with leaky flues will be found, on account of its maintaining a more even heat in the firebox. The sheets of the firebox will last longer for the same reason. It has been proved that corrugation in fireboxes is largely due to the changes in temperature. When the stoker is used the steam pressure may be kept absolutely constant. This is due to the irregularity with which the coal is placed on the grates, the evenness of the distribution and also the fact that the furnace door being closed, the furnace is not cooled by the inrush of air. This should effect a great saving in coal, since it is estimated that 15 lbs. of coal is lost when a boiler pops. With a stoker properly installed and set up in a tank, using coal that it will handle properly, the fireman can operate the engine with a saving of 33 to 50% labor, at the same time maintaining a uniform pressure of steam with a large reduction of leaking of flues and furnishing steam under all conditions better than can be done by hand firing, and with a noticeable saving in fuel.

COMPOUND LOCOMOTIVES.

In endeavoring to secure efficiency in the utilization of the steam, thermodynamic reasons make it imperative to use high pressure steam and a long expansion. The high ratio of expansion required cannot—from the point of view of steam economy—be so efficiently carried out in a single cylinder as in two or more cylinders. If expanded in one stage only the condensation and piston leakage losses are too great for efficiency. In marine service, where efficiency is of first importance, single expansion engines have been altogether superseded by multiple expansion engines in the large sizes. In locomotive practice steam economy is of great importance, but the difficulties of maintenance make unnecessary complications undesirable, and thus practically limit the number of successive expansions to two. In order to take advantage of this economy in steam consumption, and consequently coal consumption, the following types of compound have been developed. The two cylinder cross over compound, the four cylinder tandem compound, the four cylinder balance compound, and the Mallet articulated compound.

The two cylinder compound can show practically the same efficiency of steam consumption as the four cylinder, and has fewer working parts. On the other hand, the power developed is not always equally divided between the two sides of the engine, for instance, when the high pressure cylinder is being worked at a long cut-off the steam exhausting from it and supplying the low pressure cylinder is at a much higher pressure than that exhausting from the high pressure at a short cut-off, causing more work to be done on one side of the engine than on the other. Also the excessive diameter of the lower pressure cylinder required for high power increases their liability to break and requires an excessive width of the locomotive, and this puts a limit on this class of engine.

The tandem compound gives equal power on both sides of the engine and economical steam consumption. The heavy reciprocating parts, due to both pistons being on the same rod, make the engine difficult to balance, making it very undesirable for high speed work, although at low speeds this is not a great disadvantage. The only factor limiting the growth of this locomotive is the rigid wheel base, the best that can be done being to get six axles in 24 ft. 7 ins. or five axles in 19 ft. 9 ins. Apart from the great internal resistance of a twelve coupled engine of this description the excessively long wheel base would render it extremely awkward on curves.

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If more tractive force is required, the Mallet type compound seems to offer the greatest facilities for development. The wheels are in two groups, and as these groups have a flexible connection between them, the locomotive can curve easily. The rear group of wheels is driven by two high pressure cylinders, and the front group by the two low pressure cylinders, so that the same power is developed on both sides of the engine. The double expansion of the steam gives economy in fuel and the whole construction of the locomotive is comparatively simple. These engines have been used almost altogether for taking heavy trains over very heavy grades, very little in road service, and altogether for low speed service.

The four cylinder balanced compound is, considering everything, the best of these types. By using four cylinders, two high and two low pressure, and placing them so that each high pressure moves in the opposite direction to the corresponding low pressure piston, both the internal and external forces can be largely balanced. Where only two cylinders are used, the moving parts of the engine must perforce be largely left unbalanced, and at high speeds the engine rocks itself to pieces and exerts a destructive influence on the track. With the perfect balance obtainable with four cylinders these difficulties may be largely avoided. The mechanical advantages of proper balancing are obtainable with four high pressure cylinders, but the four cylinder compound adds to the balancing, the economies resulting from the double expansion of the steam. To this combination of advantages is due the high place taken in modern locomotive practice by engines of the four cylinder balanced compound class.

There are also mechanical advantages which favor the adoption of the four cylinder balanced compound. For one thing, the weight on the driving wheels may be increased on account of the complete elimination of the hammer blow on the track. In the case of an engine built, it was decided in view of this fact to increase the weight per driving axle from 47,000 to 55,000 lbs., which would result in a greater tractive effort for this type of engine for the same number of wheels.

On account of the large amounts of steam which can be worked through the cylinders at long cut-off there is an increase in sustained horsepower at high speeds; without modification of the boiler. The original simple engine developed 1,400 to 1,500 indicated horsepower; the four cylinder balanced compound has developed from 1,900 to 2,000 i.h.p., actually realizing 1,688 at 67 miles an hour, and 1,980, at 75 miles an hour in service. (From results of a test of a four cylinder balanced compound on the Pennsylvania Rd. testing plant at the Louisiana Purchase Exposition at St. Louis in November, 1904.)

Also the power is divided between four cylinders and may be divided between two axles resulting in a reduction of bending stress on the crank axle, and the use of light moving parts which renders them easily handled, and which minimizes the wear and repairs of parts.

The De Glehn four cylinder balanced compound, which is used extensively in Europe, is characterized by an arrangement of cylinders, which divides the application of the power between two driving axles and provides a separate valve gear for each cylinder, so that high and low pressure cut-offs can be independently varied. The high pressure cylinders are placed outside, while the low pressure are inside between the frames. The Walschaert valve motion is used throughout. The gears for the low pressure cylinders are driven from eccentrics placed on the forward driving axle, while those for the outside cylinders are driven from the second pair of driving wheels by return cranks placed on the crank pins.

The outside, or high pressure cylinders are connected to the second pair of driving wheels, while the inside, or low pressure, are connected to the first pair, which has a cranked axle. In order to keep the main rods of as nearly the same length and weight as possible, the high pressure cylinders are set some distance in the rear of the low pressure.

In the Von Boiries type, also used in Europe, the cylinders are all in the same transverse plane, the high pressure cylinders being on the outside. There is only one valve motion for each side, but there are four valves, one for each cylinder. The main rods of both high and low pressure cylinders are connected to the front driving axle, resulting in a somewhat short main rod.

In America there are also two principal types in use, the Cole and the Vauclain. In the Cole type, the low pressure cylinders are located outside of the frame and are connected to the second driving axle while the high pressure cylinders are inside the frames, and are set in advance of the outside cylinders so that the back head of the high pressure is even with the front head of the low pressure. The high pressure cylinders are connected to the leading pair of driving wheels, which has a crank axle. There are two piston valves, one for each cylinder, on the same valve stem, but there is only one valve chamber. The high pressure valve is arranged for central admission and the low pressure for central exhaust, both valves being hollow.

The Vauclain type differs from the Cole in placing the cylinders in the same transverse plane, the high pressure being inside and the low pressure outside, of the frames. There is only one piston valve used for both cylinders.

In both the Vauclain and the Cole types the connections of the main rods may be varied. By setting the high pressure or inside cylinder high and giving it an inclination all the main rods may be connected to the second driving axle and thus may be the same length. Where the first driving axle is far enough away from the cylinders all the main rods may be connected to the front driving axle.

SUPERHEATED STEAM AND SUPERHEATERS.

The necessity of greater economy in steam work is daily becoming a matter of increasing interest. The simple locomotive using saturated steam has been excelled by the compound four cylinder balanced locomotive, yet the fact remains that there is still room for improvement and that other and far more effectual means of obtaining an increase of power and economy lies in the use of superheated steam. It unquestionably constitutes the most important feature of steam locomotive development of modern times.

In the matter of the evident advantages resulting from the use of superheated steam, care must be taken to separate the increased efficiency of the boiler from the corresponding increase in cylinder efficiency, which does not depend, as in the case of saturated steam, upon an increase of pressure. On the contrary, superheated steam at a pressure of 90 lbs. per sq. in. can work as efficiently as the other at 180 lbs. The running has, up to the present, been done with a short cut-off ranging from ¼ to 1-10 of the stroke, while the throttle is kept wide open or partially closed, dependent on the speed.

The reason for this is, that with a partially closed throttle, the absolute superheating rises. For example, if steam at a pressure of 180 lbs. per sq. in. is superheated to 575° F. the actual superheating is 575°—377, which is temperature due to pressure, =198°. At 75 lbs. per sq. in. with the same superheating we have an effective superheat of 575°—287 =288°, so that the excess is such that cylinder condensation does not take place, even with an early and economical point of cut-off. In this is to be found a great advantage of superheated steam.

This advantage is only slightly augmented with an increase of pressure, and any closing of the throttle is rather apt to be wasteful, because the rise of temperature, above that due to pressure by an excessive closing of the throttle, can scarcely be detected in the working of the cylinder.

It has been said by Peabody that the safe production of superheated steam at a temperature of 570° F., in a locomotive boiler, and its successful use in the cylinders was an impossibility.

Whenever superheated steam has been used to give a notable gain in economy the superheating has been accomplished in a separate apparatus which has taken the form of a coil of pipe exposed to the products of combustion beyond the boiler.

Plates and tubes, thin enough, endure long service in a boiler when exposed to the fire, because they are kept at a moderate temperature by the water in the boiler. If steam is to be superheated strongly in a coil of pipe or other device, which is exposed to hot gases, the metal of the superheater must be strongly heated, and is sure to waste away rapidly. There is no material that can stand long service when exposed at once to high pressure and a high temperature. There is little risk therefore in predicting that all superheating devices now used will eventually be discarded for this reason.

The best design by Schmidt was a superheater in the smoke box, directly connected to the boiler. Examination of one of these superheaters in an engine after it had been in service for two years showed it to be free from any defects, although with suitable coal it raised the steam to a temperature of 645° F. The valves, packing boxes and pistons were also in excellent condition. So that Peabody's prediction is not borne out in actual practice.

The development of the Schmidt idea and others has, however, demonstrated the great advantages of superheated steam for locomotive work, and tests show that the efficiency of the boiler will be increased about 25% by superheating the steam 180° F. Initial condensation in the cylinders can also be reduced by the use of superheated steam. There appears then to be a prospect of bringing the locomotive back to the construction of the simple engine, and at the same time increasing its efficiency.

Schmidt defines superheated steam as steam having a temperature of at least 575° F. or in general a steam which at a pressure of 150—180 lbs. has been raised about 180° above the temperature corresponding to its pressure at saturation. Such a high degree of superheat absorbs about 10% of all the heat generated. Experiments made with stationary steam engines show that the efficiency of the boiler was increased about 25% when steam superheated about 180° F. was used. The saving in feed water averaged about 33%, and in coal 25%. This saving was in part due to the short cut-off which is possible when superheated steam is used.

The great value and advantage of using superheated steam lies not alone in the increase of power but also in the substantial reduction of steam consumption.

In American practice the steam is generally superheated about 150° F.,

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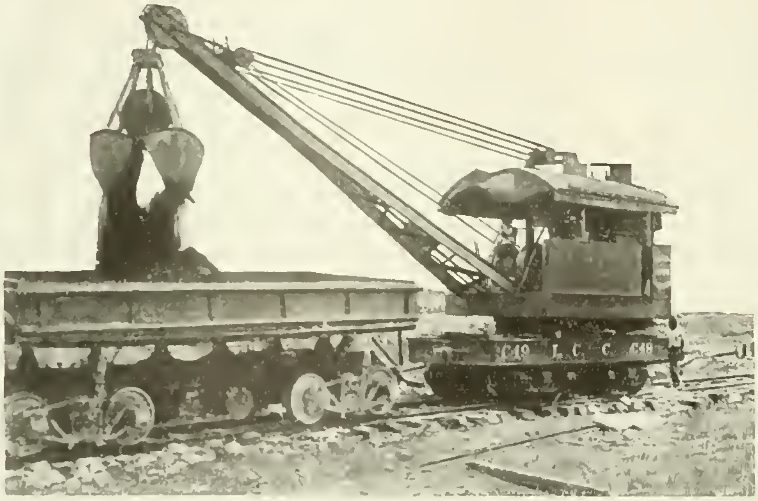

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above its temperature due to pressure, while in European practice the superheat is raised 250° to 300° F., without impairing lubrication, when a high flashing lubricating oil is used.

The steam should be delivered to the cylinder at a temperature of about 600° F., in which case it may be defined as highly superheated steam. Its chief superiority over saturated steam lies in the fact that owing to the excess of heat over the point of saturation, it entirely prevents cylinder condensation, which is the most serious of all sources of waste. Apart from this advantage, superheated steam has a greater temerity and increases in volume corresponding to the superheat applied from 25 to 40%, as compared with equal weights of saturated steam of equal pressures. But superheated steam will not only effect a direct saving in fuel and water, but a direct or indirect saving in other ways. Due to the prevention of condensation and the augmentation in the volume of steam the boiler capacity is increased. Very high steam pressures are not absolutely necessary without sensibly affecting the economy, as this depends on the degree of superheat.

A reversion to relatively normal pressures will ensure a longer life of the boiler and firebox, and will render easier the work of keeping the various joints and fittings tight, besides mitigating the staybolt difficulties. The importance of this point is too obvious to need insisting upon.

The principal reason for the economy of the compound locomotive lies in the fact that the losses due to condensation, which in ordinary simple engines amounted to as much as 35%, are reduced to about 20%. By the use of highly superheated steam these losses are entirely obviated. This phase of the question may be summed up as follows: By the consumption of one ton of coal it is possible to produce in a certain time 650 h.p. in a saturated steam simple engine, 750 h.p. in a saturated steam compound, 850 h.p. in a superheated steam simple engine, and 875 h.p. in a superheated steam compound.

It does not seem likely that the superheater will be extensively used upon the compound, as the composite saving of the two is not enough in excess of the superheater alone to make the combination of the two worth while. It seems very likely, therefore, that we will see a reversion to the simple engine, even to the exclusion and discarding of the compound.

In Schmidt's superheater the high degree of superheating averaging about 575° F. is obtained by bringing a portion of the hot firebox gases into direct contact with superheater. In order to do this a fire tube from 11 to 12 in. in diameter is placed between the regular tubes and the bottom of the shell of the boiler.

The superheater consists of 62 tubes from 1 3-16 to 1 5-16 inches inside and from 1½ to 1⅝ inches outside diameter. These tubes are placed about the smokebox in three concentric rings. They are arranged in groups set one behind the other. At their upper extremities these tubes are expanded into a long steam header which branches out to the right and left. The 21 tubes of the inner group are arched up at the bottom away from those of the other two groups so that an open space, called the superheating firebox, is found, into which the hot gases enter from the large fire tube. The inner jacketing of the body to the right and left of the smokebox up to the top of the exhaust nozzle, so that nearly the whole of the superheater is enclosed in an iron casing, which can be opened or closed on each side of the smokebox by small dampers operated by the engineer.

The distributing steam header is at the right hand side of the smoke box and has a partition in the middle. When the throttle is opened the damp steam enters the back end of this steam chamber and flows through the rear to ten of the three-fold groups of tubes, and passes over to the left side being dried and superheated to some extent. In this steam box there is no partition, so that the partially superheated steam enters the forward tubes of the three groups and flows back to the right hand steam box and thence to the cylinders.

The hot gases from the firebox pass through the large fire into the arched chamber formed by the upward bending of the inner group of tubes thence upwards over the whole length of the tubes and escape at the stack. The action of this flow of the hot gases over and about the superheating tubes is in an almost exact ratio to the working of the locomotive and ceases almost entirely when the throttle is closed. This flow of gases can furthermore be regulated by the damper. This simple arrangement also makes it possible to easily avoid all overheating of the covering of the superheater. The connections to the blower and the superheater damper can be so arranged that the damper will be closed when the blower is at work.

Measurements which have been taken indicate that at the middle point of the superheating chamber the average prevailing temperature is about 1,290 F., and that the escaping gases are about 660° F.

The lower rows of the superheater are placed so far apart that all of the sparks carried through by the draft can be collected at the spark trap. Furthermore, a proper adjustment of the tubes of the superheater makes it possible to do away with the jacketing of the side sheets. The soot is removed by a jet of steam. The entire superheating arrangement occupies only a comparatively small part of diameter of smokebox.

Tests on the Berlin division show that in nine days' trial over a run of 102.5 miles, with a train weighing on an average 280 tons, to which 80 tons should be added for the engine, the following comparative results were obtained. For each train mile engine no. 74 using superheated steam burned 12.94 lbs. of coal and evaporated 78.1 lbs. of water, while the compound locomotives burned on an average 14.47 lbs. of coal, and evaporated 105.35 lbs. of water. The compounds consumed about 11.8% more coal and nearly 30% more water than the one with the superheater.

Following the Schmidt smokebox superheater came the Schmidt smoke tube superheater. In this design a double chambered niggerhead extends horizontally across the front flue sheet and at right angles to the dry pipe, to which one chamber is connected midway, while the other chamber is in connection at either end with a steam pipe leading to a cylinder. The under surface of this niggerhead is faced and in it are eight series of ports or openings, the alternate ports in each series leading to one of the two chambers. To this under surface are suspended by means of straps bolted to the niggerhead, square blocks into each of which are secured two sets or pairs of the circulating or superheating tubes. These circulating tubes extend downward at an angle to a point in line with their respective smoke tubes, where they turn and enter the smoke tube and extend to within 30 ins. of the back flue sheet. At the firebox end a return bend is applied to make a connection between the two circulating tubes, one leading from each of the chambers and secured to the same block. Thus the steam leaving the dry pipe, passes through one chamber of the niggerhead, out through one circulating tube and back through its complementary tube, thence through the other chamber of the niggerhead to the steam pipes and on to the steam chests.

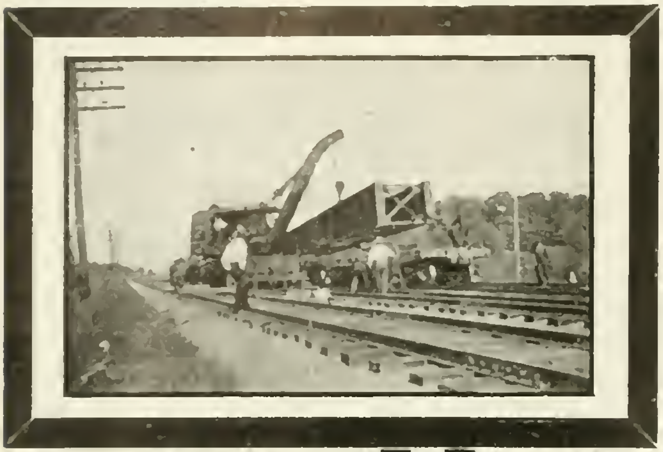
The front end opening to the smoke tubes can be entirely closed by a damper, so that there will be no flow of the hot gases from the firebox through the smoke tubes when the engine is not working, thus eliminating the danger of burning out the circulating tubes.

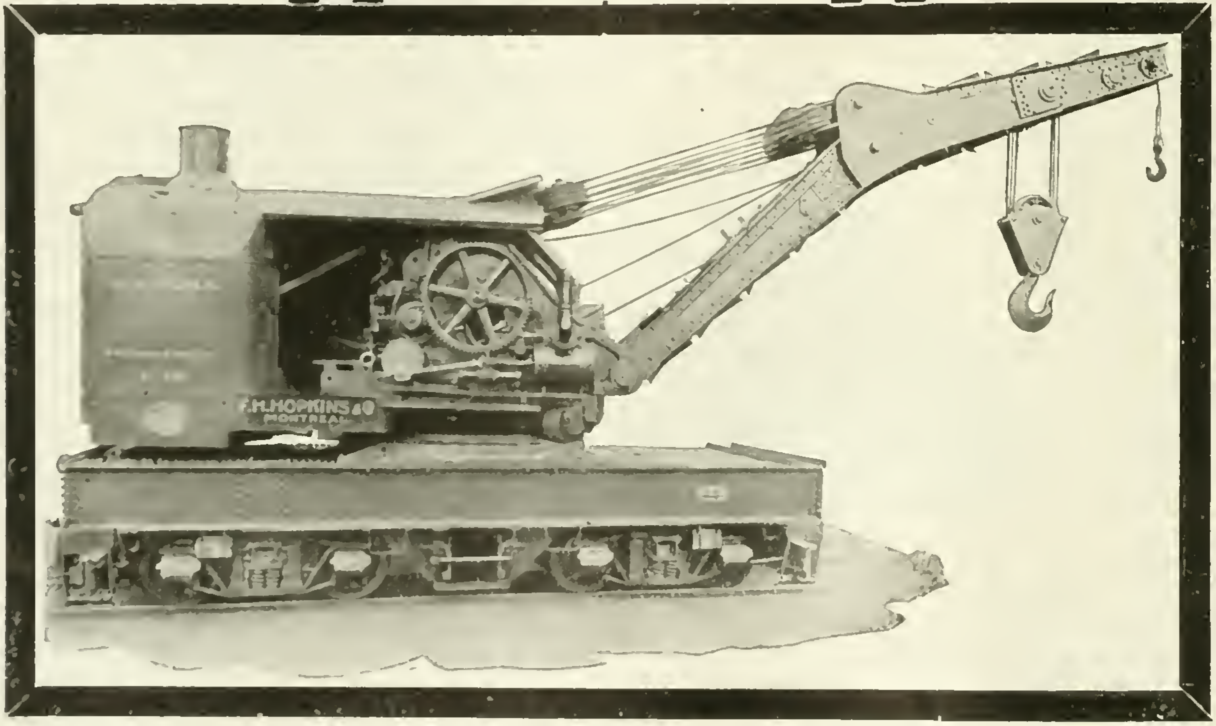
Another design of the smoke tube superheater is the Cole-Field tube arrangement. In this design eight double chambered headers are used, which, being secured to the niggerhead, extend vertically downward in front of the tube sheet, and the circulating tubes are entered from the back on a line with the smoke tubes through holes in the back wall of the header chamber and are therein made steam tight. A plugged hole in the front face of the leader permits of getting at the end of the tubes to expand and fasten them in the header as well as to plug or work on them in case of their becoming ruptured or leaking. The Field tube, not proving as successful as was desirable, was later superseded by the return bend circulating tube. The two chambers of each header have independent walls and are joined together by a web.

A design which has been very extensively adopted on the C.P.R. is the Vaughan-Horsey, which, in principle the same, differs materially in detail from the other two. There are two elongated chamber castings, each entirely independent of the other, and each cast with a series of fingers which act in the capacity of headers. One chamber casting, acting as a niggerhead, is bolted centrally to the dry pipe in such a manner as to have the fingers extend vertically downward, while the other chamber casting, fastened at either end to a short steam pipe, has its fingers extending upward. These fingers when in position interlace, but with sufficient space between to permit the introduction of the circulating tubes. One end of the circulating tube is jumped and a collar upset on it. The end of the tube is then so bent that the milled face of the collar will be parallel to the length of the tube. With a steel union nut the bent end of the circulating tube is secured to a drop-forged two or four way passage, which is screwed into the outer face of one of the fingers of one chamber, while the corresponding end of the companion tube is similarly secured to an adjacent finger of the other chamber. These passage-ways are in line with the smoke tubes and the circulating tubes enter the smoke tubes the same as in the Schmidt and Cole designs.

The Baldwin is another design of the smokebox type of superheater. It is much simpler than the Schmidt design, and consists only of two headers on either side of the smoke box, the two on either side, being connected by a series of circulating pipes which are bent to conform to the shape of the smokebox. Two methods for connecting the headers to the niggerheads and steam pipes are provided for, one with the steam entering the superheater at the top back end and emerging at the lower front end, and the other with the steam entering at the top front end and emerging at the bottom back end. The second arrangement would probably give the better results for the reason that the steam leaves the superheater at the point where the gases are the hottest. In this, as well as in the Schmidt type, diaphragms are employed to cause the gases, on their travel from the smoke tubes to the stack to circulate about the superheater pipes.

With the smoke tube type of superheater the number of circulating pipes employed in the several designs would depend largely upon the size of the boiler, but the common practice is to use 22 smoke tubes, placed in the upper part of the boiler, with two sets of circulating tubes in each. The smoke





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Branch Offices : - - Winnipeg and Vancouver tubes are five inches outside diameter at the front sheet, into which they are expanded and beaded over. This diameter is maintained to within seven inches of the firebox end, where it is swedged down to four inches, and enters the sheet at that diameter. The hole in the firebox sheet is threaded, care being taken to make it perfectly true and parallel and in line with the corresponding hole in the front sheet and the tube is screwed into the sheet and then beaded over. The circulating tubes are of cold drawn steel, 1¼ inches outside diameter, and extend into the smoke tube to within 30 ins. of the firebox, where the return bend joins the two tubes together, and all four circulating tubes are separated as well as being supported in and held away from the walls of the smoke tube, to permit of the free flow and circulation of the gases, by means of lugs or feet cast on the return bends. These tubes, reaching as they do so near the firebox, and being subjected to very high temperatures, would be liable to burn off at the end when no steam was passing through them, were they not to receive attention.

This is afforded them by means of a damper placed in the front end immediately below the large smoke tubes and between the headers and flue sheet. The damper opens and closes automatically with the opening and closing of the main throttle by means of a cylinder piped to the steamway in the cylinder saddle, and piston and weight attached on the outside of the smokebox to an extension of the damper rod.

One of the things that has given a great deal of trouble in the operation of superheater engines has been the difficulty experienced in getting oil to the valves and pistons, especially to the pistons, because of the erroneous idea, imported with the superheater, that a pump lubricator was necessary. A number of these pump lubricators have been tried, but with very indifferent results. Experience has demonstrated that the modern hydrostatic lubricator will deliver the oil in sufficient quantities at all times, and that the usual amount of the better grades of valve oil is sufficient for lubricating valves and pistons. It is noticeable with engines using superheated steam that the walls of the steam chests and cylinders take on a bright polish, but never get rough and cut as is so often the case with the cylinders of compound engines. While there have been some cases of excessive wear of piston packing rings when the rings have failed to make a mileage of 10,000 miles, due partly to insufficient lubrication and partly to soft material, the life of the rings ordinarily is very satisfactory.

While the Schmidt smoke box superheater produces a very high degree of superheat, its expensive and complicated construction and inaccessibility for repairs render it rather undesirable for general adoption.

The Schmidt smoke tube design has in the past required the least attention of any; and when once the equipment is made steam tight but very little trouble is experienced thereafter. However, the blocks into which the circulating tubes are assembled, being secured to the headers by straps, each strap holding a corner of two blocks, when repairs are required, such as inserting a new circulating pipe tube, and one of the blocks must be taken down, two other blocks are thereby loosened, and this means the taking down of all the blocks and a remaking of all the joints. A steam leak between the header and a block soon cuts grooves, entailing the refacing of the ports, which means a great deal of labor.

The Vaughan-Horsey design probably embodies the most successful arrangement of any. Owing to its peculiar construction not only is a higher degree of superheat obtainable, but defective parts are more easily repaired or renewed. Should a circulating tube break and another one not on hand, all that is necessary to do is to remove the front plates, uncouple the defective tube, and screw a cap on the passage way. Also it is very little more work to insert a new tube. It is not advisable to plug too many of these tubes, for it reduces the total area, thereby restricting the flow of steam and weakening the engine.

In conclusion let it be understood that the addition of a superheater entails no extra expense or attention to be bestowed on an engine aside from that arising from the repairs of mechanical defects, the keeping of the large smoke tubes free from cinders, and the keeping of the damper working. It is not unreasonable to expect that the defects should in time be practically eliminated and an engine go from one stopping to another without having the front plates removed, as some of them are now doing. Unless the cleaning of the tubes is thoroughly and regularly done, a material deterioration in the efficiency of not only the superheater but of the engine itself will follow. With any kind of soft coal, cinders are bound to collect in the large smoke tubes and fill in around the circulating tubes, and it is found that the air blast usually applied is not always sufficient to remove them. A strong pressure of water is necessary to thoroughly cleanse the tubes, and this should be resorted to at least every washing out of the boiler. The results from this washing, in the better steaming of the engine and the higher superheat obtained, will more than repay for the work performed.

The foregoing paper was read before the Central Railway and Engineering Club recently.

June Birthdays

Many happy returns of the day to—

Jas. Anderson, Manager, Sandwich, Windsor and Amherstburg Ry., Windsor, Ont., born at Ayr, Ont., June 20, 1851.

W. C. Bowles, Division Freight Agent, Pacific Division, C.P.R., Vancouver, B.C., born at Montreal, June 3, 1875.

J. H. Boyle, Assistant Superintendent, District 4, Eastern Division, C.P.R., Ottawa, born at Waterloo, Que., June 26, 1869.

F. P. Brady, Member Government Railways Managing Board and General Superintendent Government Railways, Moncton, N.B., born at Haverhill, N.H., June 22, 1853.

H. W. Brodie, General Passenger Agent, Lines West of Revelstoke, C.P.R., Vancouver, B.C., born at Fredericton, N.B., June 8, 1874.

E. Callaghan, Agent, Hamilton Steamboat Co., Toronto, born at Kingston, Ont., June, 17, 1875.

A. E. Doucet, District Engineer, National Transcontinental Ry., Quebec, born at Montreal, June 9 1860.

E. W. DuVal, Superintendent, District 1, Saskatchewan Division, C.P.R., Moose Jaw, born at Toledo, Ohio, June 5, 1885.

G. H. Eaton, Assistant Master Car Builder, Western Lines, C.P.R., Winnipeg, born in Staffordshire, Eng., June 9. 1860.

A. A. Goodchild, Auditor of Stores and Mechanical Accounts, C.P.R., Montreal, born at Peckham, London, Eng., June 3, 1866.

H. W. Harding, Local Secretary, Canadian Northern Ry., London, Eng., born there June 6, 1869.

F. M. Hawley, City Ticket Agent. G.T.R., Cobourg, Ont. born at Campbellford, Ont., June 22, 1874.

L. R. Johnson, Assistant Superintendent of Motive Power, C.P.R. Eastern Lines, Montreal, born at Abingdon, Berks, Eng., June 22, 1855.

L. K. Jones, I.S.O., Secretary, Department of Railways and Canals, Ottawa, born at Port Hope, Ont., June 9, 1849.

A. C. Lytle, Assistant Trainmaster, District 1, Eastern Division, C.P.R., Farnham, Que., born at Hemmingford, Que., June 6, 1854.

R. S. McCormick, Chief Engineer, Algoma Central and Hudson Bay Ry., and Manitoulin and North Shore Ry., Sault Ste. Marie, Ont., born at Quaker City, Ohio, June 22, 1873.

D. McDonald, General Manager, Montreal St. Ry., and President Canadian Street Railway Association, born at St. Thomas de Montmagny, Que., June 17, 1859.

S. J. McLean, Dominion Railway Commissioner, Ottawa, born at Quebec, June 14, 1871.

J. V. McNab, Resident Engineer, C.P.R., Moose Jaw, Sask., born at Ayr, Ont., June 11, 1884.

C. E. McPherson Assistant Passenger Traffic Manager, Western Lines, C.P.R., Winnipeg, born at Chatham, Ont., June 7, 1861.

W. R. MacInnes. Freight Traffic Manager, C.P.R., Montreal, born at Hamilton, Ont., June 7, 1867.

H. J. Maguire, District Baggage Agent, Pacific Division and B.C. and Pacific Coast Service, C.P.R., Vancouver, B.C., born at Toronto, June 16, 1881.

G. Manson, Assistant to Vice President C.P.R., Winnipeg, born at Thurso, Scotland, June 8, 1863.

J. D. Morton, Assistant Comptroller, Canadian Northern Ry., Toronto, born at London, Ont., June 15, 1857.

L. Mulkern, District Freight Agent, C.P.R., London, Ont., born there, June 18, 1871.

F. Price, Superintendent Car Service, G.T.R., Montreal, born there June 11, 1864.

Allan Purvis, Local Manager, B. C. Electric Ry. Fraser Valley Branch, New Westminster, B.C., born at Batavia, Java, June 29, 1864.

D. I. Roberts, General Manager, Quebec, Montreal and Southern Ry., and Napierville Jct. Ry., Montreal, born at Waynesburg, Pa., June, 27, 1853.

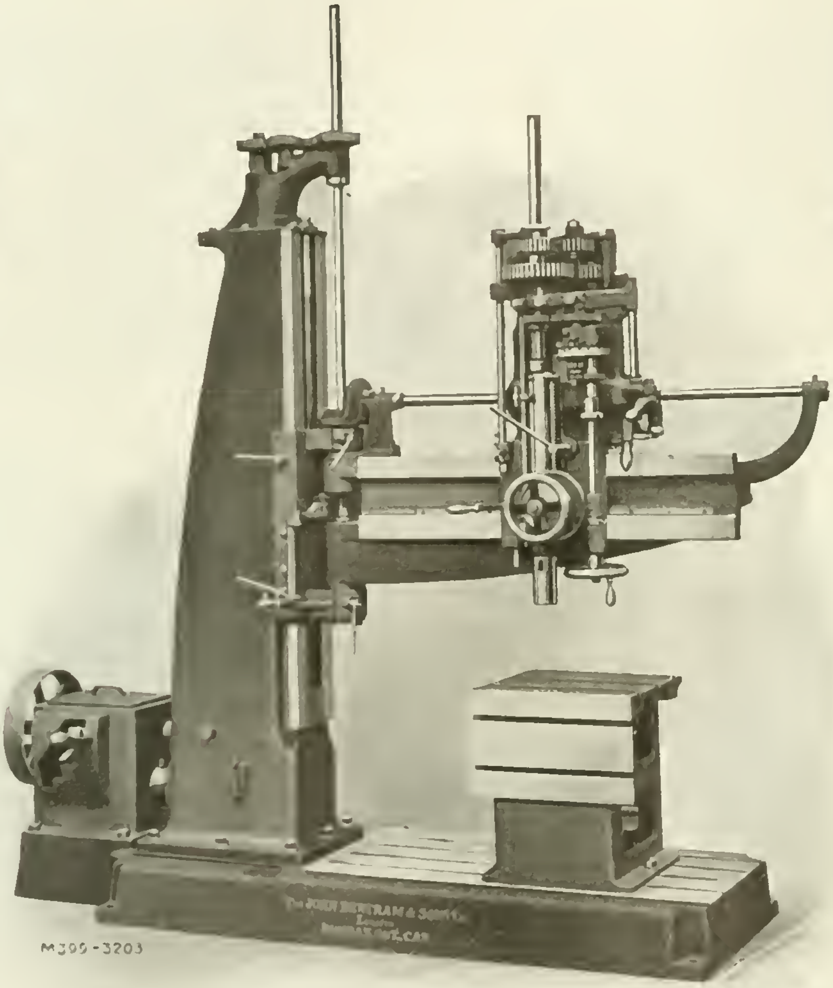
Jas. Stephenson, ex-Chief Superintendent, G.T.R., now of Clevedon, Somerset, Eng., born at Weston Super Mare, Eng., June 2, 1837.

W. Webber, General Agent Passenger Department Atlantic Steamship Service, C.P.R., Montreal, born at Liverpool, Eng., June 10, 1872.

The C.P.R. Thirty Years Ago.

On April 25, 1881, A. B. Stickney, then General Superintendent of the C.P.R., at Winnipeg, issued the following circular: "By agreement with the Government, the undersigned, as the General Superintendent of the Canadian Pacific Railway Co., will, on May 1, 1881, take possession of all that portion of the C.P.R. now constructed lying west of Telford station, and thereafter that portion of said railway will be operated by the C.P.R. Co. The following appointments have been made:— Gen. Thos. L. Rosser, Chief Engineer; W. R. Baker, Local Treasurer and Assistant to the General Superintendent; Wm. Harder, Assistant Traffic Manager; I. O. Ogden, Jr., Auditor; Geo. P. Nelson, Purchasing Agent and General Storekeeper; Joel May, Division Superintendent, in charge of the Red River division; J. Lynskey, Division Superintendent, in charge of the eastern division; John Elgar, Train Dispatcher; F. C. Butterfield, Mechanical Superintendent."

RADIAL DRILLS



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Index to The Railway and Marine World.

A complete index to the matter contained in The Railway and Marine World for 1910, Jan. to Dec., both inclusive, has been mailed to subscribers who applied for it. The indexes for previous years met with much favor, and we have no doubt the one for the past year will be equally appreciated. A large portion of the matter we publish from month to month is of great permanent value for reference, and of course this value is much enhanced by a complete classified index. We were much gratified when we issued our first index for 1907 to find that a large number of subscribers file and bind the paper.

We do not make a general distribution of the index, but a copy will be sent to each subscriber who desires one, and who will notify us to that effect. A letter or post card, simply stating that the index is desired, and giving the subscriber's name and address, will be sufficient. Any subscriber who wishes a copy and has not already applied should do so at once.

G. T. R. Semi-annual Meeting.

The half-yearly meeting was held in London, Eng., April 20, when the report for the half-year, ended Dec. 31, 1910, was presented. The following summary shows a comparison of the revenue of this period with that for the corresponding period 1909:—

1909.		1910.
£3,632,903	Gross receipts	£3,699,898 10 10
	Deduct—	
2,753,143	Working expenses, being at the rate of 75.43%, as compared with 75.78% in 1909	2,790,685 18 3
£ 879,760	Net traffic receipts	£ 909,212 12 7
39,953	Balance of income from rentals, outside operations, and car mileage.	38,436 17 9
£ 919,713	Total net revenue	£ 947,649 10 4
	Add—	
16,013	Amount received from International Bridge Co.	16,012 16 7
6,507	Interest on bonds of Central Vermont Ry.	6,506 14 1
68,743	Interest on securities of controlled lines and on St. Clair Tunnel bonda acquired by the issue of G. T. R. 4% debenture stock	70,941 1 6
27,631	Balance of general interest account	40,146 0 3
£1,038,607	Net revenue receipts	£1,081,256 2 11

Following are the net revenue charges, for the half years 1910 and 1909:—

1909		1910.
£ 77,603	Rents (leased lines)	£ 77,603 0 9
508,572	Interest on debenture stocks and bonds	525,749 8 7
36,589	Interest on debenture stock and bonds of lines consolidated with the company	32,331 17 4
17,368	Canada Atlantic Ry. deficit	40,079 17 5
.....	Toledo, Saginaw and Muskegon Ry. deficit, 1908-9-10	23,390 0 8
£ 640,132		£ 699,154 4 9
12,067	Deduct — Detroit, Grand Haven, and Milwaukee Ry. aurplus	3,862 17 10
£ 628,065		£ 695,291 6 11
410,542	Leaving a surplus of	385,964 16 0
£1,038,607		£1,081,256 2 11

Adding the balance of £12,552 16s. 0d. at the credit of net revenue account on June 30, 1910, to the above surplus of £385,964 16s. 0d., the amount available for dividend is £398,517 12s. 0d., from which the directors recommend the payment of the following dividends for the half year:—

4% guaranteed stock	£204,958 7 8
First preference stock	85,420 15 0
Second preference stock	63,210 0 4
½% on third preference stock	35,823 3 7
	£389,412 6 7

leaving £9,105 5s. 5d. to be carried forward.

Following is a comparison of receipts for the half-years ended Dec. 31, 1910 and 1909:—

Description	1910	1909	Increase
	£	£	£
Passengers	1,127,908	1,091,426	36,482
Mails and express	197,414	182,855	14,559
Freight and live stock	2,254,619	2,252,106	2,513
Other receipts	119,958	106,516	13,442
	£3,699,899	£3,632,903	£66,996

TRAFFIC STATISTICS

	1910	1909	Increase	Decrease
Passengers carried	6,097,437	6,212,275	......	114,838
Average fare per passenger	44.40d	42.17d	2.23d	......
Tons of freight and live stock	8,890,164	9,265,763	......	375,599
Average rate per ton	60.87d	58.33d	2.54d	......
Tons carried one mile	1,538,361,407	1,622,599,284	......	84,237,877
Earnings per train mile	91.97d	87.61d	4.36d	......

The average rate per ton per mile on the entire freight business was 0.71c., compared with 0.68c. in the corresponding half-year.

The working expenses, including taxes, were £2,704,091, or 73.09% of the gross receipts, as compared with £2,675,662 or 73.05% in the corresponding half year, an increase in amount of £28,429, but a decrease of 0.56% in proportion to gross receipts.

Following is a comparison of revenue expenditure, including taxes, for half-years ended Dec. 31, 1910 and 1909:—

Description of expenditure	1910	1909	Increase	Decrease
	£	£	£	£
Maintenance of way and structures	592,719	628,698	......	35,979
Maintenance of equipment	647,680	669,889	......	22,209
Traffic expenses	116,768	97,935	18,833	......
Conducting transportation	1,256,911	1,198,611	58,300	......
General expenses	90,014	80,529	9,485	......
Taxes	86,594	77,481	9,113	......
Total	£2,790,686	£2,753,143	37,543	......
Percentage of gross receipts	75.43	75.78	......	0.35
Expenditure per train mile	69.37d	66.40d	2.97d	......

The train mileage compares with that for the half-year ended Dec. 31, 1909, as follows:—

Description	1910	1909	Increase	Decrease
Passenger	4,423,504	4,399,734	23,770	......
Freight	4,974,601	5,284,643	......	310,042
Mixed trains	256,454	267,110	......	10,656
Total	9,654,559	9,951,487	......	296,928

From the foregoing statements it will be observed that the gross receipts show an increase of £66,996, or 1.84%; the working expenses, including taxes, an increase of £37,543, or 1.36 %; and the train mileage a decrease of 296,928 or 2.98%.

The total charges to capital account were £376,963 12s. 1d. Of this £12,502 12s 4d. was for the acquisition of $6,500 of G.T. Western Ry. first mortgage bonds issued in respect of a similar amount of North Western G.T. bonds, which matured Jan. 1, 1910, and were paid off during the half-year, and $51,700 D., G. H. and M. Ry. consolidated bonds; and £59,292 6s. 2d. for discount and commission on 4% debenture stock and 4% guaranteed stocks sold during the half-year.

The expenditures on capital account in respect of new works, new rolling stock, double track and land purchased, was as follows:—

New worka	£270,773 0 8
New rolling stock	23,272 19 9
Double track	1,119 3 11
Land purchased	10,003 9 3
	£305,168 13 7

No additions to rolling stock at the expense of capital have been made during the half-year, but £23,272 19s. 9d. has been charged to capital account for materials supplied on account of 1,000 additional steel coal cars, to be subsequently delivered. Five Pacific type passenger engines, 10 baggage cars, and 660 steel under-frame box cars have been purchased, and two dining, three parlor and 3 parlor buffet cars, and one snow plow have been built in the company's works on revenue account.

CANADA ATLANTIC RAILWAY.

The following shows the results for the half-year compared with the corresponding period of 1909:—

1909.		1910.
£230,104	Gross receipts	£198,239
188,480	Working expenses	179,763
41,624	Net traffic receipts	18,476
1,122	Balance of income from rentals, outside operationa, and car mileage	4,474
£ 42,746	Total net revenue	£ 22,950

The interest charges were £63,030, against £60,114 and there was a net revenue deficiency of £40,080, compared with £17,368 in 1909.

The number of passengers carried was 287,943, against 290,729, a decrease of 2,786, or 0.96 %; and the passenger receipts, including mails and express, were £48,808, against £49,006, a decrease of £198, or 0.40%.

The quantity of freight moved was 720,415 tons, against 1,258,375 tons, a decrease of 537,960 tons, or 42.75%, and the receipts from freight traffic were £130,875, making £171,079, a decrease of £40,204, or 23.50%.

GRAND TRUNK WESTERN RY.

The following shows the results for the half-year compared with the corresponding period of 1909:—

1909.		1910.
£637,166	Gross receipts	£640,798
468,976	Working expenses	502,464
168,190	Net traffic receipts	138,334
Dr. 49,094	Balance of income from rentals, outside operations and car mileage	Dr. 49,409
£119,096	Total net revenue	£ 88,925

The net revenue charges were £92,150, against £93,307, and there was a net revenue deficiency of £3,225, which is carried forward, as compared with a net revenue credit of £25,789 in 1909.

The number of passengers carried was 1,079,337, against 1,052,197, an increase of 27,140, or 2.58% and the passenger receipts, including mails and express were £242,899, against £230,519, an increase of £12,380, or 5.37%.

The quantity of freight moved was 1,642,548 tons, against 1,740,216 tons, a decrease of 97,668 tons, or 5.61 % and receipts were £379,704, against £391,015, a decrease of £11,311, or 2.89%.

DETROIT, GRAND HAVEN & MILWAUKEE RY.

The following shows the results for the half-year, compared with the corresponding period of 1909:—

1909.		1910.
£219,978	Gross receipts	£215,501
159,486	Working expenses	174,021
60,492	Net traffic receipts	41,480
Dr. 11,444	Balance of income from rentals, outside operations, and car mileage .Dr.	636
£ 49,048	Total net revenue	£ 40,844

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The net revenue charges were £36,981, the same as in 1909. There was a net revenue surplus of £3,863, as compared with £12,067 for the corresponding period of 1909.

The number of passengers carried was 478,246, against 487,122, a decrease of 8,876, or 1.82 %; and the passenger receipts, including mails and express, were £74,673, against £75,032, a decrease of £359, or 0.48%.

The quantity of freight moved was 1,079,293 tons, against 1,116,699 tons, a decrease of 37,406 tons, or 3.35%, and the receipts from freight traffic were £120,432, against £125,074, a decrease of £4,642, or 3.71%.

GRAND TRUNK PACIFIC RAILWAY.

Track was laid to the western end of the Prairie Section at Wolf Creek last year, and has since been extended 63 miles beyond Prairie Creek, which is 186 miles west of Edmonton and within 60 miles of the summit in the Rocky Mountains through the Yellowhead Pass. During the winter construction camps were established from Prairie Creek westerly through the Yellowhead Pass to Tete Jaune Cache, 110 miles, and arrangements have been made for the vigorous prosecution of this work during the present year. On the western end of the Mountain Section from Prince Rupert on the Pacific coast, track has been laid easterly for 100 miles, and will be available during the coming season for the transportation of materials and supplies for the contractors, and also for the use of prospectors and settlers going into the interior of the country. From the present end of the track easterly to Aldermere, 145 miles, construction camps are established, and the work is being carried on as rapidly as the weather conditions and the supply of labor will permit. On this section of the line there is a considerable amount of rock cutting and tunnel work, and a large bridge will have to be constructed across the Skeena River near Hazelton. Every effort, however, will be made to complete the grading to Aldermere, and to lay a considerable portion of the track by the end of the present year.

Construction on the branch lines was continued from the date of the report presented in October to the end of the season in December, but work was almost entirely suspended during the winter. The contractors, however, have kept their forces organized, and every pressure has been brought to bear upon them to put on an increased force of men and teams at the opening of the coming season.

REPORTS OF OFFICIALS.

The Chief Engineer, H. G. Kelley, reports, the length of the G.T.R. maintained and operated during 1910 was the same as in 1909, viz., 3,536 miles. The work in connection with the terminal improvements at Ottawa is progressing favorably. The new hotel and station buildings have been erected and roofed in, and a fair proportion of the interior piping and electric wiring has been done. A new power house has also been built, and the equipment is now being installed.

The renewal of the Canada Atlantic railway bridge across the St. Lawrence at Coteau is practically completed. The bridge consists of the following:—4 fixed spans, each 219 ft., 10 fixed spans, each 213 ft., 2 fixed spans, each 171 ft., 1 fixed span, 135 ft., 1 swing span (river), 1 swing span (Soulanges Canal), and three short spans, making a total length of actual steel work, 4,085 ft. 3 ins.

The expenditure during 1910 for maintenance of way and structures was $4,663,272.30, against $4,384,252.58 in 1909, an increase of $279,019.72, or somewhat over 6.36%. Total average cost per mile, $1,318.80.

The outlay on track and permanent way, including ballast and ballasting, clearing snow, renewals of rails and ties, and also including their proportion of superintendence, was $3,186,471.96 in 1909, or at the rate of $901.15 per mile. In 1910 the amount was $3,244,751.98, or at the rate of $917.63 per mile, an increase of 1.83%.

For the renewal and repair of bridges, trestles and culverts, the expenditure during 1910, shows an increase of $158,990.46, or nearly 46½% as compared with the outlay during 1909, the figures being $501,352.55 and $342,362.09 respectively.

The cost of repairs and renewals of buildings and fixtures was $672,999.72, compared with $564,230.08 in 1909, an increase of $108,769.64, or almost 19.28%.

New stations were built at Danville Jct., Lacadie, St. Martine, Henrysburg, Moose Creek, Downsview, Malton, Waterloo, Vineland, Goderich, Bothwell, Nixon, Amagari, Ada and Fenton—15 in all

The materials used for repairs and renewals of main tracks and sidings were:—

New steel rails	33,304.80 tons.
Partially-worn steel rails laid in branch lines and sidings	26,512.80 tons.
New ties placed in track	1,915,896
Ballast	401,356 cub. yds.

The Superintendent of Motive Power, W. D. Robb, reports the expenditure, mileage, etc., as follows:—

Half-year ended	Total expenditure	Train mileage	Rate of expense per mile		
			Train	Engine	Car
			Cents	Cents	Cents
Dec., 1910	$4,843,710	9,524,919	50.85	39 19	3.30
" 1909	4,849,724	9,951,487	48.73	38 33	2.96

A decrease in expenditure of $6,014 or 0.12% compared with a decrease in train mileage of 426,568, or 4.29%.

	Passenger	Freight	Mixed
The average number of cars moved per train was	5.0	25.3	7.1
And for the corresponding period	5.0	26.5	7.1

During the half-year six engines were scrapped, leaving 20 old light capacity engines set aside, to be scrapped. Five Pacific type passenger engines were purchased, and put into service. The actual stock at Dec. 31, 1910, was 929, against the official figure of 803, being a surplus of 126.

The comparative cost of repairs per train, engine and car mile was:—

Cost per mile	Repairs and renewals of locomotives		All repairing charges, including shop, machinery, tools and marine equipment, etc.	
	1910	1909	1910	1909
	Cents.	Cents.	Cents.	Cents.
Train	15.77	15.47	18.07	17.17
Engine	12.16	12.17	13.93	13.53
Car	1.02	0.94	1.17	1.04

J. Coleman, Superintendent of Car Department, reports expenditure, mileage, etc., as follows:

Half-year ended	Total cost of repairs and renewals.	Total miles run by car			Cost per mile	
		Passenger	Freight	Total	Car.	Train.
					Cents.	Cents.
Dec. 1910	$1,528,290	22,883,579	124,004,693	146,888,272	1.040	16.05
" 1909	1,605,676	22,529,586	141,494,586	164,021,154	0.979	16.14

A decrease in expenditure of $77,386, or 4.82%, and a decrease in car miles of 17,135,882, or 10.45%.

RECEIPTS

	£ s. d.	£ s. d.	£ s. d.
Freight	......	2,344,388 19 8	
Less			
Cartage, &c.	56,314 4 10		
International Bridge tolls	12,665 1 4		
St. Clair Tunnel tolls	20,790 18 6		
		89,770 4 8	
			2,254,618 15 0
Passenger	......	1,143,055 4 3	
Less—			
International Bridge tolls	2,297 4 8		
St. Clair Tunnel tolls	12,850 3 5		
		15,147 8 1	
			1,127,907 16 2
Mail and Express	......	......	197,413 14 11
Other Revenue from Transportation	....	......	78,233 3 9
Revenue from Operations, other than Transportation	......	......	41,725 1 0
			£3,699,898 10 10

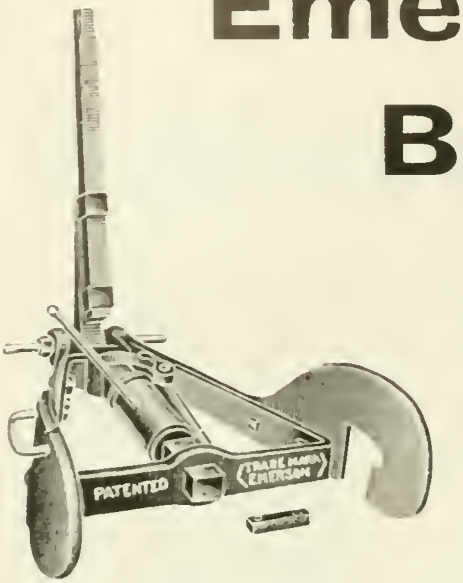
EXPENDITURE

		£	s.	d.
Maintenance of way and structures	16.02o/o	592,719	3	10
Maintenance of equipment	17.51o/o	647,679	12	7
Traffic expenses	3.16o/o	116,767	11	3
Conducting transportation	33.97o/o	1,256,910	18	10
General expenses	2.43o/o	90,014	8	2
Total operating expenses	73.09o/o	2,704,091	9	8
Taxes	2.34o/o	86,594	8	7
	75.43o/o	2,790,685	18	3
Net income from rentals	Cr.	63,805	10	4
		2,726,880	7	11
Dining car service balance.	Cr.	1,589	12	6
		2,725,290	15	5
Hire of equipment balance	Dr.	26,958	5	1
		2,752,249	0	6
Balance to net income account		947,649	10	4
		£3,699,898	10	10

The report was adopted without comment, and the following dividends authorized to be paid: 2% on the 4% guaranteed stock; 2½% on the first preference stock; 2½% on the second preference stock, and one-half per cent. on the third preference stock, for the half-year. A resolution was also adopted, assenting to the Grand Trunk Act, 1911, and authorizing the directors to guarantee the G. T. Western Ry. first mortgage bonds, as covered by the act, and to issue from time to time, additional 4% debenture stock, the aggregate interest on which shall not exceed £100,000 a year.

The Chairman stated that the five miles of the G. T. Western Ry., between Valparaiso and Sedley, is to be double tracked immediately, and other work, consisting of the installation of a new block-signaling system, additional siding accommodation and rolling stock, also undertaken, and in order that the company may be put in a strong position financially, powers have been taken to create a blanket mortgage of $30,000,000 to be guaranteed as to principal and interest by the G.T.R. Of this $15,000,000 will remain in the treasury to redeem the existing first mortgage bonds, at maturity, the remainder being issued as required for the work above mentioned, and also to complete payment for the Battle Creek shops, and to repay money advanced by the G.T.R. The act also

Emerson Rail Benders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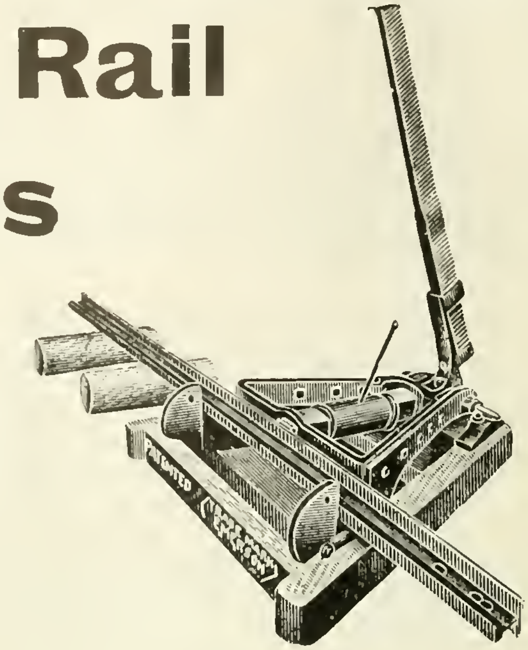
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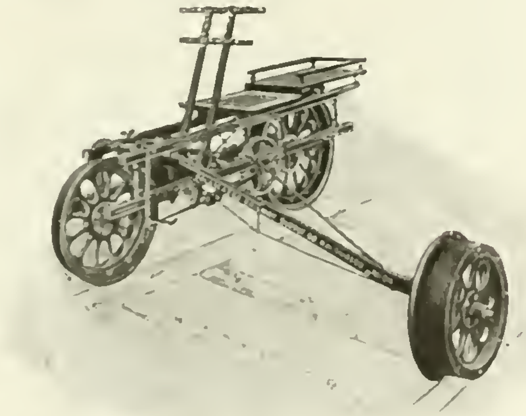

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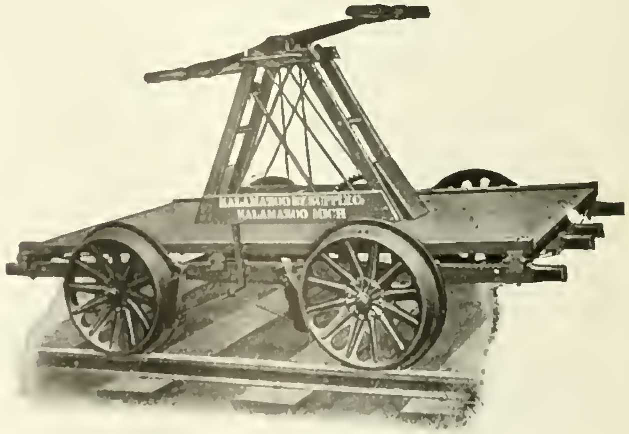
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tee, pledge and sell the securities of the Montreal and Southern Counties Ry., and to issue debenture stock to provide the necessary funds.

Following are the directors for the current year:—A. W. Smithers, Chairman; Sir Henry M. Jackson, C. M. Hays, President; G. Von Chauvin, J. A. Clutton-Brock, Col. F. Firebrace, Sir Felix Schuster, Lord Welby, Sir William H. White and Sir W. Lawrence Young.

Nova Scotia Railway Report.

The Provincial Engineer of Nova Scotia, R. McColl, in his annual report for the year ended Sept. 30, 1910, states that the work of his department, so far as it refers to railways, consisted generally of the supervision of the subsidized railways, there being no railway construction during the year. The principal work otherwise has been the examination into the proposed Halifax and Eastern Ry. and its final location.

Business generally, especially as regards railway traffic, has been considerably affected by the labor troubles in the mining districts, causing a great falling off in the coal shipments. The returns as a whole show a considerable decrease for the past year, there being a falling off of over $20,000 in the receipts, or about 2%, and as 1909 showed a decrease from 1908 of 8%, this makes a total decrease of 10% from 1908. This, however, is almost entirely accounted for by the labor troubles, as if the Sydney and Louisburg Ry., and the Cumberland Ry. and Coal Co. are excepted, there is an increase on the other lines of over $60,000. The most gratifying increase is that of the Halifax and South Western Ry., which shows a total of $39,000 increase for last year, or nearly 10%, and the net returns show an even greater increase.

There is no change in the railway mileage in the province, there being 634 miles of line under provincial jurisdiction, the Dominion Atlantic Ry. of 221 miles coming under the Board of Railway Commissioners, and the Intercolonial Ry. of 467 miles being under the Department of Railways. The total mileage is 1,322, or one mile of line for every 340 inhabitants, slightly less than the average for the Dominion. The construction of the Halifax and Eastern Ry. will increase this ratio considerably, so that considering there is no place in Nova Scotia more than 60 miles from navigable water, it may be said that practically all parts of the Province will be pretty well accommodated with railways.

The statistics given in the report are those for the year ended June 30, 1910, which were given in the tables published in our Jan. and Feb. issues. The receipts vary from $400 a mile in the case of the Cape Breton Ry. and the Nova Scotia Steel Co.'s Ry., to $80,000 a mile in the case of the Sydney and Louisburg Ry., and the operating expenses vary from $540 to $7,500 a mile, the net receipts varying from a loss of $540 and $443 a mile on the Cape Breton Ry. and the Nova Scotia Steel Co.'s Ry. respectively to a profit of $1,445 a mile on the Inverness Ry. and Coal Co.'s line. The Dominion Atlantic Ry. shows gross receipts of $2,855 a mile, and a net profit of $1,069.41, while the Intercolonial Ry. shows loss of $309 a mile. This shows that the lines in Nova Scotia not under the jurisdiction of the province occupy a much better territory as regards revenue than those under provincial control, with the exceptions of the Sydney and Louisburg Ry. and Inverness Ry. and Coal Co.'s line. Leaving out the two lines reporting a loss, it is shown that the receipts per train mile are on an average about 30% lower than on the larger Canadian railways, and even allowing for the fact that the trains will be somewhat heavier on the larger railways, the figures show that the provincial railways give more service in proportion to their revenue than do the larger railways. The difference in operating expenses is not nearly so marked as is the difference in the case of receipts. Notwithstanding the increase in the wages of trainmen, there is, with one exception, a decrease in operating expenses per train mile. In reference to net receipts, it is shown that the provincial railways are not getting as much for their shareholders as any of the large Canadian companies.

The traffic carried by most of the provincial railways, particularly the Sydney and Louisburg Ry., the Maritime Coal, Ry. and Power Co., and the Inverness and Richmond Ry. and Coal Co., is due to freight from mines owned by the owners of the railway, so the question of rates is not so important to the general public as it is on some of the other roads, such as the Halifax and South Western Ry. This line is of more interest to the province than other lines, not only on account of its length, but because it does only a general passenger and freight business. It is therefore very gratifying to find such a large increase, viz., 10%, in the annual traffic on that line, and at the same time a decrease in the operating expenses. The service given on this line during the summer of 1910 was without doubt the most convenient yet given, and the trains have shown a marked improvement as regards running time. There has also been a very considerable improvement in the road-bed, and a great improvement as regards derailments. While there is considerable to be accomplished yet, and while the trains are so frequent as many would like during the winter months when the traffic is light, there is a general improvement in nearly every way, and not only has the company succeeded in increasing earnings, both gross and net, but it has reduced the freight rates in many cases. While the line has not yet proved much of an earner of dividends for the shareholders, it is pleasing to find such an improvement and advantage to the people of the south shore counties. Before the building of the line, the cost of travelling worked out at about 6c. a mile, and the cost of freight about 20c. a ton a mile. The passenger tariff on the railway is 3c. a mile, and the freight rate averages about 5c. a ton a mile. This works out to a saving of about $1,000 a mile on the traffic as compared with conditions existing before the railway, to say nothing of the convenience and saving of time.

Six persons were killed and 13 injured by accidents on the provincial lines, as against 5 killed and 13 injured in the preceding year. The accidents to others than pasengers and employes were unusually low, and were all due to trespassing.

FROM AN ENGINEER OF SURVEYS.

H. M. Killaly, Engineer of Surveys, Canadian Pacific Railway, Montreal, in renewing his subscription to the Railway and Marine World, which he has taken for a number of years, writes:—

"Enclosed is another year's subscription for your valuable and interesting paper. It certainly keeps one well posted in regard to the latest news concerning railways, etc."

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L. J. Rouleau, Travelling Freight Agent, Grand Trunk Railway and National Despatch—Great Eastern Line, Montreal, writes:—"I always look forward to the receipt of the Railway and Marine World, every issue of which contains very valuable and reliable information."

St. Clair Tunnel Locomotives Flange Wear.

Since electric operation of the G.T.R. St. Clair tunnel was begun the driving wheels of the locomotives have been subject to excessive flange wear. After 10 months' operation, when the locomotives had made only 80,000 miles, it was necessary to turn the driving wheels and form new flanges. To do this 5/16 in. of metal had to be cut off the treads and the operation was expensive owing to the cost of removing and replacing the wheels and the loss of good metal. Under normal conditions the tires should last six years. The following information regarding the nature and probable cause of the excessive wear has been furnished by W. D. Hall, Superintendent of Power Plant and Electrical Equipment of the tunnel.

The three locomotives in use each consists of two duplicate half-units. Each half-unit is mounted on three pairs of driving wheels 62 in. in diameter. No guiding wheels are used and the rigid wheel base is 16 ft.. The total weight of each half-unit is 67½ tons, which is evenly divided on the three pairs of driving wheels. The motors are each of 250 h.p., and are geared to the driving axles. The height of the centre of gravity of the locomotive is 51 in.

Almost all the flange wear takes place on the leading wheels at each end of the half-units, which are turned end for end at regular intervals to distribute the wear as evenly as possible. The flange wear on the interior wheels is very slight and wear on the tread of any wheel is barely perceptible. The depth of the flanges is 1¼ ins. and the minimum thickness allowed is 1 in. The steam locomotives which formerly were used for hauling trains through the tunnel did not show excessive flange wear on any wheels.

While some of the flange wear on the electric locomotives is due perhaps to the frequent application of the brakeshoes in descending the 2% grades in the tunnel, there is no doubt that it is mainly due to curve resistance encountered in the tunnel yards. Conditions have been improved very much since last June. Up to that time various wheel flange lubricators had been tried, but satisfactory results were not obtained, mainly on account of the heating of the tires due to the almost continuous braking which is necessary in descending the long approaches.

Mr. Hall designed an apparatus which would spray oil on the wheel flanges and one which would do this only when the tires required lubricating to enable them to take the curves with as little resistance as possible. By pressing an electric contact button at any controller, or, in the case of a steam locomotive, by opening a small air valve, oil is sprayed on the flanges of the leading wheels of each locomotive from one lubricator. The action of the combination of oil and air not only lubricates the flanges, but cleans them from grit as well, as the spray forces the dirt and grit to the outer edge of the flange. When two or more locomotives are coupled together the pressing of a button on any locomotive will cause the leading wheels of each locomotive to be lubricated. For steam locomotives, or where electric current is not available, the action of the lubricator is the same except that it is controlled by an air valve placed near the operator and controlled by hand. This device has been giving very satisfactory results since all the electric locomotives were equipped.

The first lubricator of this design has been in continuous operation since July 10, 1910, but a sufficient time has not elapsed to determine just what saving has been effected.

HOTEL BREVOORT

MADISON AND LA SALLE STREETS

CHICAGO

ABSOLUTELY FIREPROOF

ARTHUR M. GRANT,
MANAGER.

Carillon and Grenville Ry.

A press report states that Mackenzie, Mann & Co. interests have acquired, or are about to acquire, this railway. It is the only broad gauge railway now in Canada, the gauge being 5½ ft. It extends from Carillon to Grenville, Que., connecting at both ends with the steamers of the Ottawa River Navigation Co., and is operated only during navigation. The line is 13 miles long, and its construction was necessary in order to connect the upper and lower navigable reaches of the river. The line is owned by the Ottawa River Navigation Co. There is $200,000 of common stock outstanding, which represents the entire capital obligations of the railway. No Government or municipal aid was given towards its construction. The gross earnings for the year ended June 30, 1910, were $2,148.60, and the operating expenses $4,701.21, showing a deficit of $2,557.61. It carried in the same period 3,550 passengers, and 45 tons of revenue freight, and its trains ran a total of 2,418 miles. The rolling stock consists of two of the old Birkenhead locomotives, originally built for the G.T.R., five passenger cars, and three freight cars.

Canadian Westinghouse Company, Ltd.

The report for the year 1910 shows net profits of $697,393.56, an increase of 40% over 1909.

From the year's profits quarterly dividends at the rate of 6% per annum and at the close of the year a bonus of 1% were paid, amounting to $306,362; $100,000 has been added to the general reserve for depreciation of property and plant, which reserve now stands at $400,000 on the books; $30,000 has been added to the reserve for inventory adjustment, increasing to $50,000 the amount set aside for that purpose should fluctuation of value require; and following the same prudent plan as adopted last year $70,522.21 has been written off items in property and plant account which are not directly productive from a manufacturing standpoint. The remaining balance of $190,509.35 has been carried forward to the credit of profit and loss, which shows the total unapportioned surplus to be $726,613.22.

A review of the physical activities for 1910 would closely resemble that of the previous year, except in the matter of volume. The sustained and increased demand for apparatus of all types in the electrical field, and the stability of orders for air brakes, have enforced a continual and cumulative growth of manufacture to satisfactorily care for these desirable conditions, resultant in factory output aggregating an increase of approximately 44% over 1909. As the factories were operated in 1909 to almost their normal capacities, the results of 1910 were obtained under a condition of considerable congestion. The volume of business offered in the latter part of 1909 and in the early part of this year made it apparent that some additional space would be required to facilitate its handling. Extensive additions to the warehouse and detail buildings were undertaken and are about ready for occupancy, and an extension of the foundry building, about doubling its capacity, is under way and will be completed with the opening of spring. The probability of still further increased business raises the question of additional machine shop facilities at a not distant date.

The insistent demand for apparatus involving the highest development of engineering and manufacturing skill has continued, and the large share of business with which the company has been favored in standard and special lines, particularly in those fitted for the extensive generation and distribution of high voltage electrical energy and its economical application to various industrial uses, demonstrates the standing accorded it throughout the Dominion. A new high record for sales was reached during the year, approximately an increase of 25% over 1909, the period of previous maximum. The larger volume has come from extensions to existing plants as well as from numerous new power developments, and has been well distributed geographically from ocean to ocean. Competition has been keen at the hands of home and foreign manufacturers, the latter having been reinforced by additional entrants attracted by the large developments undertaken in Canada. The established Westinghouse standards of design and construction have been fully maintained, along with continued efficiency in manufacturing costs. Appreciation is due the operating and directing forces in all departments.

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Canadian Northern Ry. Earnings, Etc.

Gross earnings, working expenses and net profits from July 1,, 1910, with increases over, or decreases from, those of 1909.10 :

	Earnings.	Expenses.	Net Earnings	Net Increase.
July	$1,225,100	$876,900	$348,200	118,600
Aug.	1,093,000	830,000	263,000	58,600
Sept.	1,279,900	898,700	381,200	69,700
Oct.	1,627,800	1,047,300	580,500	99,800
Nov.	1,565,400	1,006,500	558,900	11,500
Dec.	1,255,400	896,200	359,200	24,800
Jan.	822,600	720,900	101,700	20,800
Feb.	803,100	667,300	135,800	4,300
Mar.	1,270,600	915,800	354,800	82,500
	$10,942,900	$7,859,600	$3.083,300	$449,000
Inc.	$1,728,300	$1,279,300	$449,000...	....

Approximate earnings for April $1,345,000, and for two weeks ended May 14, $704,700, against $1,153,100, and $579,000, for same periods 1910.

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C.P.R. Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases over 1909-10, from July 1, 1910:

	Earnings.	Expenses.	Net Profits.	Net Increase or Decrease
July	$8,869,214.32	5,384,594.73	3,484,619.50.	1,004,748.86+
Aug.	9,255,331.67	5,563,659.34	3,691,672.33	727,614.46+
Sept.	9,315,213.07	5,403,614.03	3,911,599.64	479,710.47+
Oct.	10,229,370.77	5,724,210.25	4,505,160.52	118,863.33+
Nov.	9,413,238.22	5,676,115.96	3,737,122.26	44,784,31+
Dec.	8,705,283.99	5,418,750.10	3,286,533.87	171,110.79−
Jan.	5,740,206.34	5,084,088.47	656,117.87	660,478.52−
Feb.	6,375,576.57	5,230,869.06	1,144,707.51	342,311.73−
Mar.	8,880,640.59	5,644,074.05	3,156,566.54	445,393.15+
	$76,704,076 14	$19,129,975.99	$27,574,100.15	$1,989,435.12+
Inc.	$6,885,748.14	$1,896,313.02	$1,980,435.12	....

Approximate earnings for April $8,458,000, and for two weeks ended May 14, $3,946,000 against $7,830,000 and $3,649,000 for same periods 1910.

Duluth, South Shore and Atlantic Ry.—Operating revenue for March, $227,535.14; expenses $187,022.24; net revenue $40,512.90, against $276 893.18 operating revenue; $175,047.59 expenses; $101,845.59 net revenue for March, 1910. Aggregate operating revenue for nine months ended Mar. 31, $2,353,796.88; expenses $1, 671 434.19; net revenue $682,362,69. against $2 421 665.56 aggregate operating revenue; $1,648,929.79 expenses; $772,735.77 net revenue for same period 1909-10. Approximate earnings for Apr., $231,261, and for two weeks ended May 14, $118 493, against $276,763, and $134,889 for same periods 1910.

Mineral Range Rd.—Operating revenue for March, $68 652.83; expenses, $55,719.37; net revenue $12,933.46, against $68,453.92 operating revenue; $64,115 66 expenses; $4 338.26 net revenue for March 1910. Aggregate operating revenue for nine months ended Mar. 31, $569,039.71; expenses $547,485.49; net revenue $21,554.22, against $640,124.27 aggregate operating revenue; $553,409.08 expenses; $86,714.29 net revenue for same period 1909-10. Approximate earnings for Apr., $57,469 and for two weeks ended May 14, $27,783, against $60,816 and $28,279 for same periods 1910.

Minneapolis, St. Paul and Sault Ste Marie Ry.—Operating revenue for March, $1,015,732 71; expenses and taxes $777,608.68; operating income $238,124.03 against $1,132,994.49 operating revenue; $725,914 01 expenses and taxes; $407,080.48 operating income for March 1910. Aggregate operating revenue for nine months ended March 31 $9,971,976.21; expenses and taxes $6 831 021.14; operating income $3,140,955.07, against $11 781 611.73 aggregate operating revenue; $6,635,588.88 expenses and taxes; $5,146,022.85 operating income for same period 1909-10. Approximate earnings for Apr., $1,645,370, and for two weeks ended May 14, $781,521, against $1,827,945 and $838,168 for same periods 1910.

Chicago Division.—Operating revenue for March, $728,031.50; expenses and taxes $602,116.97; operating income $125,914.53, against $868,915.81 operating revenue; $554,764.04 expenses and taxes; $314,151.77 operating income for March 1910. Aggregate operating revenue for nine months ended Mar. 31, $6,780,123.35; expenses and taxes $5,279,288.02; operating income $1,500,835,33, against $6,522,178.89 aggregate operating revenue; $4,554,449.90 expenses and taxes; $1,967,728.99 operating income for same period 1909-10.

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Grand Trunk Ry. Earnings, Expenses, Etc.

The following figures show the earnings of the G.T.R., C.A.R., G.T. Western Ry. and D.G.H and M. Ry. separately, for Mar., as compared with Mar., 1910:—

GRAND TRUNK RAILWAY.

	1911.	1910.
Earnings	$3,027,000	$2,887,400
Expenses	2,181,000	2,088,200
Net earnings	$ 846,000	$ 799,200

CANADA ATLANTIC RAILWAY.

	1911.	1910.
Earnings	$ 166,000	$ 165,000
Expenses	143,000	125,000
Net earnings	$ 23,000	$ 40,000

GRAND TRUNK WESTERN RY.

	1911.	1910.
Earnings	$ 553,400	$ 582,650
Expenses	451,100	399,400
Net earnings	$ 102,300	$ 183,250

DETROIT, GRAND HAVEN AND MILWAUKEE RY.

	1911.	1910.
Earnings	$ 163,000	$ 158,100
Expenses	160,200	122,600
Net earnings	$ 2,800	$ 35,500

Aggregate from Jan. 1 to Apr. 30:—

TRAFFIC RECEIPTS OF THE SYSTEM

	1911.	1910.	Increase.
Grand Trunk ..	£2,202,838	£2,097,064	£105,774
Canada Atlantic.	125,594	119,710	5,884
G.T. Western ..	443,870	427,198	16,672
D.G.H. & M. ..	133,492	125,756	7,736
Totals	£2,905,794	£2,769,728	£136,066

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Transportation Conventions in 1911.

June 14-16—American Railway Master Mechanics' Association, Atlantic City, N.J.

June 19.—Association of Railway Telegraph Superintendents, Boston, Mass.

June 19-21.—Master Car Builders' Association, Atlantic City, N.J.

June 20.—American Association of Freight Agents, Kansas City, Mo.

June 20.—Train Dispatchers' Association of America, Baltimore, Md.

June 20-21.—Association of Transportation and Car Accounting Officers, Cape May, N.J.

June 21.—Freight Claims Association, St. Paul, Minn.

June 22.—American Association of Demurrage Officers, Niagara Falls, N.Y.

July 25-27. — International Railway General Foremen's Association, Chicago, Ill.

Sept. 19.—American Association of General Passenger and Ticket Agents, St. Paul, Minn.

Oct. 10.—Railway Signal Association.

Oct. 17-18.—American Railway Bridge and Building Association, St. Louis, Mo.

Oct. 19-21.—American Association of Dining Car Superintendents, Cincinnati, O.

Nov. 17-18.—American Association of Freight Traffic Officers, Cincinnati, O.

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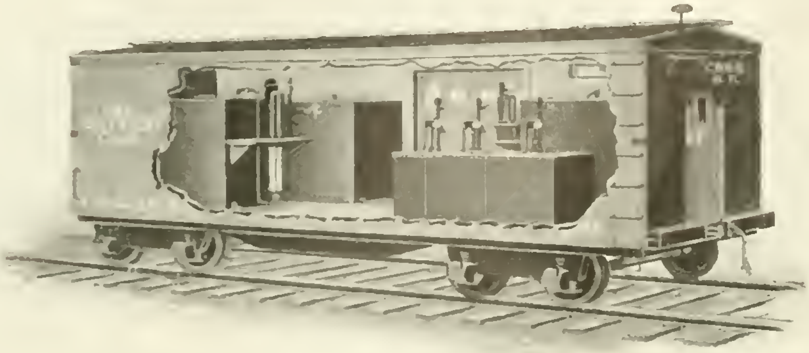
During March, 18 employes were killed, and 26 were injured in the course of their work in connection with the construction and operation of Canadian railways. Of the fatalities, 12 were due to being run over, three to collisions, and one each, to a derailment, to being caught between cars and to a dynamite explosion, while of the other accidents, seven were due to collisions, six to falls, five to being caught between cars, three each to being run over and to falling material, and one each to flying material and to exposure.



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Bowser Storage System

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Recent Nova Scotia Legislation.

The following acts relating to the transportation interests were passed at the recent session of the Nova Scotia Legislature:—

Arisaig and Country Harbor Iron, Coal and Ry. Co.—Amending powers.

Atlantic Coal Co.—Amending statutes of 1902, chap. 152.

Bear River and Caledonia Ry.—Amending statutes of 1907, chap. 144.

Blomidon Ry.—Incorporation.

Cape Breton Electric Co.—Amending statutes of 1910, chap. 130.

Dartmouth and Cow Bay Electric Ry.—Incorporation.

Dominion Coal Co.—Amending statutes of 1903, chap. 145.

Electric Railways.—Authorizing aid for building electric railways.

Halifax and Guysboro.—Amending act of 1906 to provide for building of railway between Halifax and Guysboro.

Halifax and South Western Ry.—Amending charter powers.

Intercolonial Ry.—Amending act of 1909 respecting cost incurred by North Sydney for extension of I.C.R. into the town.

Liverpool and Caledonia Ry.—Incorporation.

Lunenburg Electric Ry.—Incorporation, and a second act authorizing Lunenburg municipality to make cash contributions in aid of purchase of right of way within the municipality.

Margaree Coal and Ry. Co.—Extending time for construction.

Margaretville Steamship Co.—Amending statutes of 1907, chap. 157.

Maritime Coal and Ry. Co.—Extending time for construction.

Maritime Engineering Co.—Respecting company's powers.

National Coal and Mining Co.—Amending acts.

Nova Scotia Car Works.—Authorizing city of Halifax to assist company financially.

Shelburne and Bear River Ry.—Incorporation.

Shipbuilding.—An act to encourage the building of iron and steel ships at Halifax; and an act to enable city of Sydney to grant a bonus for purpose of establishing a shipbuilding, repair shop, wrecking plant and engine shop on Sydney harbor.

Street Railways.—Relating to street railways.

Sydney and Louisburg Ry.—Amending statutes of 1910, chap. 171.

Sydney, New Waterford and East Bay Mono Rail Co.—Incorporation.

Yarmouth Yacht Co.—Incorporation.

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Michigan Central Railroad Report.

The annual report of the M.C.R. for the year 1910 shows a total of 1,803.29 miles of line operated, against 1,746.46 miles in 1909. The mileage includes 270.07 miles of main line owned, 345.05 miles of proprietary lines, 1,096.16 miles of leased lines, and 92.01 miles of lines operated under trackage rights. During the year 23.60 miles of a line in the U.S. were taken up, and there were added 78.01 miles of lines operated under trackage rights, and 2.42 miles in respect of the Detroit River Tunnel. The capital stock authorized and outstanding remained at $18,738,000; the funded debt had been reduced from $42,159,000 to $41,870,578.68.

Referring to the double tube tunnel under the Detroit River, of which the entire capital stock is owned by the N.C.R., the directors say it has proved an entire success. It was put into experimental use for through freight traffic Oct. 9, 1910, and an order authorizing its use was issued by the Board of Railway Commissioners for Canada, after a thorough inspection, Oct. 14. Regular freight and passenger service was inaugurated Oct. 16. There still remained some work to be done, consisting principally of the interlocking system and additional equipment for the electrical sub-station, which it is estimated will cost $200,533, making the total cost, including interest on the money advanced from time to time by the M.C.R., $8,922,165. The acquisition of terminal freight and passenger yards and station buildings by the Tunnel Co. will require a considerable sum in addition to the amount mentioned.

The gross receipts from operation were $29,694,815.71, an increase of $2,279,348.51, and the operating expenses $21,628,906.26, an increase of $3,129,378.02, leaving a net revenue from rail operation of $8,065,909.45, a decrease of $850,029.51. After deducting $56,315.13 loss on certain outside operations, and $1,357,019.92 for accrued taxes, and bringing in other accounts, the gross corporate income was $7,746,254.32, a decrease of $938,481.24. The fixed charges, etc., absorbed $6,028,923.48, leaving a surplus of $1,717,330.84, from which dividends of $1,124,280 had been declared, leaving a balance of $593,050.84 to be carried forward to the current year. In explanation of these figures the directors state part of the increase of $763,609.44 in the deductions from income was due to additional rent paid to the Canada Southern Ry. in accordance with the terms of the lease.

The statistical tables annexed to the report show that the deductions from income included $840,000 interest on the 6% first mortgage bonds, $300,000 interest on the 5% second mortgage bonds of the Canada Southern Ry.; $5,200 interest on the 4% Leamington and St. Clair mortgage bonds; $450,000 rental of the Canada Southern Ry., being at the rate of 3% on a capitalization of $15,000,000. The expenditures on betterment of the Canada Southern Ry. were $599,344.15. The stocks owned or acquired under lease amount to $20,924,529.17, including $7,810,000 Canada Southern Ry.; $3,000,000 Detroit River Tunnel Co.; Toronto, Hamilton and Buffalo Ry., $446,400, and the bonds valued at $1,190,000, include $257,000 of the bonds of the Toronto, Hamilton and Buffalo Ry. These securities are carried in the books of the company at $8,655,994.09.

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Machine Shop Primer.—This is the title of a 148 page book prepared by F. H. Colvin, and F. A. Stanley, which, as its sub-title declares, is "an introduction to machine tools and shop appliances, with illustrations, names and definitions." The volume is intended primarily for the use of students and instructors in mechanical service. Section one contains sketches of 508 numbered machines, tools and appliances, which are named in section two, while in section three is an alphabetical reference to general information about shop matters, including concise definitions or bits of information about the tools or appliances named in sec. 1. Where cuts are used in sec. 3, they show machine tools with their parts numbered, the names being arranged in numerical order underneath. The book is issued at $1 net, the publishers being the McGraw-Hill Book Co., New York. It can be obtained through The Railway and Marine World's Book Department.

The United Engineering and Construction Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $1,000,000, and office at Toronto, to build and equip, railways, tramways, telegraph and telephone lines, docks, harbors, piers, wharves, canals, etc., and carry on a general contracting business. The incorporators are, F. P. Metzler, W. J. Taylor, G. B. Taylor, J. M. Spinks, E. Gillis, Toronto.

Great Northern Ry. Lines in Canada

Midland Great Northern Ry.—The proposed agreement as to the building of terminals in Winnipeg came up once more before the city council May 9, and was laid over for future consideration. The agreement submitted to the meeting was drawn up May 3, and provides for four subways south of the Assiniboine River, at Crescent Road on the north, at Wilkes Avenue, the south boundary of the city, and at two other crossing avenues that may be designated by the city. Special provision is also made for subways when required on the north side of the river at the crossing of Lavinia, Ellice and Sargent avenues. These avenues have not been opened up to the right of way of the M.G.N.R., but when they are and the city deems it necessary the railway will put in subways at its own cost. A. H. Hogeland, Chief Engineer, in an interview May 3, said it was the company's intention to begin work first on the terminals in the heart of the city. He could not state definitely whether the company would use its own tracks altogether at first, but work on the whole proposition would be pushed ahead. An agreement might be reached with the C.P.R. for the temporary use of its tracks to some point north of the river, but this would only be for a very short period. Notice has been given to the tenants of the property along Ross and Pacific Avenues west from Isabel to Nena St., to vacate the premises held by them by June 1, after which date the company will proceed to clear the site for the freight station and yards.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—J. H. Kennedy, Chief Engineer, has been in Ottawa for the purpose of discussing with the Department of Railways the route of the company's line through the Coquihalla Valley, where it and that selected for the Kettle Valley Lines extension conflict. Mr. Kennedy also discussed the possible routes through the Hope Mountains, and the possibility of an arrangement being made for running rights over the Canadian Northern Pacific Ry. from Hope Summit to Sumas River. It is expected that an arrangement will be made for an early start on construction from Penticton to Hope Summit.

Good progress is being made with the building of the 20 mile section between Abbottsford and Chilliwack, B.C., by J. W. Stewart and Co. An arrangement has been made by which a new station is to be built at New Westminster this year.

A plan for the improvements in the bed of False Creek, Vancouver, B.C., in connection with the terminals there, has been approved by the Board of Railway Commissioners. An arrangement has been made by which the company obtains control of 290 ft. of water frontage on Burrard Inlet, which, added to the frontage already owned, will give about 700 ft. of frontage there. It is said that wharves and terminals will be built as soon as possible. (May, p. 427.)

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The Michigan Central Rd. is now operating its trains by telephone, between St. Thomas and Windsor, Ont., and it is anticipated that the lines between St. Thomas and Buffalo, and between Bay City and Mackinaw will be similarly operated during the year. The company now operates its trains by telephone over its main line and divisions, as follows:—St. Thomas to Windsor; Detroit to Jackson; Jackson to Niles; Jackson to Grand Rapids; Jackson to Bay City; Detroit to Toledo and Detroit to Bay City. The work has been carried out under the supervision of J. J. Ross, Superintendent of Telegraphs, Detroit, Mich.

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Projected Lines, Surveys, Construction, Betterments, Etc.

Albert and Moncton Ry.—While the bill was passing through the House of Commons recently, the name of R. L. Johnston was substituted for that of C. MacKinnon, among the promoters, the latter having died. (April, pg. 319.)

Alberta Central Ry.—Large gangs of men, it is reported from Red Deer, Alta., have gone out to the construction camps, on the line being built to Rocky Mountain House, and it is said that grading is being pushed forward as rapidly as possible. (May, pg. 409).

Alberta Pacific Ry.—Nothing is being done in the way of arranging for the building of the line at Pincher Creek, Alta., under this company's charter. (Feb., pg. 109.)

Algoma Central and Hudson Bay Ry.—The Board of Railway Commissioners has approved the location plans of the extension from Hawk Lake to Hobon, Ont., on the C.P R. transcontinental line, between mileage 0 and 30.23.

We have been advised that it is expected to begin track laying early in June on the extension of the line from Hawk Lake, Ont., and that it is hoped to have the grading completed to Hobon, the junction with the C.P.R. transcontinental line, by the end of June.

The completion of the line from the present end of track near Pangissin northerly to Hawk Lake Jct., the junction point with the Michipicoten branch, is being proceeded with from both ends, in the expectation of reaching Montreal River from the south end before the end of May. Immediately after the track is laid to this point, the Canadian Bridge Co., will start work on the erection of a viaduct 1,500 ft. long and 125 ft. high across the river. It will be the largest bridge on the line, and is the only steel one being erected at present. There will, however, be some large bridge trestles to build, some of them containing about 1,000,000 ft. b.m. of lumber. The large trestles are generally over dry valleys, the only river crossings, aside from the Montreal River, are spanned with timber structures as temporary bridges. It is expected to replace these with steel bridges on concrete foundations.

At Sault Ste. Marie, Ont., it is expected to begin the construction of new terminal yards, including new roundhouses and shops, and the building of a new terminal station. Part of this work will be done during the current season. It is also intended to fill in some of the timber trestles on the first 69 miles of the line, between Sault Ste. Marie, and Pangissin.

The viaduct which is to be built across the Montreal River by the Canadian Bridge Co. will be 1,550 ft. long between parapet walls, and will consist of alternate tower and free spans. The tower spans will consist uniformly of 30 ft. deck plate girders, and the free spans of girders varying from 40 ft. to 85 ft. long, the majority being 60 ft. spans, although at the deepest portion of the viaduct these will, for economy's sake, be made 75 ft. An 85 ft. span will be used where a somewhat longer span will be necessary to extend from firm ground to firm ground over water. The distance from base of rail to masonry at the deepest point will be somewhat more than 122 ft., and the weight will be slightly more than a ton per lineal foot of viaduct. The feature of the viaduct will be a heavy curve, being eight degrees at one end and nine degrees at the other, with compensation The plans for the viaduct were made by Boller and Hodge, consulting engineers, New York City, and the work of erection is in the immediate supervision of R. S. McCormick, Chief Engineer of the railway

Brandon Transfer Ry.—The route recommended by the Board of Railway Commissioners' engineer for this projected line is said to be along 29th St., south to Lorne Ave., thence east to 25th St., and south along that street to the Canadian Northern Ry. track. This line will connect up all the lines now entering the city. It is also said to be recommended that the line be built by the C.P.R., the Canadian Northern Ry., and the city, and that it be operated by the Great Northern Ry. The city is favorable to the acceptance of the report, and is awaiting the decision of the companies interested and the order of the Board. (May, pg. 409.)

Burrard Inlet Tunnel and Bridge Co.—An arrangement has been arrived at between the company and the Vancouver, Westminster and Yukon Ry., whereby the company will build its proposed bridge across the second narrows at the site chosen for a proposed bridge to be built by the V., W. and Y. Ry. This will enable the company to secure a bridge subsidy of $200,000 which had been voted by the Dominion Parliament. The agreement also provides that the V., W. and Y. Ry. shall construct the approaches to the bridge and the connecting lines. The site of the bridge as now arranged will be 600 ft. west of that originally proposed. (April, pg. 319.)

Canada and Gulf Terminal Ry.—We are advised that it is expected that further construction on this line, from the present track end at Matane Que., towards Gaspe Basin, will be gone on with as soon as possible. Some detail matters in connection with construction have yet to be arranged. (May, pg. 409.)

Chicago, Milwaukee and St. Paul Ry.—Chicago, Milwaukee and Pacific Ry.—The latter is the title under which the C.M. & St. P. Ry. is extending its line to the Pacific Coast, and is associated with certain charters for railway construction in Alberta and British Columbia. Press reports stated that the C.M. and St. P. R. has secured options on considerable property in the vicinity of Lipton St., just south of Portage Ave., Winnipeg, for terminal purposes, and that a line will shortly be built into the city from Grafton, N.D. The report further states that the Lipton St. property will be utilized for freight terminals, and that running rights will be secured into the Fort Garry union station for passenger traffic.

From Vancouver, B.C., it is reported that a general office for the company's western business is to be opened immediately, and that additions will be made to the staff. The western extension of the C.M. and P.R. is being pushed forward to Everett, Wash., and press reports state that a branch line will be built from near Seattle into Vancouver. (Feb., pg. 111.)

Essex Terminal Ry.—The Board of Railway Commissioners has approved location plans for the line from lot 75, con. 2, Sandwich West tp., and the Saginaw Salt and Lumber Co.'s property, Sandwich, Ont. The Board of Railway Commissioners has authorized the company to carry its line across Becker St., Huron Church Line, Felix Ave., Chippewa St., Centre Road and Bedford St., Sandwich tp., Ont. (Feb., pg. 111.)

Halifax and Eastern Ry.—In connection with this projected railway, for the building of which the Nova Scotia Government has been offering considerable inducements, extending over the last ten years, the House of Commons has been asked by the Minister of Railways to vote $2,000,000 towards the building of the following lines, each line being voted $1,000,000:—From New Glasgow, or from Sunny Brae (in the event of the branch line to that place—the Nova Scotia Steel Co.'s line being acquired, as it may under the appropriation), to Guysboro, and from Cross Roads Country Harbor to the deep water there; and from Dartmouth, via Musquodoboit Harbor and the valley of the Musquodoboit River to Dean Settlement. The proposal is to build these lines as branches of the Intercolonial Ry. (Feb., pg. 111.)

Howe Sound and Northern Ry.—This company, which was incorporated by the B.C. Legislature, is applying to the Dominion Parliament for a declaration that its undertaking is a work for the general advantage of Canada, for authorization of the construction of additional lines, as follows: From near Lillooet, northerly along the valley of the Fraser River to Fort George, and northerly to and along the Parsnip River Valley to the Peace River and thence easterly to Peace River Landing, and to build a branch line from Newport, at the head of Howe Sound to North Vancouver and Vancouver. Power is also being asked to build, own and operate telegraph and telephone lines, elevators, wharves, warehouses, steam and other vessels, etc.

Plans are said to have been deposited with the Department of Railways for the section of the line from the summit of Anderson Lake to Lillooet, B.C. This line as projected was to start from Newport, on the seaboard, and to run by Green Lake, thence to Pemberton Meadows and on to Lillooet, a distance of about 120 miles. Press reports state that track has been laid on the first 12 miles inland from Newport, and that a considerable quantity of lumber is being taken out over the line and that the plans for the route to the main divide near Anderson Lake were deposited with the department some time ago, and that the plans now deposited cover the remainder of the route to Lillooet. The plans, it is stated, show a maximum gradient of 1.6%, and that only for a short distance at the main divide. A. McEvoy, the company's solicitor, in an interview May 1, is reported to have said, the company had 12 miles of its line built, and intended to add to it from time to time, the company had not been approached as to the purchase of its line by the G. T. Pacific Ry. or any other company. (April, pg. 319.)

Hudson Bay and Pacific Ry.—A Prince Albert, Sask., dispatch states that a communication has been received by the Board of Trade to the effect that a contract has been signed for the building of the projected line from Prince Albert, to Fort Churchill, and that work will be started right away. (May, pg. 409.)

Hudson Bay, Peace River and Pacific Ry.—Press reports from Winnipeg state that an engineering party is about to proceed to Fort Churchill to make a survey for the company's projected main line from that place towards Edmonton, Alta., and Port Simpson, B.C. The line as projected will run in a nearly straight line to the south of Lake Athabasca, by Peace River Landing, and on to Port Simpson, about 1,500 miles. Another party, it is stated, will make a survey from Winnipeg to Fort Churchill, running east of Lake Winnipeg, and a third party will work from Edmonton on a line to connect with the main line. (May, pg. 409.)

High River, Saskatchewan and Hudson Bay Ry.—A meeting of the provisional directors of this proposed new company, is reported to have been held at High River, April 28 when Dr. G. D. Stanley was elected President; N. H. Sheppard, Treasurer, and F. Crandall, Secretary. An executive committee was appointed to make arrangements for a preliminary survey of the route and an estimate of the cost of the line. (May, pg. 409.)

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Intercolonial Ry.—We were officially advised early in May with reference to the appropriation for locomotive and car shop equipment, the new freight yard and the proposed cut-off at Moncton, N.B., that nothing had been definitely decided as to what would be done nor when the work would be commenced.

In the supplemental estimates laid before the House of Commons May 8, provision was made for the following additional expenditures: Further amount required to strengthen bridges, $45,000; further amount required for the general protection of highways, $135,000; further amount required to increase accommodation and facilities along the line, $25,000; docks and wharves at Halifax, $600,000; towards the construction of a railway from Dartmouth to Dean Settlement, etc., N.S., $1,000,000; towards the construction of a railway from New Glasgow to Guysboro, Country Harbor, etc., $1,000,000; improvements at Mulgrave, N.S., $30,000; further amount required to increase accommodation at Truro, N.S., $42,800; towards the construction of a railway from Alba to Baddeck, on Cape Breton Island, $200,000; further amount required for addition to general office building at Moncton, N.B., $48,500; further amount required to increase accommodation at Fredericton, N.B., $18,000; towards construction of spur line from Hampton station to Hampton village, $15,000; further amount required to increase accommodation at Campbellton, N.B., $27,000.

Tenders were received to May 20 for the construction of an addition to the general office building at Moncton, N.B. (May, pg. 409.)

Inverness Ry. and Coal Co.—Press reports state that the extension of the line to St. Rose, N.S., at an early date, is contingent upon the success met with in the development of the coal areas in that district. (Sept., 1910, pg. 727.)

Kaslo and Slocan Ry.—A public meeting was held in Nelson, B.C., recently, at which $25,000 was subscribed to take up an option for the purchase of this line, and $13,000 additional was subscribed as a sinking fund. Mine owners in the district are behind the project, J. L. Retallack being the most prominent in the negotiations. The railway, which has not been operated for a long time, is being acquired from the Great Northern Ry. Co., U.S It is proposed to form a local company to rebuild the line, for which purpose, it is stated, the Provincial Government will guarantee a loan of $200,000, no interest being payable by the railway for three years. It is proposed to put the line in first class condition to McGuigan, and put a tug and barge on Kootenay Lake, so that ore cars can be delivered for transit to the smelters by the C.P.R., or the Great Northern Ry. (May, pg. 411.)

Kipp to Suffield, Alta.—According to a statement attributed to A. M. Grace, Chief Engineer of the South Alberta Land Co., surveys have been completed for a line from Kipp, Alta., about eight miles from Lethbridge, to Suffield, about 26 miles west of Medicine Hat on the C.P.R. main line. No mention is made in the statement as to what company made the surveys, or whether immediate construction is proposed.

Kettle Valley Lines.—The Board of Railway Commissioners has approved of location plans for the extension of the line from Westbridge to Wolverine Creek, B.C., mileage 20.9 to 35.3; and also authorizing the company to carry its line across eight highways.

Speaking at a meeting of the Penticton Board of Trade, May 1, J. J. Warren, President K.R.V.R., said construction work would be started east and west from that town within two months, and that by the end of the year it was expected 125 miles of track would be laid—about half the mileage between Midway and Merritt A wharf and a passenger station are to be built on the lake front at Penticton at once. (May, pg. 411.)

Kootenay and Alberta Ry.—The Chief Engineer, L. B. Merriman, arrived in Pincher Creek, Alta., April 30, from Winnipeg, to make an inspection of the work in progress. The branch line to Beaver Creek, which is under construction, is to be pushed forward with a doubled force of men, so as to be completed by Sept. (May, pg. 411.)

Manitoulin and North Shore Ry.—The Board of Railway Commissioners has approved of location plans for the extension of the line, now under construction, from mileage 46.73, to 80.49. (May, pg. 411.)

Mattawa to National Transcontinental Ry.—Press reports state that the Dominion Government proposes, in the event of the C.P.R. declining to extend its line along the east shore of Lake Timiskaming, to have surveys made to secure a route for an independent line from Mattawa, Ont., through Ville Marie, Que., and on to a convenient point on the N.T.R.

Montreal Central Terminal Ry.—Plans have been deposited with the Montreal city authorities showing that the company desires to enter the city by a bridge terminating near the Bonsecœurs market. The company is desirous of using Craig St., east and west, so that its lines can reach Maisonneuve and the Upper Lachine road, and wants to make connection with the Canadian Northern Quebec Ry. in the east, and with the C.P.R. and G.T.R. in the west. The plans show that the company wants to use the streets by sinking a cut in them on which trains will be operated. The city attorney said the council did not want to block the company from coming into the city, but it was useless for any company to think of occupying any open space in the streets for the purpose of operating cars. (April, pg. 321.)

New Brunswick and Prince Edward Island Ry.—Tracklaying has been completed on the branch line to the Fawcett foundry, and ballasting is being gone on with. The branch is being extended from the foundry to the quarries. (May, pg. 411.)

Ontario and Abitibi Ry.—In passing through the House of Commons, where the bill was read a third time, May 15, the title of the company proposed to be incorporated as the New Ontario and Quebec Ry., was altered as above. (May, pg. 411.)

Prince Edward Island Ry.—In addition to the amounts already voted for betterments on this line, provision was made in the supplementary estimates submitted to the House of Commons, May 8, for the following:—Original construction, $1,000; branch line from O'Leary to West Point, $50,000; branch line from Kensington to Stanley Bridge, via Long River and Clifton, $100,000. (May, pg. 413.)

Quebec and Saguenay Ry.—The construction on the first section of this line to be placed under contract is in charge of H. Doheny of O'Brien and Doheny, contractors. Work has been started, and it is expected to have the 56 miles completed by Sept. 1912. The 7.5 miles which has been let to the Bishop Construction Co., Montreal and Toronto, extends from Pointe a Pic, at the end of the 56 miles section, to Keeler, the site of the East Canada Power and Pulp Co.'s works.

O'Brien and Doheny, general contractors, have let sub-contracts as follows:—Mileage 30 to 33, O'Brien and Martin; mileage 33 to 36, Ryan and McDonald; mileage 36 to 39, Doheny and Thomson; mileage 39 to 41, D. R. McDonald; mileage 41 to 43.5, F. C. Jackson; mileage 48 to station 2855 P. river, St. F. X., Gagnon and Massicotte, mileage 56 to 60, Jas. McDonald; mileage 60 to 62.5, J. O'Neill; mileage 62.5 to 67, Mitchell and Sutherland; mileage 72 to 75, Irvine and Morrison; mileage 83.5 to 85.5, J. H. Stewart.

There have been deposited in the office of the Register of Charlevoix county, in the Saguenay district, plans and profiles of the route of this line, now under construction, from mileage 85.6 to 92.8 in Charlevoix county. (May, pg. 445.)

Reid Newfoundland Co.—A cargo of 4,500 tons of steel rails arrived at St. John's, Nfld., May 2, for use on the branch line under construction to Trepassey.

The first sod of the new Trepassey branch was turned May 9. The branch starts at Waterford bridge and will run through the Ferryland district to Trepassey.

Grading on the South Shore branch has been started at Waterford Bridge, on the main line, H. Burton being in charge of the work for the company, with W. F. Joyce as engineer. About 20 miles of track remain to be laid on the Bonavista branch, and this, is it expected, will be completed about the end of July. Surveys are in progress on the branch to Hearts Content, and it is expected that construction will be gone on with during the year. (April, pg. 321.)

Saguenay River to Cape Charles Bay.—A London, Eng., cable states that a syndicate is being formed for the purpose of building a railway from the Saguenay River, Que., to Cape St. Charles on the Labrador coast, some 650 miles from Quebec. J. N. Greenshields, K.C., of Montreal, who is interested in the matter, has been in London in consultation with representatives of the syndicate. It is stated that the proposal is to extend the Quebec and Saguenay Ry., as soon as it is completed to Saguenay River, to Cape St. Charles, and to construct there such works as will make it an all the year round trans-Atlantic port. In an interview, the Premier of Newfoundland said in New York, May 9, there were then in the city representatives of a British syndicate which had acquired rights in a railway running out of Quebec, with a charter to build a railway in the direction of Cape St. Charles. He saw no reason why such a railway should not be built and operated in connection with a line of fast steamers between St. Charles and Newfoundland. The Dominion Parliament and the Quebec Legislature, have both incorporated companies having powers to build lines in the territory named.

Temiskaming and Northern Ontario Ry.—We were officially advised May 6, in connection with the building of the branch to Porcupine Lake, that 28 miles of the branch had been definitely located and placed under construction. The grading of the first 17 miles was completed and ready for tracklaying, and the grading on the remaining 11 miles was well advanced and will, it is expected, be completed by June 1. Track had been laid on 12 miles, and the first lift of ballast had been given to the first nine miles. All the temporary bridging had been completed. There is but one steel bridge on the branch, at the crossing of Frederick House River. A temporary bridge will be put up so as to get the tracks across, when the concrete abutments will be put in, and the steel superstructure erected.

An engineering party will be sent out during the summer for the purpose of exploring the Moose River country, sloping from the height of land to James Bay. A special examination will be made of the shores of the bay with a view of selecting a suitable location for a harbor, to which the T. and N.O.R. gives the G.T.R. power to hold, guaran- may be extended.

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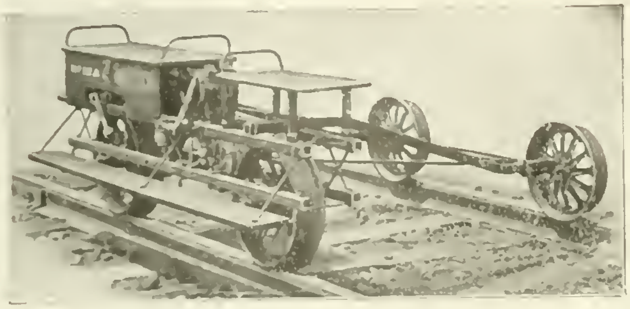

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The party which will make the survey from Cochrane to James Bay, will be a small one, and will be in charge of C. S. Ellis.

J. L. Englehart, Chairman of the Commission, on his return to Toronto, May 13, said steel had been laid on the Porcupine branch as far as Frederickhouse River, about 15 miles. The temporary bridge across the river had been completed. It consists of 400 ft. of pier trestle, and 400 ft. of approaches. Arrangements were made so that passengers could be carried over the branch, beginning May 15. According to the progress being made, the entire branch should be ready for traffic July 1. On the main line it is proposed to build stations at Golden City, Thornloe, Iroquois River and Matheson. (May, pg. 413.)

Toronto, Hamilton and Buffalo Ry.—The Board of Railway Commissioners has ordered an overhead crossing of the Hamilton Radial Electric Ry. on the north side of Princess St., Hamilton, Ont. (April, pg. 323.)

Vancouver to Fort George, B.C.—A meeting of business men was held in Vancouver, May 15, to urge the Provincial Government to vote a subsidy in aid of a railway from Vancouver to Fort George, B.C.

The G.T. Pacific Ry., the Howe Sound and Northern Ry., the British Columbia and Alaska Ry., and other companies have authority under Provincial or Dominion acts, to build a line between these two points.

Vancouver, Westminster and Yukon Ry.—Construction on lines to connect with the proposed bridge over the Second Narrows, Vancouver, B.C., will, it is stated, be started shortly. (Sept., 1910, pg, 729. See also Burrard Inlet Tunnel and Bridge Co.)

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Rutland Railroad Report.

The annual report for the year 1910, covers the operation of the system, a total of 468.11 miles, of which 18 miles are leased, and 53 miles operated under trackage rights for passenger trains only. The leased lines includes the Rutland and Noyan Ry. to Noyan Jct., Que., 3.39 miles, and the lines operated under trackage rights are:—Noyan Jct. to Iberville Jct., Que., 22.50 miles; Iberville Jct. to Montreal, Que., 30.50 miles. The gross corporate income was $918,895.83, and after meeting fixed charges there was a surplus of $313,011.97, which was appropriated as follows: Additions and betterments, $21,029.03; improvements, $270,000; carried forward to current year's accounts $21,982.94. The amount at credit of profit and loss account is $942,011.31. The total revenue from operation was $3,339,833.83, and the operating expenses $2,356,256.24. The fixed charges include $4,000 interest on the 4% first mortgage bonds of the Rutland and Noyan Ry., paid as rental, and $54,000 interest on 4% Rutland-Canadian first mortgage bonds; and the securities owned by the company, which are carried at $1,698,380.17 in the books, include $100,000 stock and $100,000 first mortgage bonds of the Rutland and Noyan Ry., with $25,000 of the $1,330,000 bonds of the Rutland-Canadian Rd.

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We are advised that it is the G.T.R. management's intention to put the standard code of operating rules, as approved by the Board of Railway Commissioners into effect on its lines in Canada, as soon as the examination of the employes can be completed. The General Transportation Manager states that he hopes the examinations will be completed by June 18.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers to distinctly understand that we are not paid for the publication of any of this matter and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

Taylor & Arnold, Limited, Railway Supplies, Montreal, have issued a post bound sectional catalogue devoted to locomotive and car specialties and compressed air devices.

The Hiram L. Piper Co., Ltd., has removed to 93 St. Remi Street, St. Henry Ward, Montreal, where it has built a commodious brick factory specially for the manufacture of railway lamps, signals, locomotive headlights, marine lamps, etc.

We are advised that the suit of the U.S. Light and Heating Company, vs. J. B. M. Electric Co., Gould Coupler Co., and John W. Jepson, involving patent applications serial 404,271 and serial 404,272, in the Western District of New York, before Judge Hazel, has been decided in favor of the U.S. Light and Heating Co.

The Orenstein Arthur Koppel Company, which is making extensive additions to its plant at Koppel, has ordered from Tate, Jones & Co., Inc., Pittsburg, Pa., a contract for the complete oil burning equipment and furnaces, consisting of pumping system, large rivet forges, open forges, forging furnaces, and pipe bending furnaces.

The T. H. Symington Co., Baltimore, Md., has recently published an attractive booklet illustrating and describing the Farlow draft rigging which is so largely used on cars and locomotives in this country and abroad. The booklet, which is entitled "Two Yokes in Transportation," enumerates concisely thirty Farlow facts which are of interest to all motive power and transportation department railway officials.

Press reports stated recently that the Canadian Steel Foundries, Ltd., had contracted for additions to its Welland, Ont., plant, to cost about $250,000. We are officially advised that the reports are very much exaggerated. Contracts have been given for the construction of two buildings at its Welland, Ont., plant. The one is a small oil house, the other will contain a chemical laboratory, a small emergency hospital and a storage room with office.

The Universal Vanadium Co. has been incorporated under the laws of the State of Delaware, with the following officers and directors: Ed. M. McIlvain, President, 30 Church St., New York City; Col. Millard Huneker, Vice President, 23 Rue de la Paix, Paris, France; J. C. Gray, Secretary and Treasurer, Frick Bldg., Pittsburgh, Pa.; J. W. DeWyckoff, European Representative, 64 Victoria Street, Westminster, London, England; E. Marshall Fox, Wetley Rocks, Staffordshire, England; S. D. Townsend, Jr., Wilmington, Delaware; W. McIlvain, Reading, Penna. Ever since the formation of the American Vanadium Co. its entire product, consisting of vanadium alloys, has been marketed by the Vanadium Sales Co. of America. The offices of both companies have been in the Frick Building, Pittsburgh, Penna., and their products, especially ferro-vanadium, have been sold in every manufacturing country in the world. The Universal Vanadium Co. was formed for the purpose of acting as selling agents for the American Vanadium Co. in a more comprehensive and effectual manner, and it will act in a selling capacity in conjunction with the Vanadium Sales Co. of America, both companies thus taking charge of the entire product of the American Vanadium Co.

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New England Connections with Canada.

In a recent interview, E. H. Fitzhugh, First Vice President G.T.R., is reported as stating that the company had under consideration a proposition to extend its line to Boston, Mass. Within a few months it was hoped to begin work on building the Southern New England Rd. from Palmer to Providence, R.I.

The bill granting the S.N.E.R. access to the waterfront at Providence, either over or under the New York, New Haven and Hartford Rd. tracks, was signed by the Governor of the State, May 5. An agreement has been reached between the two companies, under which there will be a grade crossing at one point, and at another a tunnel under the tracks.

A conference was held in Boston, May 5, between the representatives of the two companies with a view of adjusting the differences as to the lines in the vicinity of Brattleboro and Bellows Falls, Vt. It is expected that a satisfactory agreement will be reached.

Notice has been given by the Boston and Maine Rd., cancelling a traffic agreement with the Central Vermont Ry., which has been in operation for some years. The N.Y., N.H. and H. Rd., controls the B. and M.R. (May, pg. 439.)

◆

Oil for Fuel for C. P. R. Locomotives.

Elsewhere in this issue it is stated that W. Whyte, Vice President, C.P.R., had announced that crude oil would be used for fuel in the mountains. He recently stated that it had been decided to make an experiment and that he would recommend to the President the use of oil for fuel for the entire distance through the mountains, in order to remove the conflagration hazard. In reference to a reported failure of the large locomotives now in use, Mr. Whyte said: "It is not a failure of the locomotive. It is a failure of the fireman. A fireman shovelling coal on one of these locomotives for a distance of 130 miles, is physically completely exhausted before getting to the end of the run. When hiring firemen at present we look for broad chested, stalwart men. When we use oil, we will look not for physical strength but for intelligence. We will need men skilful enough to regulate the flow of oil to correspond with the use of steam. So far as men are concerned, it is estimated that three times as many employes are needed to handle coal as are required to handle oil. Oil is also much more efficient in the production of steam. So far as economy is concerned, we do not yet know what the result will be, but the experiment will be tried. None of the locomotives have yet been prepared for the change, but the alteration can be readily made. On our coast steamships, the test has already been made, and it has been quite successful."

◆

Railway Lands Patented. — Letters patent were issued, during March, in respect of the following railway lands in Manitoba, Saskatchewan, Alberta and British Columbia:

	Acres.
Canadian Northern Ry.	516.89
Canadian Pacific Ry.	205.02
Canadian Pacific Ry. roadbed and station grounds	4.83
Grand Trunk Pacific Ry.	52.74
Total	778.98

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Leave North Parkdale - - -	9.15 p.m.	Arrive Ottawa, 6.50 a.m.
Leave West Toronto - - -	9.30 p.m.	Arrive Montreal 7.00 a.m.
Arrive North Toronto - - -	9.40 p.m.	Daily except Sunday.
Leave North Toronto - - -	10.00 p.m.	Will Stop at Westmount.

¶ The residents of Toronto are adjacent to either North Parkdale, West Toronto or North Toronto stations, same being easily accessible and closer to residential districts.

¶ The North Toronto route is over an hour faster and overcomes a long hill climb for the train out of Toronto, obviating any inconvenience and ensuring early arrival at Montreal and Ottawa.

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North Toronto Station **King Edward Hotel** **West Toronto Station**

Orders by the Railway Commissioners.

Beginning with June, 1904, we have published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the hearing took place and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the date assigned to them.

13463. Apr. 19.—Authorizing Central Electric and Gas Co., Portage La Prairie, Man., to erect wires across C.P.R. at Main St.

13464. Apr. 19.—Authorizing C.P.R. to build bridge 96.3 over Johnston Creek, Laggan sub-division, Alberta Division.

13465. Apr. 19.—Authorizing T.H., & B. Ry. to cross by overhead structure, the Hamilton Electric Radial Ry. on north side of Princess St., Hamilton, Ont.

13466. Apr. 19.—Authorizing Central Electric and Gas Co., to erect wires across C.P.R. at Tupper St., Portage La Prairie, Man.

13467. Apr. 20.—Approving C.P.R. plan of standard no. 1 freight shed.

13468. Apr. 20.—Approving C.P.R. plan of standard tell tale.

13469. Apr. 19.—Approving Manitoulin and North Shore Ry. location from mileage 46.73 to 80.49, Ont.

13470. Apr. 21.—Authorizing Central Ontario Ry. to open for traffic, its Whitney extension for 14½ miles from Maynooth station.

13471. Apr. 19.—Authorizing C.P.R. to build bridge 148.6 on its Portal sub-division, Saskatchewan Division.

13472. Apr. 21.—Authorizing Standard Natural Gas Co., Dunnville, Ont., to lay pipe under G.T.R. at Onondaga Road.

13473. Apr. 4.—Authorizing Central Ontario Ry. to take for better station accomodation, additional land in Hillier tp.

13474. Apr. 13.—Fixing time up to which C.N.Q.R., C.P.R., and G.T.R., shall receive freight in their Montreal warehouses. This order is given in full on another page.

13475. Apr. 19.—Ordering C.P.R. to divert public road in Ops tp., Ont., 2 miles south of Lindsay, at mileage 19.95.

13476. Apr. 22.—Approving G.T.R. plan for change of alignment in vicinity of Rideau canal and across Main and Elgin Sts., and Echo Drive, Ottawa.

13477. Apr. 22. Authorizing G.T.P.R. to cross highway in n.w. ¼ sec. 15, tp. 53, r. 28, w. 2 m., Sask.

13478. Apr. 19.—Authorizing Temiscouata Ry. to install half-interlocker at level crossing of its main line with C.P.R. siding at Edmundston, N.B.

13479. Apr. 4.—Authorizing G.T.R. to install interlocking plant at C.P.R. expense, at crossing near Fergus, Ont., to be completed by Aug. 1.

13480. Apr. 15.—Authorizing Berlin, Ont., Sewerage Commissioners to lay two pipes under G.T.R.

13481, to 13483. Apr. 21.—Authorizing Seymour Power and Electric Co., to erect wires across Bell Telephone Co.'s wires in Port Hope, Ont.

13484. Apr. 22.—Approving plans of station to be erected by G.T.R. at Beauharnois, Que., as required by order 12504, Dec. 9, 1910.

13485. Apr. 19.—Declaring collection of interswitching charges by C.P.R. on shipments of Atikokan Iron Co., Port Arthur illegal. This order is given in full on another page.

13486. Apr. 22.—Authorizing C.P.R. to build a no. 11 modified station at Osgoode, Ont.

13487. April 25.—Authorizing C.N.O.R. to divert public road on lot 6, con A, Tyendinaga, tp.

13488. April 25.—Authorizing C.P.R. to build additional track across road allowances in Medicine Hat, Alta.

13489. Apr. 21.—Approving Rutland Rd. Standard Passenger Tariff C.R.C. 339, at 3c. a mile.

13490. April 25.—Approving C.N.R. location through tps. 13-16, r. 24-26, w. 2 m., Sask., mileage 58.27 to 85.1.

13491. April 25.—Approving plan re improvements on bed of False Creek, Vancouver, B.C.

13492. April 25.—Authorizing C.N. Alberta Ry. to cross seven highways.

13493. April 25.—Authorizing Kettle River Valley Ry. to cross eight highways in British Columbia.

13494. April 19.—Standard regulations regarding pipe crossings under railways.

13495. April 25.—Ordering appointment of watchman at Montreal Rolling Mills siding. Montreal.

13496. April 4.—Rescinding order 11880, Oct. 5, 1910, re G.T.P.R. Standard Freight Mileage Tariff, C.R.C. 7.

13497. April 25.—Authorizing Ontario Hydro-Electric Commission to erect wires across Toronto, Niagara and Western Ry. at Hurontario St., Toronto tp.

13498. April 25.—Authorizing C.P.R. to build spur for Perfection Concrete Co., lots 43-44, St. James Winnipeg.

13499. April 25.—Ordering G.T.R. within 90 days to install improved electric bell at Gravel Road between Millbrook and Port Hope, Ont., 20% to be paid from railway grade crossing fund.

13500. April 25.—Approving Kettle River Valley Ry. location from Westbridge to Wolverine Creek, mileage 20.9 to 35.3, B.C.

13501. April 25.—Authorizing Jones, Sherwood, and Burns, municipalities, Ont., to build crossing over G.T.R. between cons. 4 and 5, Sherwood tp.

13502. April 25.—Authorizing C.P.R. to build four bridges on its Ontario and Alberta divisions.

13503. April 25.—Authorizing C.P.R. to build spur for Canadian Western Lumber Co., at Fraser Mills, B.C.

13504. Apr. 25.—Authorizing city of Toronto to erect wires across C.P.R. on Perth Ave.

13505 to 13507. Apr. 25.—Authorizing town of Dauphin, Man., to lay water pipe under C.N.R. at Main, First and Second Sts.

13508. Apr. 26.—Authorizing C.P.R. to build spur for Dominion Bridge Co., Toronto.

13509. Apr. 26.—Authorizing C.N.R. to take possession of certain C.P.R. lands in the western provinces.

13510. Apr. 27.—Authorizing G.T.P. Branch Lines Co. to cross with its Regina Boundary branch, 17 highways in Saskatchewan.

13511 to 13514. Apr. 27.—Authorizing municipality of city and county of St. John, N.B. to build certain drainage works under C.P.R. at North St., Union Point Road, Main St., etc.

13515, 13516. Apr. 28.—Authorizing Vancouver Power Co. to erect wires across C.P.R. at Hazel St., and Essenden Ave., Abbotsford, B.C.

13517. Apr. 28. Authorizing Saraguay Electric and Water Co. to erect wires across C.N.Q.R. at St. Leonard St., Pointe aux Trembles.

13518, 13519. Apr. 27-28.—Authorizing C.P.R. to build bridge 57.8 on its Brandon sub-division, Manitoba Division, and bridge 39.5 on its Havelock sub-division, Ontario Division.

13520. Apr. 27.—Extending to July 1, effective date of tariff of track-scale allowances filed by certain railways.

13521. Apr. 15.—Authorizing Windsor Gas Co. to lay pipe under Essex Terminal Ry. at Walker Road, Walkerville, Ont.

13522. Apr. 28. Authorizing city of Hamilton, Ont., to lay water pipe under G.T.R. on Ferguson Ave.

13523. Apr. 28.—Authorizing Esesx Terminal Ry. to cross Becker and Huron Sts., Church Line, Felix Ave., Chippewa St., Centre Road and Bedford St. Sandwich, Ont.

13524. Apr. 28.—Authorizing C.N.O.R. to divert public road on lot 7, con. 4, Tyendinaga tp.

13525. Apr. 29.—Authorizing C.N.R. to cross highway overhead at sec. 6, tp. 9, r. 32, and sec. 1, tp. 9, r. 33, w. p. m., Sask.

13526. Apr. 28.—Authorizing C..P.R. to operate its Quill Lakes Branch across 43 highways in Manitoba and Saskatchewan.

13527. Apr. 28. — Authorizing G.T.P. Branch Lines Co. to divert road on its Calgary Branch in s.e. ¼ sec. 6, tp. 26, r. 27, w. 4 m., Alta.

13528. Apr. 29.—Approving G.T.P. Branch Lines Co.'s Melville-Regina Branch from city limit, mileage 92.62 to west side of Albert St., mileage 97.57, Regina, Sask.

13529. May 1.—Granting railways leave to appeal to Supreme Court, re Regina rates case.

13530. Apr. 28.—Authorizing C.N.R. to build spur for Winnipeg Sandstone Brick Co., west of Pembina St., Fort Rouge, Winnipeg.

13531. May 1.—Authorizing Canadian Northern Western Ry. to cross with its Brazeau Branch, G.T.P.R. Tofield Branch, Alta.

13532. May 1.—Amending order 13492, Apr. 25, re location of Canadian Northern Alberta Ry.

13533. May 1.—Approving revised plan of C.N.O.R. bridge across Moira River, Belleville.

13534. May 1.—Authorizing C.N..O.R. to divert and cross public road on lot 25, con. 1, South Elmsley tp.

13535. May 1.—Amending order 1415. Aug. 30, 1906, re crossing of James Bay Ry. by Georgian Bay and Seaboard Ry. (C.P.R.), at mileage 41.8, near Brechin, Ont.

13536. May 1.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.), to cross G.T.R. Haliburton Branch overhead.

13537. May 1.—Approving plans of C.N.O.R. subway at Division St., Cobourg.

13538. May 1.—Rescinding clauses 7 and 8 of order 13509, Apr. 28, which authorized C.N.R. to take certain C.P.R. lands.

13539. May 1.—Authorizing C.P.R. to build bridge 104.49 over Blind River, (west arm), on its Sault Ste. Marie Branch, Ont.

13540. May 1.—Ordering C.P.R. to provide graded access from roadway to farm gate for L. McArthur, Priceville, Ont.

13541. May 1.—Extending for six months from date, time for filing revised Standard Tariff of Maximum Freight Tolls of Esquimalt and Nanaimo Ry. (C.P.R.), as provided by order 12179.

13542. Apr. 26.—Dismissing complaint of Connecticut Oyster Co. re rates charged by express companies on returned empties to Toronto, from points in Western Canada.

13543, 13544. May 2.—Authorizing Seymour Power and Electric Co. to erect wires across G.N.W. Telegraph Co.'s wires and across C.P.R. at lot 12, con. 1, Hope tp., Ont.

13545. May 2.—Authorizing Trenton Electric and Water Co., to erect wires across C.N.O.R. at Brighton.

13546. May 2.—Authorizing city of Toronto to lay sewer under C.P.R. at Shaw St.

13547, 13548. May 2-1.—Authorizing town of Sault Ste. Marie, Ont., to lay sewer under C.P.R. at Pim and Superior Sts.

13549, 13550. May 2.—Authorizing Montreal Light, Heat and Power Co. to lay pipe under C.P.R. at Maguire and Hadley Sts., Montreal.

13551. May 2.—Approving plans showing layout of interlocker for new drawbridge over Welland Canal at Welland, Ont., including interlocker of M.C.R. and T.H. & B.R. by Niagara, St. Catharines and Toronto Ry.

13552. May 2.—Authorizing M.C.R. to build bridge at Mancell drain, Tilbury East tp., Ont.

13553. May 2.—Relieving G.T.R. from further protection of Talbot Road crossing, North Cayuga tp., Ont.

13554. May 2.—Ordering C.N.R. within 30 days under penalty of $25 a day, to fence its right of way just west of Odessa townsite, Sask.

13555. May 2.—Approving Ottawa and New York Ry. bylaw respecting certain officials issuing tariffs of tolls.

13556. May 2—Correcting error in C.N.Q.R. application re location of its St. Jacques branch, from St. Jacques to Rawdon.

13557. May 2.—Allowing correction in C.P.R. book of reference re spur line in Fort William, Ont.

13558. May 2.—Approving C.P.R. plans for station at Gleichen, Alta.

13559, 13560. May 2.—Authorizing C.P.R. to build three bridges on its Nipigon subdivision and to use six bridges on its North Bay subdivision, Lake Superior Division. .

13561. May 3.—Authorizing C.P.R. to build extra track across road allowance between secs. 27 and 28, tp. 9, r. 17, w. 4 m., Alta.

13562. May 2.—Authorizing C.P.R. to cross with its Pheasant Hills branch, 44 highways and divert same between mileage 254.5 and 328.3.

13563. Apr. 24.—Approving portion of location of South Ontario Pacific Ry. from near Guelph Jct., to Hamilton, Ont.

13564. Apr. 24.—Authorizing C.N.O.R. to build overhead farm crossing on south half of lot 27, con. D. Scarboro tp.

13565. May 3.—Authorizing city of Strathcona, Alta., to build steel bridge or viaduct, as highway over Edmonton, Yukon and Pacific Ry.

13566. May 3.—Approving C.P.R. class A station at Bird's Hill, Man.

13567. May 2.—Authorizing C.N.Q.R. to build siding for Imperial Syrup Co., Montreal.

13568. Apr. 25.—Ordering C.P.R. and G.T.R. to file plans by Aug. 1, for viaduct and station at Toronto; work is to be completed in two years from that date.

13569. May 2.—Authorizing C.N.O.R. to divert highway in Tyendinaga tp.

13570. May 3. Approving location of six G.T.P.R. stations in the western provinces.

13605. Apr. 24.—Authorizing C.P.R. to build three spurs for Canadian General Electric Co., Peterboro, Ont.

13606. May 6.—Authorizing Hamilton Cataract Power Co. to erect wires across N. St. C. & T. Ry., in Crowland tp., Ont.

13607. May 6.—Authorizing Michel Water, Light and Power Co. to lay pipe under C.P.R. at mileage 14.9, Cranbrook section, B.C.

13608. May 8.—Approving G.T.R. plans of steel work, east and west abutments and centre pier, Humber River bridge, Toronto.

13609. May 10.—Authorizing Shawinigan Water and Power Co. to erect wires across C.N.Q.R. near l'Epiphanie, Quebec.

13610. May 1.—Authorizing Canadian Northern Ry. to take for right of way certain C.P.R. land grants in the Calgary irriga-

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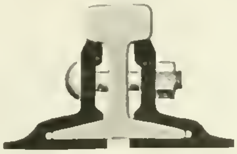
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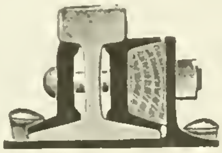
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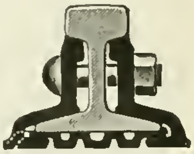
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Philadelphia St. Louis Washington Chicago Boston Montreal San Francisco tion district, compensation to be settled by an arbitrator to be appointed by the Board, in default of agreement.

13611. May 9.—Authorizing Essex Terminal Ry. to cross Oak, Elm, Campbell and Bridge Aves., Sandwich West tp., Ont.

13612. May 10.—Approving agreement between Bell Telephone Co. and G.T.R. re telephones in Chateau Laurier, Ottawa.

13613 to 13615. May 11. — Authorizing C.N.O.R. to cross public roads in cons. 1 and B, Chatham tp., Que.

13616. May 9.—Authorizing C.N.O.R. to build bridge over creek at station 1179, Brighton tp.

13617. May 9.—Authorizing C.N.R. to cross nine streets in Rapid City, Man.

13618. May 10.—Authorizing C.N. Western Ry. to cross with its Stettler-Brazeau branch the C.P.R. Calgary-Edmonton Branch in s.e. ¼ sec. 15, tp. 39, r. 27, w. 4 m., Alta.

13619. May 9.—Extending for 60 days from June 1, time within which C.P.R. shall instal power brakes in accordance with order 10462, May 3, 1910.

13620. May 9.—Authorizing C.P.R. to build spur for Beatty Bros., Fergus, Ont.

13621. May 10.—Extending to Aug. 1 time in which C.P.R. may build spur for Hamilton Powder Co., near Barnet Station, B.C.

13622, 13623. May 10.—Approving plans of C.P.R. Standard no. 3 engine house and standard freight car shop.

13624, 13625. May 10.—Relieving G.T.R. from further protection at crossings ¼ mile east of Kearney station, and at mileage 56.30, Coteau Landing, Que.

13626. May 10.—Approving plans of subway crossing at Windermere and Ellis Aves., Toronto.

13627. May 10.—Authorizing G.T.P.R. to cross highway with its main line at n.w. ¼ sec. 30, tp 53, r 9, w. 5 m., Alta.

13628. May 9.—Approving G.T.R. bylaw 26, authorizing J. W. Loud, F.T.M., J. Pullen, A.F.T.M., and C. A. Hayes, G.F.A., to issue tariffs of tolls in respect to freight traffic.

13629. May 9.—Authorizing G.T.R. to build siding into premises of Alexander Bremner, Ltd., St. Henri Ward, Montreal.

13630. May 9.—Approving location of G.T.P.R. Standard no. 1 station at Leaman, Alta.

13631, 13632. May 10.—Authorizing city of Winnipeg to lay water pipe under G.T.P.R. and C.N.R. at Hugo St.

13633. May 11.—Authorizing Ontario Pipe Line Co. to lay pipe under G.T.R. at Hilliard St., Hamilton.

13634. May 11.—Authorizing Shawinigan Water and Power Co. to erect wires across Bell Telephone Co.'s wires near Three Rivers Que.

13635. May 11.—Authorizing G.T.R. to build spur into Carroll Bros'. premises, Humberstone tp., Ont.

13636. May 12.—Authorizing G.T.R. to build spur into Longford Quarry Co.'s premises, Rama tp., Ont.

13637. May 12.—Ordering C.P.R. to build station at Markinch, Sask., before Aug. 1.

13638, 13639. May 11.—Authorizing city of Nanaimo, B.C., to lay pipe under Esquimalt and Nanaimo Ry. at Franklin and Wentworth Sts.

13640. May 11.—Authorizing city of Edmonton, Alta., to lay extension of Rat Creek sewer near junction of Riverview Ave. and Eastern Boundary of Dominion Government reserve.

13641. May 11.—Authorizing Rev. A. Comeau, St. Hilaire, N.B., to lay water pipe under Temiscouata Ry.

13642. May 11.—Authorizing New Brunswick and P.E.I. Ry. to build branch to Sackville Freestone Co.'s premises, Sackville, N.B.

13643. May 12.—Extending to July 1 time for G.T.P.R. road diversion in n.e. ¼ sec. 34, tp. 45, r. 21, w. 4 m., Alta.

13644. May 12.—Approving C.N. Alberta Ry. location through tp. 53, r. 7-10, w. 5 m., mileage 62.47 to 82.62, Alta.

13645. May 12.—Authorizing G.T.P.R. to divert road through the n.w. ¼ sec. 13, tp. 35, r. 23, w. 4 m., Alta.

13646, 13647. May 12, 13.—Authorizing Seymour Power & Electric Co. to erect wires across Bell Telephone Co.'s and G.N.W. Telegraph Co.'s wires at Darcy St., Cobourg, and at Kingston Rd., Northumberland county, Ont.

13648. May 15.—Ordering C.N.R. to fence its right of way through s.w. ¼ secs. 35, 36 and 34, tp. 50, r. 6, w. 4 m., Vermilion District, Alta., before June 1, under penalty of $25 a day.

13649. May 15.—Authorizing C.P.R. to build bridges 117.8, Bow River, Alberta Division; 75.6, Cascade subdivision, B.C. Division; 104.9, Grand Coulee, Moose Jaw subdivision, Saskatchewan Division.

13650, 13651. May 15.—Approving C.P.R standard enclosed tank and standard No. 1 enclosed water tank.

13652. May 15.—Authorizing C.P.R. to build industrial spur for Western Supply & Equipment Co., Lethbridge, Alta.

13653. May 15.—Authorizing G.T.R. to build extension to siding into M. Beatty & Sons' premises, Welland, Ont.

13654. May 15.—Authorizing National Transcontinental Ry. Commissioners to lay sewer under C.N.R. at mileage 246.5 near St. Boniface, Man.

13655. May 2.—Authorizing C.N.O.R. to cross overhead, public road on lot 29, Nepean tp.

13656. May 2.—Approving amended location of Vancouver, Victoria & Eastern Ry., from mileage 0 to 12 and mileage 16 to 17 from Coquihalla summit, B.C.

13657. May 2.—Authorizing C.P.R. to build spur to Dominion Government military camp near Farnham, Que.

13658. May 16.—Authorizing C.P.R. to build bridges 124.9, Cataract Creek, and 121.2, Bath Creek, Laggan subdivision, Alberta Division; 6.2 and 129.3, Brandon subdivision, Manitoba Division; 75.0, Old Man River, Crow's Nest subdivision, Alberta Division; 108.6, Cascade subdivision, B.C. Division.

13659. May 16.—Authorizing C.P.R. to build two additional tracks across road allowance between secs. 23 and 24, tp. 10, r. 12, w. 4 m., at Burdette station, Alta.

13660. May 16.—Authorizing G.T.P. Branch Lines Co. to build bridge over Red Deer River on its Calgary branch, Alta.

13661. May 16.—Authorizing G.T.P.R. to carry traffic between Edmonton and Prairie Creek, Alta., at a speed limit of 15 miles, west of Edson.

13662. May 16.—Authorizing Central Ontario Ry. to build station at Hillier.

13663. May 16.—Authorizing G.T.P. Branch Lines Co. to cross C.P.R. Bulyea branch with its Melville-Regina branch in n.w. ¼ sec. 32, tp. 17, r. 19, w. 2 m., Sask., and ordering interlocker to be installed.

13664. Apr. 26.—Dismissing Bell Telephone Co.'s application for order to amend joint tariff for service with Michigan State Telephone Co. by raising rate for long distance messages from Sarnia, Ont., to Detroit, Mich., and from Windsor, Ont., to Port Huron, Mich., from 40c. to 50c. per three-minute conversation.

13665. May 4.—Authorizing A. Frazer, Lucknow, Ont., to use as cattle pass, opening under G.T.R. at m. p. 53.87 on lot 1, con. 4, Huron tp.

13666. May 5.—Extending to Aug. 1, time for carrying G.T.P. Ry. over Norton St., Edmonton, Alta.

13667. May 18.—Authorizing G.T.P. Branch Lines Co. to cross C.N.R. spur with its Melville-Regina branch, in s.w. ¼ sec. 26, tp. 17, r. 20, w. 2 m., Sask., and ordering interlocker to be installed.

13668. May 18.—Authorizing C.N.O.R. to build bridge over Rideau River, Gloucester and Nepean tps.

13669. May 16.—Authorizing C.P.R. to join Georgian Bay & Seaboard Ry. with Lindsay, Bobcaygeon and Pontypool Ry. near junction at mileage 72.91.

13670. May 18.—Authorizing Ontario Pipe Line Co. to maintain gas pipe under G.T.R. at Sherman Ave., Hamilton, Ont.

13671 to 13673, May 17, 19.—Authorizing Seymour Power & Electric Co. to erect wires across G.N.W. Telegraph Co.'s wires and G.T.R. at three points in Ontario.

13674, 13675. May 18.—Authorizing city of Winnipeg to erect wires across C.P.R. at two points on McPhillips St.

13676. May 18.—Authorizing town of Edmundston, N.B., to maintain pipe under C.P.R. at Victoria St.

13677. May 18.—Authorizing Canadian Coal Consolidated, Ltd., to maintain water pipe under C.P.R. Crow's Nest branch, Alta.

13678 to 13680, May 18, 19.—Authorizing C.N.R. to divert three public roads on its Hallboro branch, with consent of Blanshard, Miniota, and Saskatchewan municipalities, Man.

13681, 13682. May 19.—Authorizing C.P.R. to build bridges at mileage 106 and 112.2, Sherbrooke subdivision, Que.

13683. May 19.—Authorizing H. B. Johnston & Co. to maintain water pipe under C.N.O.R. and C.P.R. at Toronto.

13684. May 19.—Authorizing G.T.R. to build siding for Oneida Lime Co., near Nelles Corners station, Ont.

13685. May 19.—Authorizing G.T.R. to build siding into Laprairie Brick Co.'s premises, Laprairie, Que.

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A Winnipeg press report, April 18, stated that the Great Northern Ry. was arranging to run a through express train from St. Paul, Minn., to Edmonton, Alta., using the Canadian Northern Ry. from Brandon, Man., the terminus of its own line in Canada. We are officially advised by a C.N.R. official that the report is unfounded.

A Railway to Hudson Bay.

The Minister of Railways has asked the House of Commons to vote $2,000,000 on account of the construction of this projected railway from Pas Mission, Sask., to either Port Nelson or Fort Churchill, on Hudson Bay.

A party of engineers under F. P. Moffatt recently completed 10 months work in the field between The Pas and Split Lake, in preparation for construction. In connection with construction work it is reported that supplies will be shipped from Halifax, N.S., to York Factory, and taken inland by canoe and trail route, instead of as at present overland to The Pas via Winnipeg, and thence by canoe and trail route. The present route is said to result in considerable delays in getting provisions and other supplies through.

An announcement was made in Ottawa, May 22, that tenders will be invited next month for the construction of the first 120 miles of the proposed line from The Pas in the direction of Hudson Bay. This will cover the mileage in regard to which there is no question whether the ultimate terminal on the Bay is Fort Churchill or Port Nelson. It is expected that construction will be well in hand in the beginning of 1912, and that the section will be completed by the end of 1914. A full description of the projected route, with an estimate of the cost, was given in our Feb. issue, pg. 97.

Orders for Steel Rails.

The Canadian Pacific Ry. has this year so far ordered 107,200 tons of steel rails. By far the larger portion has been ordered from the Algoma Steel Co., and nearly all the balance from the Dominion Iron and Steel Co.

Particulars of orders placed by Mackenzie, Mann & Co., for 90,000 tons of steel rails, for the Canadian Northern Ry. and allied lines, were given in our April issue. The orders have since been increased to 115,000 tons, 10,000 tons 80 lbs., and 10,000 tons 60 lbs., having been ordered from the Algoma Steel Co., and 5,000 tons 80 lbs., from the Dominion Iron and Steel Co.

As stated in our last issue, the Grand Trunk Pacific Ry., has ordered 18,000 tons 60 lbs. rails from the Algoma Steel Co., for use on branch lines. We have since been advised that 12,500 tons of these were to be rolled during May, and the balance will be rolled a little later in the year.

The s.s. Hans B., has been chartered to sail from Sydney, N.S., early in June, for Prince Rupert, B.C., with 6,100 tons 80 lbs. rails on the Grand Trunk Pacific Ry.'s 1909 contract with the Dominion Iron and Steel Co.

The National Transcontinental Railway Commissioners have ordered 34,927 gross tons from the Algoma Steel Co., and 26,273 tons from the Dominion Iron and Steel Co., all 80 lbs.

The Grand Trunk Ry. has ordered 37,500 tons of 100 lbs. rails, divided between the Algoma Steel Co. and the Dominion Iron and Steel Co.

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The Canadian Railway Club held its annual meeting and smoking concert, at Montreal, May 3. Following are the officers for the current year:— President, A. A. Goodchild, Auditor of Stores and Mechanical Accounts, C.P.R.; First Vice President, J. Coleman, Superintendent of Car Department, G.T.R.; Second Vice President, R. W. Burnett, General Master Car Builder, C.P.R.; executive committee, C. Murphy, Superintendent of Transportation, C.P.R.; W. McNab, Principal Assistant Engineer, G.T.R.; C. Kyle, General Master Mechanic, C.P.R.; P. Webb, F. Ditchfield, Canada Car Co., and R. M. Hannaford, Chief Engineer, Montreal St. Ry.

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C.P.R. Betterments, Construction, Etc.

Dominion Atlantic Ry.—D. McNicoll, Vice President C.P.R., is reported as having stated May 4, that the question of taking over the D.A. Ry. by the C.P.R. was under consideration. Legislation necessary to enable this to be done has been passed by the Dominion Parliament. Considerable work in the way of betterment is being done, as described in our last issue, and local reports state that when the line is taken over by the C.P.R., still more extensive betterments will be made. (May, pg. 409.)

Branch Line at Farnham.—The C.P.R., exercising the franchises of the Atlantic and North West Ry., is applying to the Board of Railway Commissioners for authority to build a branch line from chainage 437+20 on the main line of the Farnham section, St. Brigide parish, Que., to the military camp grounds on lot 341, West Farnham parish.

The Orford Mountain Ry. was practically completed from Mansonville, Que., to the International boundary, 3.5 miles, during 1910, and the line is now being extended from the boundary to North Troy, Vt., 5,000 ft. The work is being done by the company's own forces, and it is expected that it will be completed by June 4.

Windsor St. Station, Montreal.—Rapid progress is being made with the steel work for the addition to the Windsor St. station, and it is expected that this part of the work will be completed early this month. The stone work has been completed to the second story, and a start has been made with the brick work, and with the concrete floors.

Place Viger, Montreal.—While the Notre Dame St. viaduct has not been fully completed, vehicles and pedestrians are allowed to cross it from Berri St. to Montcalm St. Good progress is being made with the building of the bridge from the station building to Notre Dame St. Practically all the brick work on the station has been completed, the interior partitions put in, and the concrete floors laid. It is expected that the station will be ready for occupation about the end of the month.

Mile End, Montreal.—The new station at Mile End., has been completed, and the staff took possession May 12. It is a one story building with interior fittings of white ash. In the main building are the ticket offices, waiting rooms, baggage rooms, etc., while at either end are 75 ft. shelters. The main waiting room is 45 by 35 ft., and the ladies' waiting room 24 by 15 ft. Besides these there are smoking rooms, toilet rooms, and two large reservations for the baggage and express departments.

Montreal-Toronto Second Track.—A second track is being built from Smiths Falls to the point where the projected new lake shore line to Toronto will leave the present line at Glen Tay, 16 miles. The contract for this work was let some time ago to Jones and Girouard, Ottawa.

Campbellford, Lake Ontario and Western Ry.—Engineering parties are in the field making location surveys for the new line from near Glen Tay station to Leaside Jct. In a recent interview, D. McNicoll, the Vice President, said the location would extend from Glen Tay southerly to Belleville, and thence along the lake shore connecting with the present line into Toronto, at Leaside Jct. The new line will be a single track one, with gradients of 0.4%, and is expected to be within a mile or two as short as the present line between the same points. The surveys are being gone on with from both ends, and it is expected that construction will be started next year.

Georgian Bay and Seaboard Ry.—The Board of Railway Commissioners has authorized the diversion of the public road in Ops tp., two miles south of Lindsay, at mileage 19.25, and the building of a bridge to carry the line across the G.T.R. Haliburton branch.

We are advised that a contract has been let to the John S. Metcalf Co., Ltd., Montreal, for building a wharf at Victoria Harbor, Ont., in addition to contracts for wharves previously awarded. The new order is for about a third of a mile of wooden crib structure, below water, with reinforced concrete superstructure. This will bring the total length of wharves which have been built for the C.P.R. at Victoria Harbor, by the John S. Metcalf Co., up to a mile and a quarter.

Rapid progress is being made with the construction of this line, which will join the Montreal-Toronto line at Bethany Siding. Track laying will be started, it is expected some time in July, and it is hoped to have the line completed before the end of the year. The line starts at Victoria Harbor, on Georgian Bay, and runs through Coldwater, and Lindsay to Bethany Siding.

Track was laid into Orillia, from Coldwater Jct., May 14, and is being proceeded with in the direction of Lindsay.

South Ontario Pacific Ry.—The Board of Railway Commissioners has approved location plans of a portion of this line between Guelph Jct. and Hamilton, Ont.

A small quantity of grading has been done at Guelph Jct., and in the way of getting in material, yard tracks, etc. The general contractors, the Toronto Construction Co., we were advised May 15, expected to start in work on an extensive scale at an early date.

London Station, Etc.—Five sets of plans showing routes of the proposed new line in the vicinity of Pottersburg, Ont., have been sent by the engineers for the consideration of the management officials at Montreal.

London Engine House.—We are advised that the general contract for the 22-stall roundhouse with machine shop and boiler house, mentioned in our last issue, has been let to John Hayman and Sons, of London, Ont. The contract for the structural steel work has also been let.

Eastern Lines Betterments.—We are officially advised that the principal new works which will be started this year, or upon which work had been started last year, which will be carried out during this year include the following:—

BRIDGES.—The bridge over the St. Lawrence River at Lachine to be double-tracked; a new steel bridge across the Ottawa River at Mattawa to replace the present structure; the replacing of numerous wooden bridges on various lines by steel bridges, large sections of the structures to be filled by solid embankments.

STATIONS, ETC.—Large freight-shed and yard at St. John, N.B.; large freight and storage sheds at Montreal, and enlargement of yards; new passenger station at Place Viger, Montreal, enlargement of passenger station and head offices at Windsor St. station, Montreal; large concrete engine house and machine shop at Ottawa; new passenger stations at North Toronto, West Toronto, and enlargement of West Toronto yards; two subways at North Toronto; three subways at West Toronto; new freight sheds at West Toronto, north Toronto, and Cherry St., Toronto; large new engine house, machine shop and coaling plant at London, also enlargement of yard.

NEW LINES, ETC.—Completion of Georgian Bay and Seaboard Ry., from Coldwater Jct., to Bethany, Ont.; new line from Hamilton to Guelph Jct., Ont.; second track work between Smiths Falls and Glen Tay, Ont.; second track work, Mile End to St. Martins Jct., Que.; second track work South Jct., Montreal, to Adirondack Jct., Que.; large new freight shed and flour shed; new station and the completion of new wharves at Victoria Harbor, Ont., the lake terminal of the Georgian Bay and Seaboard Ry.

North Bay Shop Extensions.—Plans and estimates are reported to have been prepared for extensive additions to the shops at North Bay, Ont., but it is said no decision has been reached as to when anything will be done.

Lake Superior Division.—The Board of Railway Commissioners has authorized the company to use six bridges on the North Bay sub-division; to build three bridges on the Nipigon sub-division, and to build a bridge over the west arm of Blind River at mileage 104.49 on the Sault Ste. Marie branch.

Fort William Improvements.—The new station at Fort William, Ont., has been fully opened.

Press reports state that plans for extensive improvements are being prepared, the new works to include, a coal dock, wharf and plant, capable of storing 1,000,000 tons of coal, and a new cleaning elevator.

A start has been made in the building of a second track between Port Arthur and Fort William, and it is expected to have the work completed by Sept.

The bridge over the Kaministikwia River, which was described in our August, 1910 issue, has been completed. The double track railway and highway bridge over the McKellar River, for the Fort William Terminal and Bridge Co., has also been completed.

Western Lines Fencing.—Contracts are reported to have been let for 730 miles of wire fencing in Saskatchewan, and for 270 miles in Alberta.

Winnipeg Shops, Etc.—Contracts are reported to have been let to Carter-Halls-Aldinger Co., Ltd., for the building of an upholstering shop, 100 by 40 ft., of brick on a stone foundation; to Jackson, Goldie & Co., for the construction of a turntable at the shops; and to R. J. Barber for the erection of two new freight sheds on Higgins Ave., one 260 by 40 ft., and the other 260 by 60 ft.

Press reports state that the company is purchasing considerable areas of property on the north side of Henry St., west of Main St., for the purpose of adding to the yard space.

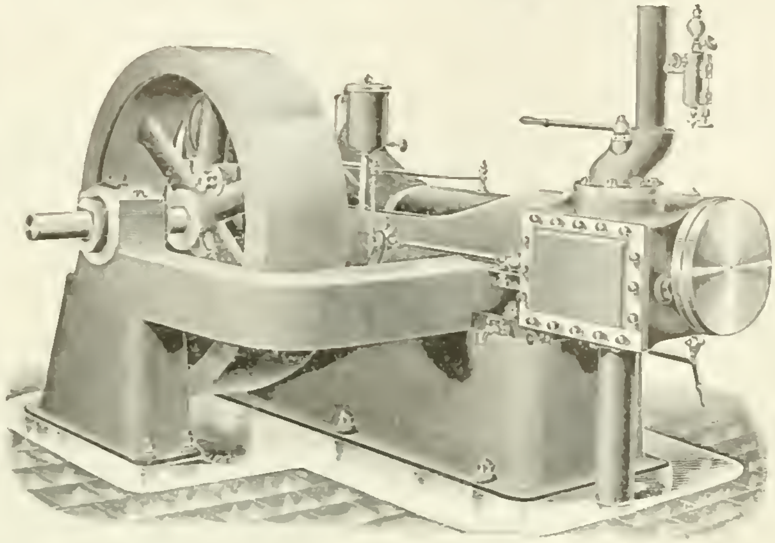
Winnipeg Beach Station.—Press reports state that the company has purchased land between McPherson and Elm avenues, and between Stevens St., and the old Gimli road, Winnipeg Beach, Man., upon which to erect a new station

Water Supply at Virden.—Plans are being prepared for the provision of a water supply for the company's use at Virden, Man. It is said the water will be brought from the Assiniboine River, by a pipe line about five miles long.

Union Station at Regina.—In an interview at Regina, Sask., May 9, F. W. Peters, Assistant to the Vice President, said he had not the least idea what the cost of the proposed union station with the Canadian Northern Ry. would be. It would be erected a little south east of the present building, between Hamilton and Broad streets. The main entrance would be directly opposite Rose St., and provision would be made on the ground floor for ticket offices, waiting rooms, etc., while on the second floor, there would be offices for the other departments. The C.N.R. would be provided with accommodation in the station, and would have running rights into it and over the yards. It is expected that construction will be started on the station this year.

Regina Freight Shed.—Foundations have been prepared for a freight shed about 400 by 25 ft, and the building is in course of erection by Smith Bros and Wilson. It is expected to have it completed by July 1.

BEARINGS IN LINE



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Hawarden to Saskatoon, Sask.—Press reports state that preliminary surveys are being made for a line from Hawarden to Saskatoon, Sask. The building of such a line would give Saskatoon direct connection with Moose Jaw and other points, which at present is only possible by way of Lanigan and Regina.

Estevan to Forward, Sask.—Work was started April 24, by J. D. McArthur & Co., on the construction of this 35 miles. It is expected that 25 miles will be ready in time for wheat traffic in the fall.

Weyburn to Lethbridge.—The Lethbridge, Alta., Board of Trade is desirous that construction shall be started in that town easterly towards the line from Weyburn, Sask., heading in the direction of Lethbridge. A letter was received May 8, from W. Whyte, Vice President, stating that full consideration would be given to anything the board had to say in favor of starting construction at the western end.

Southern Alberta Irrigation District.—The Southern Alberta Land Co. has been negotiating with the C.P.R for the construction of certain lines through its irrigated property, and in this connection a press report said that a line from Kipp to Suffield had been decided on. We are officially advised that nothing definite has been decided so far as such a line is concerned.

New Shops for Western Lines.—W. Whyte, Vice President, was in Medicine Hat, Alta., May 3, in connection with the proposal for the location of some new shops for the western lines. A deputation pressed the claims of Medicine Hat, as a deputation from Calgary had done the claims of that city a few days previously. Mr. Whyte stated that the matter would be discussed with the President on May 26, and an announcement made shortly thereafter.

Hotel at Calgary.—The plans for the projected hotel at Calgary, Alta., were received by the city authorities from the C.P.R. architect's department, Montreal, May 9. The design of the building will conform to that of the Royal Alexandra at Winnipeg.

Irrigation and Colonization Building at Calgary.—A contract is reported to have been let to J. McDiarmid and Co., Winnipeg, for the erection of a building in Calgary for the company's irrigation and colonization staffs. The building will be 122 by 45 ft. and will be four stories high, with a basement. The structure will be of reinforced concrete, the outer walls of sandstone veneer, and partitions of hollow tile. It is expected to have the building completed in Oct.

Cardston to Pincher Creek.—The Cardston, Alta., Board of Trade appointed a committee, May 10, to confer with the C.P.R. officials relative to the building of the projected line to Pincher Creek, through Cardston. This projected branch is an extension of the Alberta Ry. and Irrigation Co.'s lines.

Kaslo to Three Forks, B.C.—A press report states that it is proposed to build a line from Kaslo to Three Forks, B.C., about four miles, in order to provide for some mines.

C.P.R. Building in Vancouver.—A press report states that the company proposes to replace its present telegraph building on Hastings St., Vancouver, B.C. by an eight story one at a cost of about $200,000. The site has a frontage of 75 ft. and a depth of 120 ft.

Westminster Jct.—Coquitlam, B.C., Plans.—The general plans of the company with respect to terminal yards and shops for the Pacific coast were brought up for discussion April 26, at a conference between C.P.R. officials and the Coquitlam council, and approved by the latter body. The proposed work will cost several million dollars and will require several years to complete. Work will be commenced as soon as the plans have been sanctioned by the Railway Commission. The proposed works comprise storage, sorting and shop yards, repair shops, and other buildings. The yards will contain 95 miles of sidings, and provision will be made for sites for manufacturing plants.

Esquimalt and Nanaimo Ry.—The contractors are pushing work on the extension of this line and expect to get it fully completed into Alberni by June 30.

R. Marpole, General Executive Assistant, returned to Vancouver from Montreal, May 15, after having discussed plans for the extension of the company's lines on Vancouver Island with Sir Thos. G. Shaughnessy. While no official announcement has been made, press dispatches state that the plans for the extension of the line to Comox have been approved, and that construction will be started at an early date.

Surveys are being made by a party under A. Stewart, for the location of a line from Port Alberni to Great Central Lake, via Sprout Lake, and another party is working a survey from Campbell River to Quatsino Sound. (May, pg. 421.)

Railway Finance, Meetings, Etc.

Alberta Ry. and Irrigation Co.—Approximate net profits from all sources, exclusive of land sales, for March, $31,335, against $34,260 for March, 1910. Cumulative net profits for nine months ended Mar. 31, $278,585.

Caraquet Ry.-Gulf Shore Ry.—A meeting of shareholders of the Gulf Shore Ry. was held at Bathurst, N.B., recently to ratify an agreement for the amalgamation of the company with the Caraquet Ry. Co. in accordance with the terms of the company's acts.

Central Ontario Ry.—The annual meeting was held at Toronto, May 17. Following are the officers and directors for the current year:— President, C. E. Ritchie, Akron, O.; Vice President, J. J. Warren, Toronto; General Manager and Secretary, G. E. Collins, Trenton, Ont.; other directors, E. B. Stockdale, and J. Moss, K.C.

Cumberland Ry. and Coal Co.—The Dominion Coal Co.'s report presented at the meeting of shareholders May 19, contains the following paragraph:— "During the year the Dominion Steel Corporation, Ltd., came under agreement to purchase the entire capital stock of the Cumberland Ry. and Coal Co., and an agreement for the lease of its property to this company was entered into under which its collieries are now being operated as collieries of the Dominion Coal Co. The Cumberland Co. owns large and valuable coal areas in Cumberland county and in Cape Breton; it has two collieries at Springhill, a well-equipped standard gauge railway from Springhill Jct. to Parrboro, 32 miles in length, a large area of timber lands, and other property."

Detroit River Tunnel Co.—The following directors were elected for the current year, at the annual meeting at Detroit, Mich., May 4:—W. K. Vanderbilt, F. W. Vanderbilt, H. B. Ledyard, W. C. Brown, W. H. Newman, N. Kingsmill, W. P. Torrance, H. Russell, W. K. Vanderbilt, Jr., L. C. Ledyard and G. F. Baker.

Dominion Atlantic Ry.—Gross earnings for Mar., $67,600, against $85,937 for Mar. 1910. Aggregate gross earnings for nine months ended Mar. 31, $964,200 against $1,049,935 for same period 1909-10.

Grand Trunk Ry.—A Grand Rapids, Mich., dispatch, May 17, says the Circuit Court Judge has given a decision denying the demurrer of the defendants in the State of Michigan against the Detroit, Grand Haven and Milwaukee Ry., one of the companies owned by the G.T.R. in the U.S. The action is brought to recover $2,000,000 alleged to be due for back taxes. It is announced that an appeal against the decision will be taken to the Supreme Court.

Intercolonial Ry.—The House of Commons, May 5, voted a further sum of $353,000 on account of collection of revenue. The Minister of Railways explained that the vote was necessary for the adjustment of accounts, and did not provide for further expenditures. The only effect, he added, was that it would reduce the amount that would appear as surplus revenue of last year.

Lake Erie and Detroit River Ry.—At the annual meeting at Walkerville, Ont., May 2, the retiring directors were re-elected. The meeting was purely a formal one, the company's line being owned by the Pere Marquette Rd.

Manitoulin and North Shore Ry.—A meeting of shareholders was held at Sault Ste. Marie, Ont., May 29, to pass a bylaw reducing the number of directors from 12 to seven.

Montreal and Vermont Jct. Ry.—The annual meeting was held at Stanbridge, Que., May 10. Following are the officers and directors for the current year:— President, C. M. Hays; Vice President, E. H. Fitzhugh; A. H. Gilmour, Secretary Treasurer; W. H. Chaffee, Assistant Secretary Treasurer; G. C. Jones, Managing Director; other director, C. W. Aitkens.

Michigan Central Rd.—The annual meeting was held at Detroit, Mich., May 4, when the following directors were elected for the current year:—W. K. Vanderbilt, F. W. Vanderbilt, H. B. Ledyard, W. C. Brown, J. P. Morgan, C. M. Depew, W. Rockefeller, J. Stillman, W. H. Newman, G. F. Baker, W. K. Vanderbilt, Jr., L. C. Ledyard and M. Hughitt.

Napierville Jct. Ry.—The annual meeting was held, May 8. Following are the officers and directors for the current year:—President, L. F. Loree; Vice Presidents, C. S. Sims and W. H. Williams; Secretary, L. J. Beique; other directors, G. Hartt, F. L. Beique, F. A. Beique and R. Adair.

Quebec and Lake St. John Ry.—Total earnings for April, $45,508.58, against $48,678.17 for April 1910. Aggregate total earnings for four months ended Apr. 30, $163,656.18, against $168,270.71 for same period 1910.

Quebec Central Ry.—Gross earnings for Feb., $71,321.50; expenses $58,231.52; net earnings $13,089.98, against $62,417.33 gross earnings; $53,788.57 expenses; $8,628.76 net earnings for Feb., 1910. Gross earnings for March, $103,240.21; expenses $65,997.49; net earnings $37,242.72, against $92,681.07 gross earnings; $58,601.99 expenses; $34,079.07 net earnings for March, 1910. Aggregate gross earnings for nine months ended Mar. 31, $859,170.03; expenses $594,046.83; net earnings $265,123.20, against $796,922.75 aggregate gross earnings; $555,697.25 expenses; $241,225.50 net earnings, for same period 1909-10.

South Shore Ry.—The Imperial Privy Council gave a decision, May 4, in the case of the appeal of the Attorney General against the Standard Trust Co., of New York, and the S.S. Ry., arising out of the decision of the Judge of the Exchequer Court as to the division of the money paid by the Delaware and Hudson Co., for the purchase of the S.S. Ry. The Government contended that a portion of the $600,000 paid to the Standard Trust Co. should have been distributed among the other creditors of the old company. The Privy Council by its decision upholds the decision of the Exchequer Court.

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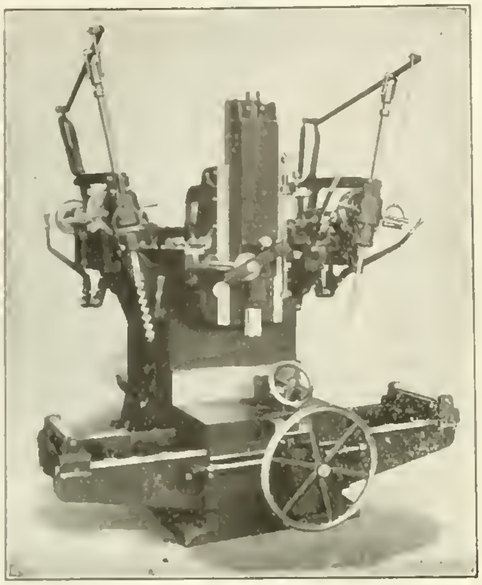

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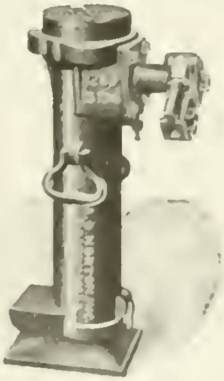

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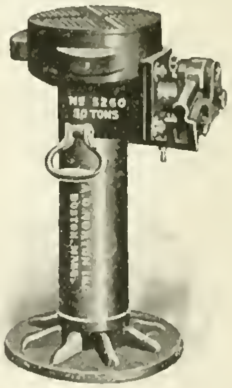

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National Transcontinental Railway.

Tenders will be received to June 14, for the erection of station and other buildings on the following sections:—From Plaster Rock, N.B., westward to the N.B.-Quebec boundary; from mileage 161.5 to 194 east of Quebec bridge; from mileage five to 105 east of Quebec bridge; from Quebec Bridge westward to mileage 45; from mileage 55 to 194 west of Quebec bridge; at Cochrane, Ont.; from the divisional yard at Graham, Ont., eastward for 60 miles.

The Chairman of the N. T. Commission, in an address to the Quebec Board of Trade, May 5, gave an explanation of the plans for the erection of the union station at the old Champlain market, and for the workshops which it is proposed to build on the Ste. Foye heights, near the Quebec bridge. He said the station will be a monumental structure, 250 ft. long, and three stories high, being 77 ft. from the ground to the highest point of the roof. A wharf 2,000 ft. long will be constructed alongside the station. This will later be prolonged to 6,000 ft. west. The extreme depth of these wharves will be 55 ft. at low tide, and will leave room for the location of the agency of the marine department and shipping. The workshops are to be erected at the western approach to the bridge which has been found the most practical location for them. It is at the limits of Ste. Foye, and permits the erection of big shops, which would be impossible anywhere else. The proposed shops will be second only to Winnipeg. Their site will cover 155 acres. The buildings proposed to be erected include the following:—Coach paint shop, 120 by 200 ft.; upholstering shop, 40 by 120 ft.; transfer table, 85 by 55 ft.; coach shop 120 by 200 ft.; cabinet shop 40 by 120 ft.; planing mill, 80 by 250 ft.; dry kiln, 35 by 70 ft.; lumber shed, 60 by 150 ft.; freight car shop, 80 by 400 ft.; power house, 100 by 125 ft.; store house, 70 by 150 ft.; oil house, 35 by 55 ft.; office, 60 by 60 ft.; boiler and tank shop, 150 by 150 ft.; erecting shop, 150 by 388 ft.; forge shop, 100 by 150 ft.; foundry shop, 100 by 150 ft.; pattern shop, 50 by 70 ft.; roundhouse, 20 stalls; water tanks, 50,000 galls., and 100,000 galls. capacity; boiler plate and tube rack, 25 by 150 ft.; coaling trestle, 950 ft. long; sand house, 46 by 19 ft.; ashpits and cinderhoists; iron rack, 20 by 100 ft.; ice house, 59 by 29 ft.; local station, 116 by 30 ft.; store house, 74 by 20 ft.; midway crane, 1,420 ft runway; wheel foundry and machine shop, 125 by 100 ft.; wheel storage, 105, by 100 ft. As soon as details in connection with the plans are worked out, tenders will be asked for the erection of the buildings. The route which will be followed by the line would be from Sillery Cove, into the Champlain market, and shunting grounds will be provided at Wolfe's Cove.

Reports from Cochrane, Ont., state that E. F. and G. E. Fauquier have completed their 70 miles of grading west of that point, and are engaged in ballasting the track. Further west, O'Brien, McDougall and O'Gorman, have large gangs of men at work, clearing the right of way and grading. East of Cochrane, about 40 miles of track have been laid, and the ballasting completed and the contractors, Foley, Welch and Stewart, are pushing their grading gangs further east.

We are advised that there is no foundation for the report that a contract has been let, or is about to be let to Haney, Quinlan and Robertson, for the erection of a coach and car shop at Transcona, near Winnipeg. At present, the commissioners are unable to say what further will be done in the way of building at the shops at Transcona.

GRAND TRUNK PACIFIC RAILWAY.

Replying to questions in the House of Commons April 24, the Minister of Railways said the estimated cost to Canada of the western division of the National Transcontinental Ry. is the interest for seven years on the bonds required to finance 75% of the cost of construction of the mountain section, and this interest is estimated at $13,293,000. In addition the direct cost to the Government for inspection, auditing, etc., in connection with the western division is estimated at $135,000. The details upon which these estimates are based are as follows:—

Estimated cost to complete, Mar. 31, 1914:—

Cost of construction	$58,520,000
Terminals, Prince Rupert	3,000,000
Interest during construction	6,000,000
Total estimated cost	$67,520,000
Amount to be financed by 3% government guaranteed bonds, 75% of $67,520,000	50,640,000
Par value of government guaranteed 3% required to finance cost of construction, estimated to be sold at net price of 80%	63,300,000
Interest on $63,300,000 at 3% for 7 years	13,293,000
Estimated direct expenditure by government for engineering, auditing, etc., in connection with western division	135,000

The above estimate is made on the assumption that the liability of the government as guarantor of the bonds, will be in accordance with the judgment rendered by the Supreme Court of Canada, as to the meaning of par. 5 of the agreement of Feb. 18, 1904, schedule to chap. 24 of the Acts of that year.

Following is the estimated cost of construction of the mountain section:—

Description of Service.	Amount.
Preliminary and legal expenses, engineering	$ 3,200,000
Right of way and real estate	250,000
Grading and tunnels	33,000,000
Bridges, trestles and culverts	10,000,000
Ties	1,500,000
Rails, fastenings, frogs and switches	5,700,000
Tracklaying, surfacing and ballasting	2,390,000
Buildings and water stations	1,500,000
Fencing, crossings and cattle guards	20,000
Snow sheds	500,000
Docks	200,000
Telegraph line	260,000
	$58,520,000
Terminals at Prince Rupert	3,000,000

The Minister added that the foregoing details of estimates are subject to revision. The fluctuating labor conditions prevailing, and the tendency to an increasing cost for labor, on the line of construction, renders this statement necessary.

A contract has been let to J. D. McArthur, Winnipeg, for the completion of the line from Regina, Sask., in a generally southerly direction to the International boundary. This contract will carry the line from the end of the section at present under contract, on which there is about 40 miles of grading to be be completed.

The contract for building the first 50 miles of the projected branch from Biggar, Sask., to Calgary, has been let to Foley Bros., Welch and Stewart.

The contract for the new branch from the Alberta coal branch has been let to Foley, Welch and Stewart. This will be known as the Mountain Park coal branch.

We were officially advised May 1, that the location of the G. T. Pacific Ry. terminals in Calgary, Alta., had not been decided, and that all reports stating that particular properties had been acquired for that purpose were incorrect.

While land has been acquired at Edmonton Alta., for the purpose of building an hotel thereon, we are advised that nothing has been definitely decided as to the size and character of the proposed building.

E. J. Chamberlin, Vice President and General Manager, is reported to have stated in an interview at Winnipeg, May 4, that it is doubtful whether a contract will be let this year for the building of the G.T.P.R. hotel at Winnipeg. The plans had not then been finally completed, and were not likely to be ready before June 1. It was impossible to say anything definite as to the accommodation, equipment, or cost of the building until all the plans had been approved.

Speaking of the proposed line into Brandon, Man., Mr. Chamberlin is reported to have said recently that the surveys would be begun almost immediately, but it was impossible to say when construction would be gone on with. This line would extend northerly from the G.T.P.R. to Neepawa.

Referring to the work on the lines which will centre in Regina, Sask., Mr. Chamberlin is reported as saying that everything was being done that could be done to have the line completed into Regina by July 31. The grading was well ahead, and the company was rushing the track laying and ballasting, with the object of having the branch in operation by the opening of the Exposition. The tracklaying gang reached Fort Qu'Appelle May 12. The question of the building of an hotel had been considered, but nothing was likely to be done this year. The Board of Railway Commissioners has approved of location of the Melville-Regina branch from the city limits at mileage 92.62 to the west side of Albert St., at mileage 97.57, Regina, Sask.

R. Hyland, of the contracting firm of Rigby, Hyland and Plummer, in a recent interview said the grading of the branch from Regina into Moose Jaw, would be completed by Aug. 1. Grading is being proceeded with west of Cottonwood Creek, four gangs being at work. A 1,500 ft. trestle bridge is nearly completed over the creek, and another bridge is being built across Wascana Creek. The course of the line is almost straight from Regina to close to Moose Jaw, where it deviates to the south, so as to secure the easiest possible entrance into the city. An agreement has been reached between the company and the city council as to the route by which the line will cross Moose Jaw. The agreement provides that the line is to be completed and in operation through the city by Jan. 1, 1912. A resolution was passed May 9, approving of some slight deviation from the original plans.

Plans were deposited with the Minister of Railways May 12, showing the route of the entry of the company's line into Calgary. The plan does not show that any provision has been made for terminal facilities in the city. E. J. Chamberlin, Vice President, stated at Winnipeg, May 5, that the company had never for a moment considered the idea of erecting an hotel in Calgary.

The plans for the proposed hotel at Edmonton, Alta., said Mr. Chamberlin, at Winnipeg, May 5, are expected to be ready about July 1, when tenders for the building would be asked.

Construction work is being gone on with rapidly on the Alberta coal branch, which runs southerly from the main line at Edson, Alta., and it is expected that it will be ready to transport coal from the mine by Nov. 30. With Edson as a centre, a survey party under W. Silcox is making a survey for the location of a line to Grande Prairie, and on towards the Peace River country.

Construction on the main line west of Edson, is being pushed, and it is expected to have the track laid to Tete Jaune Cache by the end of the season. On the section being built easterly from Prince Rupert, a certain amount of rock work was done during the winter, and it was reported May 8, that over 2,000 men had gone in to take up work this season. (May, pg. 425.)

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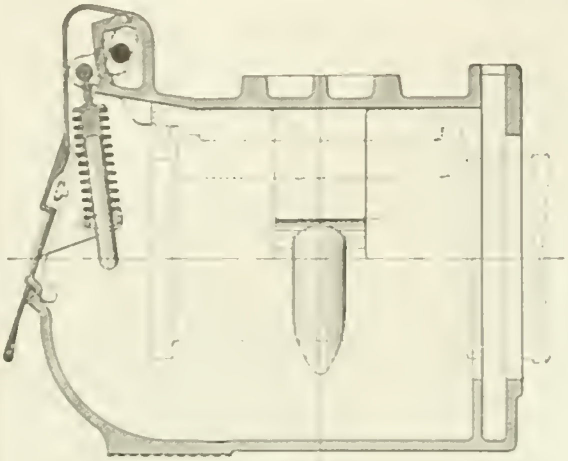

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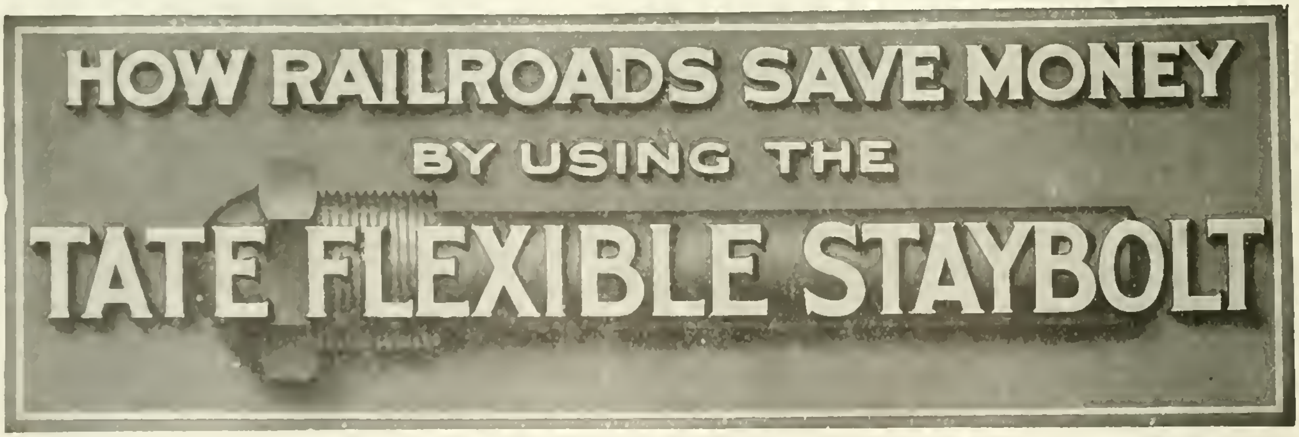

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Richmond, Que.—A fire which started in one of the offices at the Richmond, Que., station, May 11, did over $5,000 worth of damage. The station was practically destroyed.

Montreal Track Elevation. — At a special meeting of the committee of aldermen and controllers having under consideration the plans for the elevation of the tracks from Bonaventure station to St. Henri, May 11, it was unanimously decided that if it were possible, from an engineering standpoint, the tracks should be depressed and not elevated, but that if this were not possible, the embankments should be of stone and concrete, and not of earth as proposed.

The company's plans for the work were submitted to the city council April 28, and have since been under consideration. In connection with the track elevation the work of building a new terminal station at Bonaventure is to be undertaken. This station building will have to be constructed so that entrance will be made to the platforms from the second floor, which will be level with the tracks. The new building will be 285 by 170 ft., with a long elevated platform extending all the way to Mountain St., at which point the first subway or viaduct will be built, the viaduct continuing over every thoroughfare to beyond the city limits. Thirteen passenger tracks will run into the new station and four freight lines into the new sheds. The plans show subways having spans of different widths, from 40 to 66 ft., and one estimate states that 1,300,620 cubic yards of embankments will be necessary. The estimated cost of the entire work was tabulated for the city committee as follows:—

Rights of way	$2,390,829
Excavations of foundations	96,833
Embankments	520,248
Concrete for abatments, piers and flooring	366,865
Concrete for retaining walls	66,713
Steel works	539,172
Paving	132,748
Tracks	247,633
Ballast	107,795
Station buildings	3,210,751
Miscellaneous	475,386
Total	$8,154,973

A sum is added for superintendence and contingencies at 10%, $815,497; with interest for a year and a half at 5%, amounting to $448,529 making a grand total of $9,419,000. Under an act of the Quebec Legislature, the city is authorized to contribute up to $2,000,000 towards the cost of carrying out the work.

The G.T.R.'s application to the Board of Railway Commissioners for an order for grade separation, or the elevation of its tracks in order to provide for improvements in connection with Bonaventure station and terminals, came before the Board at the sittings, which opened in Montreal May 18.

Ottawa Improvements.—The Board of Railway Commissioners has approved plans for change of alignment in the vicinity of Rideau Canal, and across Main St., Elgin St., and Echo Drive, Ottawa.

In connection with the C.P.R. proposal to build a tunnel along a portion of the Rideau Canal in order to secure a new entrance to the centre of the city, the G.T.R. is said to have prepared a plan for submission to the city council. The proposition is said to aim at bringing all the railways in over intersecting roads as far as the Deep Cut, to allow the Canadian Northern Ry. to run from there to the central station, and to have the C.P.R. tracks parallel those of its own line through Ottawa East, near the present union station.

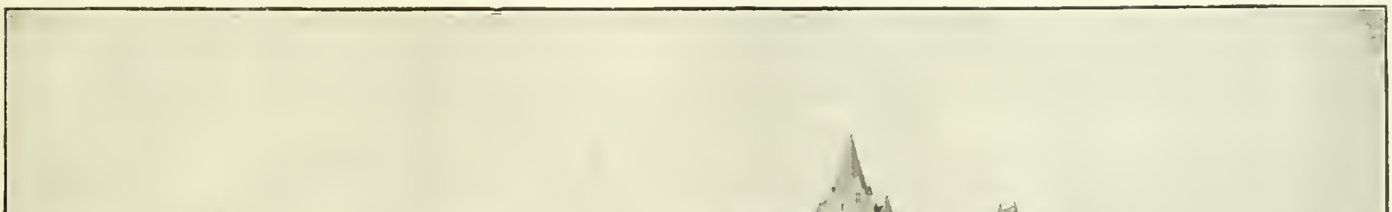
The new station is expected to be ready for opening in Sept., about the same time as the new hotel. Other improvements planned include additions to the workshops, but it is not expected that these will be undertaken until the matter of the entrance of the various lines into the city is settled. However, new steel coal chutes will be erected, having a storage capacity of 350 tons, at a cost of about $15,000, to replace the existing trestles.

G.T.R. Cobourg Freight House, etc.—The Board of Railway Commissioners has approved plans for the rearrangement of tracks in the yard, and for the erection of a freight house at Cobourg, Ont.

G.T.R. Brock Ave. Subway, Toronto.—The Board of Railway Commissioners has approved plans for a subway under the tracks at Brock Ave., Toronto.

Niagara Falls-Paris, Ont.—The replacing of the present 80 lb. rails with 100 lb. ones, between Niagara Falls and Paris, Ont., is being proceeded with rapidly. (May., pg. 431.)

New Station at Stratford.—The site chosen for the new station at Stratford, Ont., is on Shakespeare St., not far from Nile St. It is proposed to erect a two story building in which accommodation will be provided for the travelling public on the ground floor, and on the second floor, provision will be made for offices for the various operating departments. The company's plans also involve considerable re-arrangement of the yard.



G.T.R. STATION AND HOTEL AT OTTAWA.

The illustration made from a drawing, shows in the lower right hand corner a portion of the G.T.R.'s new central station at Ottawa, which will also be used by the C.P.R., for some of its Ottawa trains, and also by the Ottawa and New York Ry. The G.T.R.'s new hotel Chateau Laurier is shown across the street from the station. The new plaza across the Rideau canal, which is being created by the joining of the two bridges, will make a splendid thoroughfare. At the left of the illustration are the Parliament Buildings, and the eastern and western departmental blocks at the top, and lower down, facing the plaza, is the Post Office Building.

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Railway Commissioners' Traffic Orders.

Summaries of other traffic orders are given on another page under "Orders by Railway Commissioners":—

Export Rates on Lumber.

13436. April 15.—Re order 12301, Sept. 20, 1910, made upon the application of the Canadian Lumbermen's Association and the Montreal Board of Trade Transportation Bureau, directing the Canadian Pacific, the Grand Trunk, and the Canadian Northern Quebec Ry. Companies to publish and file tariffs effective not later than Jan. 1, 1911, reducing the export rates to Montreal on lumber from points in the Province of Quebec north and east of Montreal, so that the same difference shall exist between the present domestic rates on lumber to Montreal and the said rates for export, as existed between the old domestic rates and the old rates for export. A question having arisen as to the scope of the order, upon the report and recommendation of the Chief Traffic Officer of the Board, it is ordered that the Canadian Pacific, the Grand Trunk and the Canadian Northern Quebec Ry. Companies publish and file tariffs, to be made effective not later than May 1, 1911, reducing the export rates on lumber, in carloads, to Montreal, for export, from points in the Province of Quebec, east of the city of Montreal, and east of and including the C.P.R. Laurentian subdivision, between and including St. Lin Jct. and Nominingue, and east of and including the Canadian Northern Quebec Ry.'s Montfort branch between and including St. Jerome Jct. and Huberdeau, so that the same differences shall exist between the present domestic rates on lumber to Montreal and the said rates on lumber to Montreal for export, as existed between the old domestic rates and the old rates for export. Order 12301 is rescinded.

Acceptance of Freight at Sheds in Montreal.

13474. April 13.—Re application of Transportation Bureau of Montreal Board of Trade for an order requiring the G.T.R., the C.P.R. and the C.N.Q.R., to rescind their regulation that freight will not be accepted from their cartage agents or from the public, at their freight sheds in Montreal, after 5 p.m, and requiring them also to furnish a proper cartage service for handling freight traffic to their freight sheds. It is ordered that not later than May 1, 1911, the respondents receive into their warehouses all freight tendered to them for shipment from vehicles which have reached the said warehouses, or the approaches thereto, and are ready for unloading by 5 p.m. from Nov. 15 to March 14, both inclusive, and 6 p.m., from March 15 to Nov. 14, both inclusive, and so much later as may be reasonable in case of any vehicle delayed by breakdown or other unavoidable accident, or by open drawbridges, on its way to the said warehouses. Provided that this order shall not be construed by the respondents to prevent them from accepting shipments of freight, without discrimination, later than the said hours.

Interswitching at Port Arthur.

13485. April 19.—Re application of Atikokan Iron Co., Ltd., of Port Arthur, Ontario, complaining that the C.P.R. did not absorb the C.N.R. interswitching charges on pig iron shipments from Port Arthur to eastern points: It is declared that the General Interswitching Order 4988 applied to said shipments by the applicant on pig iron from Port Arthur east; that the proportion of the C.N.R. interswitching charges payable by the applicant was one-half cent per 100 lbs. subject to a minimum charge of $3 and a maximum charge of $4 per car; and that the collection of interswitching charges by the C.P.R. on the said shipments in excess of this amount was therefore illegal.

Allowances From Track Scale Weights.

13520. April 27.—Re application of Canadian Stoves Manufacturing Association, the Jenckes Machine Co., of Sherbrooke, and others, for an order postponing the effective date of the tariffs of track-scale allowances filed by certain railway companies, it is ordered that the effective dates of the following schedules, namely, C.R.C. no. E.2312 and W.1684, C.R.C. no. E.2067, C.R.C. 390, C.R.C. 245 and supplement 1 to C.R.C. 149, filed by the G.T.R., C. P. R., Bay of Quinte, Canadian Northern Ontario and Temiscouata Railway Companies, be postponed until July 1, 1911, except that the provision in the said schedules that "An allowance of 500 lbs. weight per car will be made for standards, strips, stakes, supports and temporary racks, on flat or gondola cars, if loaded with carload shipments requiring their use," as required by order 13226, dated March 29, 1911, which is hereby declared to be an addition to the railway companies' present tariffs, becomes effective not later than May 1, 1911, as provided in the said order.

Rates From Eastern Canada to Regina.

13529. May 1.—Re application of the corporation of the city of Regina, Sask., under secs. 314 and 339 of the Railway Act, for an order directing a reduction in the rates on classes 1 to 10 on goods shipped from Eastern Canada to Regina, and re the application of the Canadian Northern Ry. and the C.P.R., under sec. 56 of the Railway Act, for leave to appeal to the Supreme Court of Canada from order 12520, dated Dec. 10, 1910. Upon the hearing of the application in the presence of counsel for the two railway companies, and for the respondents, and upon reading the notice of motion and the affidavit of E. W. Beatty, and what was alleged at the hearing, the appellants undertaking to get this case set down for hearing at the next sittings of the Supreme Court, unless, in the view of the Supreme Court, itself, or a judge thereof, the case should not be set down. It is ordered that the said railway companies be granted leave to appeal to the Supreme Court of Canada from the said order upon the questions hereinafter stated, which, in the opinion of the Board, are questions of law, subject to and upon the terms and conditions following: 1. That the applicant undertake to set the appeal down for and expedite the hearing thereof at the next sittings of the Supreme Court. 2. That if the appeal be not argued at the said sittings of the Supreme Court, for any reason for which the applicant may be to blame, then the appeal shall not operate as a stay of the order dated Dec. 10, 1910, unless this Board shall otherwise order. 3. That the questions for argument upon the said appeal arise out of the following facts: (The facts are then set out at length). That the order issued herein dated Mar. 15, 1911, be rescinded.

Rates on Trunks and Valises.

13596. Feb. 21.—Re the application of Lamontagne, Limited, of Montreal, for an order directing that such a change in rule 2 of Canadian Classification 15 be made as will enable the applicants to ship mixed carloads of trunks, valises and saddlery between points west of and including Port Arthur, Ont., and from points east of Port Arthur, to Port Arthur and points west thereof, and vice versa. It is ordered that Canadian Classification 15 be amended by the addition to the saddlery list, page 66, of trunks and valises, as shown at page 72 as items 2, 3, and 5; excluding the note re trunks containing wearing apparel and personal effects; the said amendment to be incorporated in the first supplement to the said classification.

The Regina Rate Case.

In the Supreme Court at Ottawa, May 15, in the appeal from the Board's order in this case, Mr. Larmonth applied to have the appeal set down for hearing at the present session. Mr. Orde, K.C., appeared on behalf of the Regina Board of Trade, and mentioned the possibility of constitutional points being raised on the appeal. The court ordered the appeal to be set down for hearing at the opening of the autumn session, and that notices should be given and served upon the Atorney General of Canada and the Attorney General for Manitoba.

"Parisian Politeness" on the C. P. R.

George Bury, General Manager, Western Lines, has issued the following circular to passenger conductors, agents, etc.:—

> "Politeness costs nothing, and gains everything."—Lady M. Wortley Montagu.
>
> "A man has no more right to say an uncivil thing than to act one; no more right to say a rude thing to another than to knock him down."—Dr. Samuel Johnson.

Ever since this railway was opened for traffic, the courtesy of our employes has been proverbial. Through that, almost every passenger who has once honored us with his patronage has become a lifelong friend. Such friendship has contributed to the prosperity of the company, and the prosperity of the company has been shared in full measure with the employes. The politeness which in the first place was dictated by the natural good taste of the men, can therefore be justified on other grounds as an exhibition of enlightened selfishness.

Other railway companies have come to realize the advantage we enjoy in this respect, and it has become the fashion to send out circulars enjoining politeness on all those having direct relations with the public. No such circular is necessary in our case, but we cannot allow our position of proud pre-eminence to be endangered, and I offer a suggestion which I know will receive your acceptance.

The immense growth of our business in recent years makes it necessary for us to employ a number of new men. Many of these have not had all the advantages; none of them are fully seized of the traditions of our service when they start in. Is it not our duty to quietly and tactfully impress on them the advantages to themselves and to their employers of courtesy and consideration toward the public? If the reputation of the company is not maintained its popularity will diminish, and the loss of traffic must ultimately effect the interests of every one of us.

I am convinced that you are heartily with me in endeavoring to see that any patron, present or prospective, who addresses an employe of this company will receive a courteous and intelligent reply.

Please influence those about you.

Dominion Railway Subsidy Contracts. The Department of Railways has entered into contracts April 25, with the Quebec and Lake St. John Ry. under the terms of the act granting aid to certain railways for the building of the following lines:—From Valcartier station to St. Catherines, Que., 3.8 miles, and from Valcartier station, towards Gosford, Que., 5.5 miles. Track was laid on these two lines in 1908.

A New Orleans, La., dispatch says stock in the New Orleans, Fort Jackson & Grand Isle Rd., which was owned by Representative C. D. Haynes, of New York and his associates has been transferred to C. D. Warren, of Toronto. The line extends from New Orleans to Buras, 59.6 miles. Mr. Warren was formerly President of the Lake Superior Corporation

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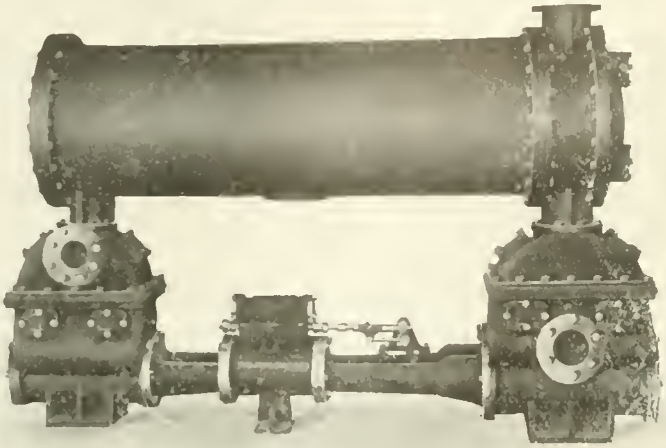

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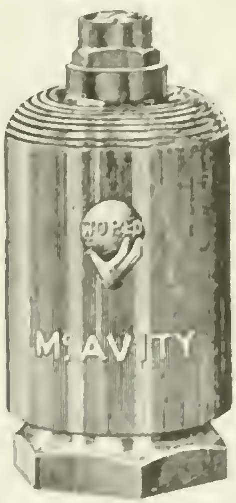
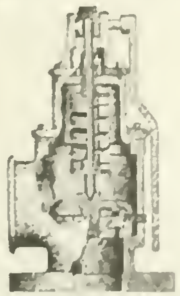


FLANGED BASE SECTIONAL VIEW



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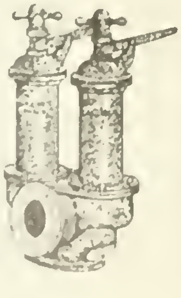
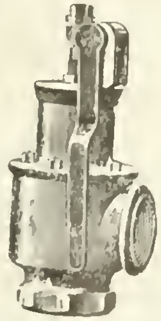
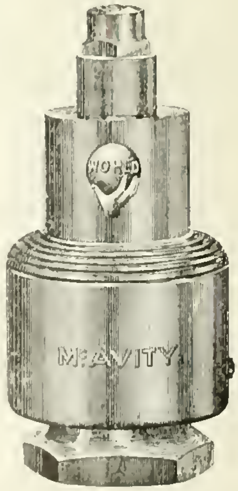


SCREWED BASE



PLAIN



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Canadian Northern Ry. Construction, Etc.

Quebec and Lake St. John Ry.—A contract was entered into April 25 with the company under the Dominion act granting aid to certain railways, in respect of the construction of a line from Valcartier station to St. Catherines, Que., 3.8 miles, and for the construction of a line from Valcartier station towards Gosford, Que., a distance of 5.5 miles. Track was laid on these two lines during 1908.

Canadian Northern Quebec Ry.—The Board of Railway Commissioners has issued an order correcting an error in the application for the approval of the location of the St. Jacques branch, from St. Jacques to Rawdon, Que.

The company has under consideration the question of terminals in Montreal, and reports in real estate circles in that city, credit the C.N.Q.R. and its owners, Mackenzie, Mann & Co., with being at the back of nearly all the large property changes in the centre of the city. The latest report is that the site of the Jesuit College, on Bleury St., which has just been sold, has been secured for the terminal station.

Canadian Northern Ontario Ry.—Contracts for the construction of the remaining portion of the C.N.O.R. between Toronto and Ottawa were let May 19. The line will have a total length of about 250 miles. Its building was started two years ago, when a contract was let to Angus Sinclair for a section of 100 miles from just outside Toronto to Trenton. Since then there have been acquired in the interests of the company, the Central Ontario Ry., the Bay of Quinte Ry. and the Brockville, Westport and Northwestern Ry., and these purchases necessitated some deviations from the route which had been originally laid out. As a result, certain portions of these lines will be taken in, and in course of time certain alterations and improvements will be carried out, notably on the Bay of Quinte Ry. from Deseronto to Sydenham. The contract held by Angus Sinclair was extended to cover work done beyond Trenton, and has now been extended to cover the construction of the line to Deseronto, where connection is to be made with the Bay of Quinte Ry., which is to be used from Deseronto to Sydenham. Mr. Sinclair will also build some four miles of line, in revision of location on the Bay of Quinte Ry. From Sydenham, mileage 163, a contract covering grading, fencing, bridges and culverts, tracklaying and ballasting, has been let to J. P. Mullarkey, to mileage 180, and from mileage 200 to mileage 250, and for the bridges, culverts and other work between mileage 180 and mileage 200, the grading and timber work on which will be done by Ewen Mackenzie.

The Board of Railway Commissioners has approved of the opening for traffic of the Whitney extension of the Central Ontario Ry. from Maynooth station to 14.5 miles northerly. It has also authorized the company to take, for better station accommodation, without the consent of owners, additional land in Hillier tp., Ont.

Representatives of the city of Hamilton were in Ottawa, May 10, in connection with the company's application for approval of the plans for its entrance into that city. The city council objects to level crossings and to the cutting into the park property. The plan submitted shows a route cutting through Harvey Park. The Minister said he would map out a route if the city and the company failed to agree.

Canadian Northern Ry.—The Minister of Railways had before him May 10 the company's application for approval of its proposed new entrance to the Union Station at Winnipeg. After hearing what the company and the city had to say, the plans were referred to the Board of Railway Commissioners to decide as to the conditions which should be imposed.

The Dominion Engineer at Winnipeg has reported that the new bridge across the Assiniboine River has been built in accordance with the plans, that provision is made for a lift span, and that the girders already placed in position are part of the lift span. There has been a delay in the delivery of the lifting machinery.

The Board of Railway Commissioners has issued an order extending for three months from April 18, the time within which the branch line of the Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co., on Lauriston St., Saskatoon, Sask., may be built, as authorized by the Board's order of April 19, 1910.

The work of reballasting the line from Regina to Prince Albert, Sask., is being proceeded with, the section of the work at present in hand being that between Saskatoon and Hanley. It is reported that the present 70 lb. steel rails are to be replaced with 84 lb. ones at an early date.

An arrangement is reported to have been completed with the C.P.R. by which the Canadian Northern Ry. will secure an entrance into and the use of the new station which the C.P.R. is about to build in Regina, Sask.

The branch line which the company is building from Maryfield westerly, is rapidly approaching Moose Jaw, Sask., the grading gangs being reported, May 9, to be well beyond New Warren. The work is expected to reach about four miles from Moose Jaw by July 1, by which time the definite approach into the city will have been arranged for. Track is expected to be laid into Moose Jaw by the fall.

The Board of Railway Commissioners has approved of location plans for the Saskatoon-Calgary branch through tps. 13 to 16, ranges 24 to 26, west of the second meridian, Sask., mileage 58.27 to mileage 85.1.

Plans have been approved by the Minister of Railways for a line from Battleford, Sask., in the direction of its lines now under construction in Southern Alberta.

The building of the line from Vegreville to Calgary is being pushed rapidly forward. The grading gangs have reached the city limits of Calgary, but there are yet some points where there are steam shovels at work, notably at the Elbow, at the cement works, and at Valleyfield. Tracklaying is being proceeded with south of the Red Deer River, and steel is being laid at a rapid rate. Considerable property has changed hands of late in the city in the vicinity of First St. W. and Eighteenth Ave., the company being reported as having secured altogether 640 ft. of frontage on First St. and 150 ft. on the avenue. It is expected that this site will be utilized for station purposes.

In connection with the survey work which was started at Lethbridge, May 1, one of the staff is reported as saying that the line proposed to be built from Lethbridge will strike the Vegreville-Calgary branch east of the Bow River, near where the C.P.R. crosses, about four miles from Calgary.

Work is being pushed rapidly on the Stettler-Brazeau line. The Northern Construction Co. has had a large quantity of plant and material delivered at Red Deer, and is engaging all the men available. The line is being built under the charter of the Canadian Northern Western Ry., which company the Board of Railway Commissioners has authorized to cross the C.P.R. Calgary and Edmonton branch, in s.w. ¼ of section 15, tp. 39, range 27, west of the fourth meridian. Press reports state that the company has secured a section of land bordering on Sylvan Lake, just west of Red Deer, on this line, which it is proposed to lay out as a summer resort.

A number of gangs of men are reported to be at work grading an extension of the line, now terminating at Stoney Creek, in the direction of Athabasca Landing, Alta. It is stated that there is a possibility of the line being completed to that point this year.

Notice has been given by the Government that the Dominion Parliament will be asked to consider, when it reassembles in July, an amendment to chap. 6 of the statutes of 1910, under which aid was given by guarantee of bonds to the C.N. Alberta Ry. The amendment proposes to substitute for the line then proposed to be aided, the following:—A line of railway of the C.N.A.R. from near Edmonton or St. Albert generally westerly to the coal areas, situate on the company's authorized line near Brule Lake in Jasper Park, and by providing that the aid granted by the act of 1910 shall be given to the new line, and that the securities shall be secured by a first mortgage upon the line to be built.

The Board of Railway Commissioners has approved of location plans for the C.N. Alberta Ry. through tp. 53, ranges seven to 10, west of the fifth meridian, mileage 62.47 to mileage 82.62.

The Cowan Construction Co. is reported to have started work on a 40 mile section of a line heading for the Peace River. This line leaves the line to Yellowhead Pass at Onoway, about 30 miles west of Edmonton, runs northwest to Pembina, to the Athabasca River, crossing at Habaska, about 30 miles below the mouth of the McLeod River. The surveys for about 80 miles of the projected line are reported completed, and it is stated that the surveys will be completed through to Dunvegan, on the Peace River, next year.

Canadian Northern Pacific Ry.—The route map for this railway shows a line from New Westminster to Yellowhead Pass, on the British Columbia-Alberta boundary, having a total length of 502 miles. The line runs along the south bank of the Fraser River, the C.P.R. being on the north bank, for just over 140 miles, and crosses both the river and the C.P.R. between Cisco and Lytton, continuing parallel to the C.P.R. to Kamloops, where it turns along the valley of the North Thompson River, and the northern branch of that river to Tete Jaune Cache, and then turning southerly reaches the Yellowhead Pass. An arrangement is being negotiated with the Vancouver, Victoria and Eastern Ry. and Navigation Co. (Great Northern Ry., U.S.), as to a portion of the route between Chilliwack and the Hope Mountain, and in the Fraser River canyon, some difficulties had to be settled with the C.P.R. There were no difficulties in regard to other portions of the route, except such as usually arise in securing the most feasible line for construction, and the work is well advanced between New Westminster and Hope, and tenders were received on May 12 for the 163 miles from Hope to Kamloops. The tenders were asked for in sections, as follows: from Hope to Boston Bar, about 40 miles; Boston Bar to Lytton, about 28 miles; Lytton to Ashcroft, about 44 miles; Ashcroft to Kamloops, about 51 miles. This distance covers the canyons of the Fraser and Thompson rivers, and includes the heaviest work on the whole line. It comprises about 25,000 ft. of tunnelling and a large number of bridges, crossing and recrossing the Fraser and the Thompson rivers. The location and size of these bridges are not yet sufficiently definitely located for particulars of them to be given. There are two long tunnels, one at Battle Bluff on Kamloops Lake, 2,740 ft., and another opposite Yale, 2,000 ft. The line is located on a

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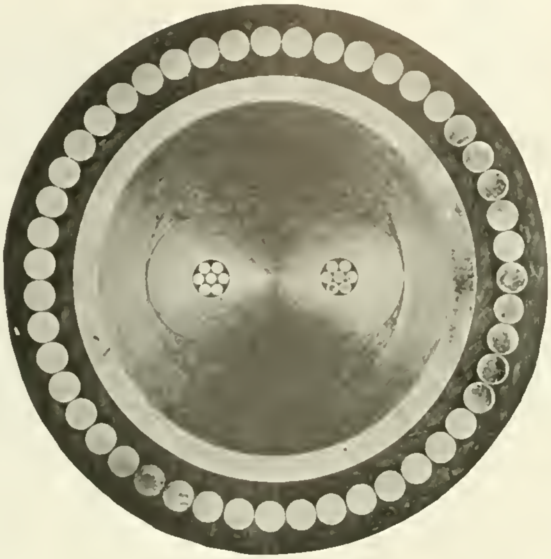

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Three cargoes, consisting altogether of 30,000 tons of steel rails, have been delivered at Port Mann, and two other cargoes, consisting of 20,000 tons of rails, are on their way to the same place, for use on the B.C. lines.

Vancouver Island.—Reports from Victoria state that construction has been thoroughly opened up from about a mile and a half east of Parson's Bridge to the Smoke River, about 34 miles from Victoria. The work in some places is well advanced, and good progress is being made with the heavier portions of the work. Several engineering parties are at work on the route right into Alberni, revising the location already made. The work is rather heavy between Nitinat and the shores of Albernl canal owing to the rocky character of the formation and the heavy growth of timber. (May, pg. 429.)

Railway Rolling Stock Notes.

W. P. McNeil & Co., New Glasgow, N.S., have ordered 1 flat car, 60,000 lbs. capacity, from the Canadian Car and Foundry Co.

The Canadian Bridge Co., Walkerville, Ont., has ordered 2 flat cars, 80,000 lbs. capacity, from the Canadian Car and Foundry Co.

The Hart-Otis Car Co., has ordered 16 dump cars, 60,000 lbs. capacity, for the British Columbia Electric Ry., from the Canadian Car and Foundry Co.

The Grand Trunk Pacific Ry. has received three dining cars, nos. 4003 to 4005, and five colonist cars, nos. 3018 and 3021 to 3024, from the Canadian Car and Foundry Co., Montreal.

The Dominion Government recently voted $21,750 for additional rolling stock for the Prince Edward Island Ry., which amount, we are officially advised, is to cover one tank car and 15 Hart-Otis dump cars, which will be built in the P.E.I. Ry. shops at Charlottetown.

The Intercolonial Ry. has ordered two first class coaches and three colonist cars from the Canadian Car and Foundry Co., Montreal, and three first class coaches from the Preston Car and Coach Co., Preston, Ont. It has also received four stock cars from its Moncton shops.

Press reports state that after a study of the various types of passenger cars in use on this continent, the Austrian State Railway System has decided that the C.P.R. observation cars are the best suited for the tourist service in eastern Europe, that a contract has been placed with the C.P.R. for some of these cars to be built at the Angus shops, and that others of the same type will afterwards be built in Austria.

A Winnipeg dispatch says W. Whyte, Vice President C.P.R., has announced that crude oil is to be used for fuel for the locomotives running through the mountains. The only changes that would be necessary in order to make the locomotives suitable for oil burning would be the construction of a reservoir on the tank to hold oil instead of coal, and the application of oil burners and suitable brick work.

The Canadian Northern Ry. has ordered five consolidation locomotives from the American Locomotive Co., and four ten-wheel locomotives from the Baldwin Locomotive Co., and five 72 ft. combination passenger and baggage cars from the Preston Car and Coach Co., Preston, Ont. It is also receiving tenders for the supply of 250 box cars and 100 flat cars for the Duluth, Winnipeg and Pacific Ry.

The Intercolonial Ry. three first class coaches ordered from the Preston Car and Coach Co., Preston, Ont., will be finished in Sar Jago mahogany, inlaid, with polished brass trimmings, and equipped with walk-over seats upholstered in plush, the smoke room seats, also. The steam heating will be the Safety Car Heating and Lighting Co.'s direct system, and the lighting will be by Pintsch gas. The car bodies will be 72½ ft. long and the car 80 ft. 5¼ ins. over all.

The Canadian Northern Ry. five combination passenger and baggage coaches ordered from the Preston Car and Coach Co., Preston, Ont., will have the interiors birch finished, left natural in the baggage end and stained mahogany in the passenger end. They will be equipped with the Canadian Gold Car Heating and Lighting Co.'s heating system, and lighted by acetylene gas. The wheels and axles will be supplied by the Canada Iron Corporation. The length of the bodies will be 72½ ft.

The C.P.R., between Apr. 14 and May 14, ordered the following rolling stock: 50 vans and ten D.10 locomotives from its Angus shops, Montreal; 15 D.10 locomotives and 10 N.3 locomotives from the Montreal Locomotive Works; two Lidgerwood ballast unloaders, from Allis-Chalmers-Bullock, Ltd., Montreal; two steel underframes for Lidgerwood ballast unloaders, from the Canadian Car and Foundry Co., Montreal; one 100 ton wrecking crane and one ballast spreader in the U.S.

The Canadian Northern Ry., between Apr. 15 and May 15, received the following additions to rolling stock: 150 box cars, three first class cars from the Canadian Car and Foundry Co., Montreal; seven cabooses, two second class cars, 80 stock cars from the Crossen Car Manufacturing Co., Cobourg, Ont.; 160 Hart-Otis cars from the Hart-Otis Car Co., Montreal; two second class and baggage cars from the Preston Car and Coach Co., Preston, Ont., and 60 box cars from the Nova Scotia Car Works, Halifax, N.S.

A gasoline electric car which was recently built for the Buffalo, Rochester and Pittsburg Rd., proceeded under its own power from the shops at Schenectady, N.Y., to its destination, over the New York Central Rd., making the trip of 225 miles without delay or trouble of any kind, and furnishing an excellent proof of its adaptability for general service. The power plant consists of a gasoline engine directly connected to an electric generator, which furnishes current for standard motors mounted upon the axles. It carries a storage tank for 100 gallons of gasoline, on which it can travel 200 miles.

The C.P.R., between Apr. 14 and May 14, received the following additions to rolling stock: five sleeping cars, 23 suburban cars, 503 box cars, 33 refrigerator cars, passenger; one pile driver, five first class passenger and smoking cars, six vans, five switching locomotives and one Mallet locomotive from its Angus shops, Montreal; 120 steel flat cars and six steel flat cars for the Esquimalt and Nanaimo Ry., two steel frames for Lidgerwood unloaders, from the Canadian Car and Foundry Co., Montreal: six D.10 locomotives from the Canadian Locomotive Co., Kingston, Ont.; and 18 tank cars, two wrecking cranes, three steam shovels, from the U.S.

Following are chief details of the six first class coaches which the G.T.R. is building at its Montreal shops, as mentioned in our last issue:—

Length over end sills	67 ft. 6 ins.
Length over buffers	75 ft. 6 ins.
Width at lower deck crown moulding	10 ft. 1 in.
Width of upper deck	6 ft. 7 ins.
Height from rail to top of lower deck crown moulding	11 ft. 5 ins.
Height from rail to top of roof at centre	14 ft. 1 in.
Height from rail to top of roof over all	14 ft. 6 ins.
Height from rail to centre of coupler	2 ft. 11 ins.
Height from rail to platform	4 ft. 3⅜ ins.
Wheel base, one truck	10 ft. 6 ins.
Wheel base, total	62 ft. 1 in.
Passenger compartment, length inside	48 ft. 8 ins.
Pasenger compartment, width inside	8 ft. 9 ins.
Smoking room, length inside	12 ft. 9 ins.
Smoking room, width inside	6 ft. 5 ins.
Length inside, total	66 ft. 6 ins.
Width inside, total	8 ft. 9 ins.
Inside lobby	5 ft. 10 ins.
Height from floor to under side deck rails	7 f.t 7 ins.
Weight	112,600 lbs.
Trucks	Six wheeled
Wheels	38 ins. steel tired
Journals	5 ins. by 9 ins.
Platforms	Steel
Vestibules	Standard, wide
Couplers	Tower
Seating capacity, passenger	61
Seating capacity, smoking room	12
Hoppers	Duner Co.

Following are chief dimensions and special equipment of the two first class vestibule coaches and three colonist sleeping cars, which the Intercolonial Ry. is having built by the Canadian Car and Foundry Co., Montreal:—

First Class Coaches.

Length over platforms	80 ft.¼ in.
Length over end sills	72 ft.
Width over side sills	9 ft. 10 in.
Wheel base of truck	10 ft. 6 iu.
Interior finish	Mahogany.
Body bolsters	Double, cast steel.
Trap doors	Wood.
Lighting equipment	Pintsch gas.
Heating equipment	Safety Car Htg. & Ltg. Co.'s direct steam.
Platforms	Standard Coupler Co.
Vestibules	Pullman.
Air brakes	Westinghouse P.M. 1612.

Colonists' Sleeping Cars.

Length over buffers	71 ft. 7¼ in.
Length over end sills	63 ft. 7 in.
Width over side sills	9 ft. 10 in.
Wheel base of truck	10 ft. 6 in.
Interior finish	Ash.
Body bolsters	Double, cast steel.
Trap doors	Wood.
Platforms	Standard Coupler Co.
Lighting equipment	Pintsch gas.
Heating equipment	Safety Car Htg. & Ltg. Co.'s direct steam.
Vestibules	Pullman.
Air brakes	Westinghouse P.M. 1612.

Trucks for each type of car:

Style	6 wheel, 80,000 lbs. capacity, wood frame.
Wheels	Steel tires, 36 in.
Journal wedges	Drop forged, 5 by 9 in.
Axles	M.C.B. steel, 5 by 9 in.
Journal boxes	McCord & Co.
Centre bolsters	Cast steel.
Brake beams	Simplex high speed.
Brake shoes	Steel back.

The Quebec Bridge.

C. N. Monsarrat, heretofore Bridge Engineer for the C.P.R., was by an order in council, passed May 7, appointed Chairman of the Board of Engineers in charge of the construction of the Quebec Bridge, in succession to H. E. Vautelet, resigned. Another order in council, was passed May 16, appointing C. C. Schneider, of New York, a former President of the American Society of Civil Engineers, and for many years Chief Engineer of the American Bridge Co., to be a member of the commission in place of C. MacDonald, who had only accepted office temporarily. Ralph Modjeska, the only member of the original commission, and Mr. Schneider, will act as consulting engineers, while Mr. Monserrat will devote his whole time to superintending the erection of the bridge.

The supplementary estimates submitted to the House of Commons, May 8, contain an item of $550,000, of which $250,000 is to be paid to the Province of Quebec, and $300,000 to the city of Quebec, as refunds of the subsidies paid to the Quebec Bridge and Ry. Co., towards the erection of a highway and railway bridge.

Replying to a question as to what amounts had been expended in connection with the Quebec Bridge, in addition to the $31,000 odd paid to the engineers who investigated as to the circumstances connected with the building and collapse of the Quebec Bridge, the Minister of Railways said in the House of Commons, recently, the net amount paid for the year ended Mar. 31, 1909, was $35,822.41; the amount paid for the year ended Mar. 31, 1910, was $111,788.02, and the amount for the year ended Mar. 31, 1911, was $194,450.41; making a total of $342,060.84. (May, pg. 435.)

A HISTORY OF THE PAY-AS-YOU-ENTER CAR

AND ITS LESSON

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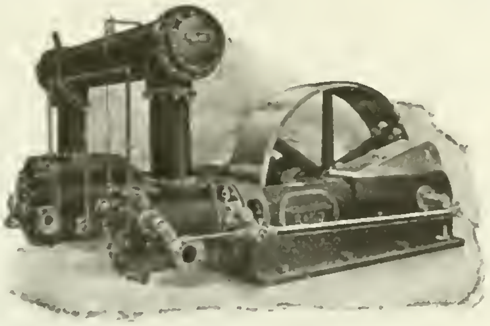

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*Advertisements marked with an asterisk appear in alternate issues.

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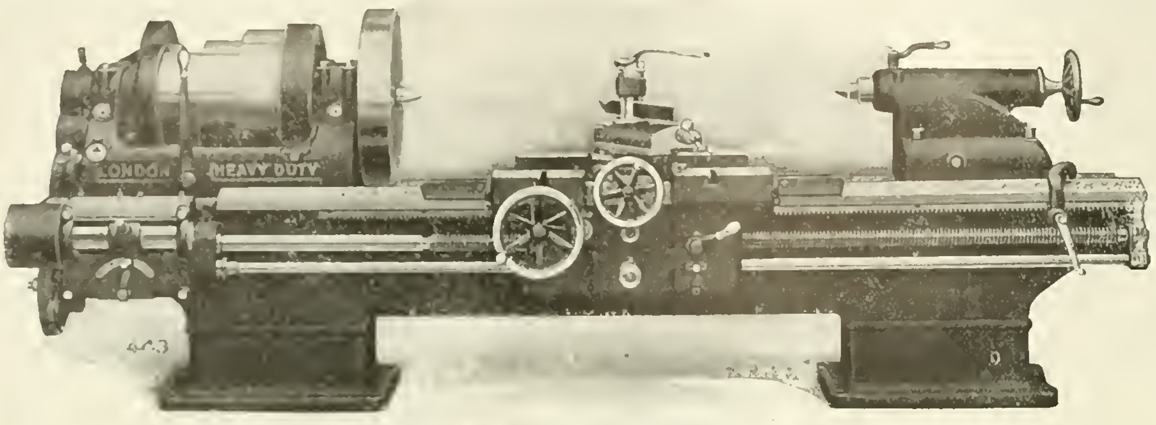

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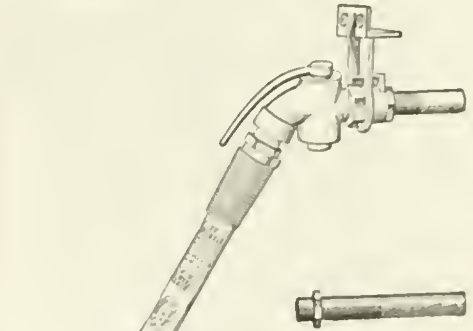

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MAINLY ABOUT PEOPLE.

Sir Wm. C. Van Horne, returned to Canada, from Europe, at the end of April.

Hayter, and Mrs. Reed left Montreal during May for a short stay at St. Andrews, N.B.

Mrs. Maver, wife of A. A. Maver, Master Mechanic, G.T.R., Montreal, died there, May 2.

C. M. Hays, President, G.T.R. and G.T.P.R., returned to Canada, May 18 from England.

Sir Wm. Mackenzie, President Canadian Northern Ry., left Toronto for England, early in May.

A. A. Allan, of the Allan Line, accompanied by Mrs. Allan, sailed from Montreal, for England, May 12.

Jas. Hamilton, formerly Manager, Shedden Forwarding Co., at Hamilton, Ont., died there, May 2, aged 66.

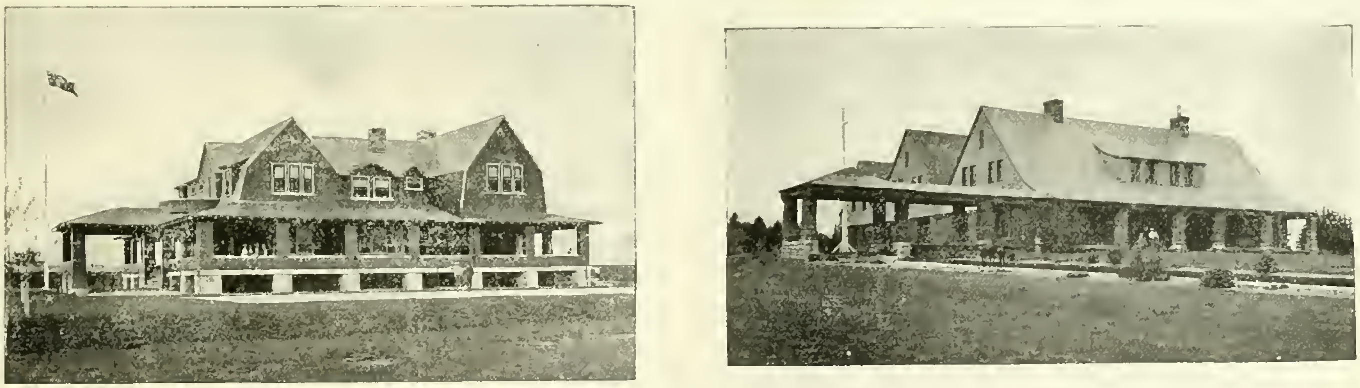
The engagement is announced of W. J. Shaughnessy, son of Sir Thos. G. Shaughnessy, to Miss M. L. Graham.

W. Kemp, chief clerk, Division Freight Agent's office, G.T.R., Portland, Me., was married in Manchester, Eng., May 12.

W. B. Boyd, Chief Electrician, Toronto Ry., has been elected a Member of the Institute of Electrical Engineers of Great Britain.

Sir Wm. C. Van Horne is reported to have purchased a picture by Rubens, for $100,000, while in Paris, France, recently.

SUMMER HOUSES AT ST. ANDREWS, N.B.



Fort Tipperary, Sir Thos. G. Shaughnessy.

Covenhoven, Sir Wm. C. VanHorne.

Mrs. MacTier, wife of A. D. MacTier, Assistant to the Vice President, C.P.R., Montreal, is spending the summer in England.

John Hargrave, who has done considerable railway contracting during the past ten years, died at Winnipeg, May 4, aged 81.

W. R. MacInnes, Freight Traffic Manager, C.P.R., Montreal, who went to England early in April, returned to Canada, May 12.

G. T. Bell, Assistant Passenger Traffic Manager, G.T.R., and G.T.P.R., has been elected a Vice President of the Canadian Club, Montreal.

The engagement is announced of Miss R. M. Elliott, daughter of W. S. Elliott, Division Freight Agent, C.P.R., North Bay, Ont., to A. H. Rosevear.

R. Marpole, General Executive Assistant, C.P.R., Vancouver, B.C., was in Montreal early in May, on business connected with the British Columbia lines.

H. S. Holt, President, Montreal Light, Heat and Power Co., has been elected a director of the C.P.R., in place of the late Hon. L. J. Forget.

A. D. Smith, who was for many years, connected with Foley, Welch and Stewart, contractors on the G.T. Pacific Ry., died at Cochrane, Ont., May 8.

John Harvie, who was the first conductor on the old Northern Railway of Canada, celebrated his golden wedding at Toronto recently.

W. R. Baker, Secretary, C.P.R., who returned to Canada May 5, from a short trip to England and the Continent, was received at Windsor by the King and Queen.

W. G. Ross, ex-Managing Director, Montreal St. Ry., who has been staying at Nice, France, for some time, recently won a silver medal there, in one of the weekly golf handicaps.

Lt.-Col. the Hon. J. S. Hendrie, M.P.P., Chairman of the Ontario Legislature's railway committee, and Mrs. Hendrie, have returned to Hamilton, from Europe.

W. J. Power, who is reported to have been appointed Assistant General Freight Agent, Great Northern Ry., St. Paul, Minn., was from 1891 to 1895 in the C.P.R. freight office, at London, Ont.

H. A. Parker, a former Vice President and General Manager, Chicago, Rock Island and Pacific Ry., and recently a consulting engineer of the G.T.P.R., died at Chicago, Ill., May 3.

F. C. Wilson, President of Williams & Wilson, Ltd., Montreal, who left in March for a Mediterranean trip with Mrs. and Miss Wilson, are expected to return in June.

Lord Mount Stephen has offered to give £10,000 towards the institution of a pension fund for ministers of the Church of Scotland, on condition that there are nine other contributors of like amounts.

W. E. Fowler, ex-Master Car Builder, C.P.R., who has been in California for some time, returned to Montreal in May to take his family to California, where they will reside in future.

A. A. Allan, of the Allan Line, and President of the Shipping Federation of Canada, has been elected a director of the Merchants Bank of Canada, vice H. A. Allan, resigned on account of his residence in England.

J. J. O'Neil, whom newspaper reports speak of as Inspector of Bridges and Buildings, T. & N.O.R., North Bay, Ont., was presented with a grandfather's clock recently by a number of the local employes, on his retirement from the service.

H. Watson, heretofore Travelling Passenger Agent, C.P.R. Steamships Service, Winnipeg, Man., has been appointed General North Western Agent, Allan Line, at Minneapolis, Minn., vice O. N. Westlund, resigned to enter other business.

G. H. Shaw, General Traffic Manager, Canadian Northern Ry., Toronto, sailed from Montreal, on the s.s. Royal Edward, May 17, with Mrs. Shaw, on business connected with his department, in Great Britain. He expects to return about the middle of July.

Sir Wm. Mackenzie, President, Canadian Northern Ry., and Hon. R. Dandurand, director, Grand Trunk Pacific Ry., have been elected directors of the Dominion Steel Corporation Ltd., in the places of the late Hon. L. J. Forget, and the late H. F. Dimock.

R. J. Mackenzie, of the Canadian Northern Ry., who owns a number of race horses, is reported to have decided to dispose of the whole of them, as the railway and other interests, with which he is connected, do not allow him the time which they appear to demand.

D. A. Story, General Freight Agent, Intercolonial Ry., Moncton, N.B., who has been granted an extended leave of absence, on account of ill health, and who recently returned from a trip to Bermuda, is spending a few weeks in the White Mountains.

G. A. Walker, who has been connected with the Toronto office of the C.P.R. Legal Department, for 21 years, was presented with a gold watch, May 6, by the staff there, on his leaving for Calgary, to take charge of the C.P.R. Legal Department for Alberta.

J. P. Forde, who recently resigned the position of Resident Engineer, District 1, British Columbia Division, C.P.R., has been appointed Resident Engineer, B.C. Public Works Department, with supervision over the southeastern portion of the province, and office at Revelstoke.

G. J. P. Moore, who was recently appointed City Passenger Agent, C.P.R., at Quebec, Que., was entertained to dinner in Montreal, by a number of his associates, prior to his leaving to take up the duties of his new position, and was presented with an engraved gold watch.

M. J. Quinn, of the Canadian Northern Quebec, and Quebec and Lake St. John Rys. accounting office, Quebec, Que., was presented by the members of the staff, May 9, with an address and an oak silverware cabinet, on his leaving the service on his appointment as a civic assessor.

Lord Strathcona, who presided at the annual dinner of the City of London International Commercial Association, recently, was presented by the representative of the Comite Republicain, present, with a bronze trophy representing Peace, decked with the flags of England and France.

D. Rose, who has been appointed European Traffic Manager, Illinois Central, Indianapolis Southern, Yazoo and Mississippi Valley Rys., Central Ry. of Georgia, and the Ocean Steamship Co., with office in London, Eng., began his railway career in the G.T.R. Traffic Department at Montreal.

F. W. Morse, General Manager, Chicago and Alton Rd., and Toledo, St Louis and Western Rd., and who was formerly Vice President and General Manager, Grand Trunk Pacific Ry., at Winnipeg, has been elected also Vice

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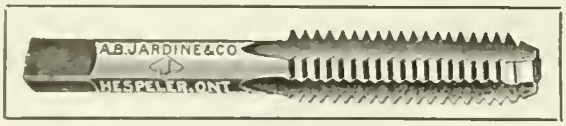

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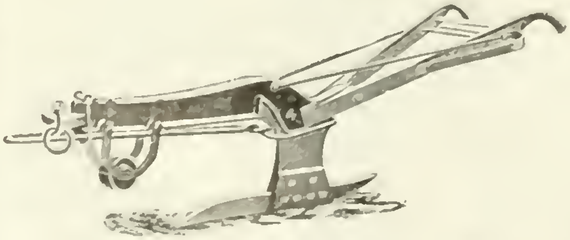

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President, succeeding G. H. Ross, resigned on account of ill health.

The British Columbia River Lumber Co., Ltd., which recently issued £600,000 5% first mortgage debenture stock, in London, Eng., at 89, has among its directors, Sir Wm. Mackenzie, R. M. Horne-Payne, D. B. Hanna, A. D. Davidson, A. D. McRae, R. J. Mackenzie and F. H. Phippen, of the Canadian Northern Ry.

E. E. Mullins, who has been appointed Superintendent of Motive Power, Northern Ry. of Costa Rica, at Limon, graduated from the School of Practical Science, Toronto, in 1900, and was for two years in the G.T.R. shops, and for six years in the Baldwin Locomotive Works. He has been with the Northern Ry. of Costa Rica, for three years, as Mechanical Engineer.

George Black, Road Foreman of Locomotives, G.T.R., Stratford, Ont., whose paper on improvement in modern locomotives appears in this issue, was born in Lincolnshire, England, where he saw railway service as engine wiper and spare foreman on the Great Northern Railway. In Canada, he has worked as wiper, foreman and locomotive engineer, and was appointed Road Foreman of Locomotives on the G.T.R. in Oct., 1902, which position he still holds..

R. R. Jamieson, formerly General Superintendent, Western Division, C.P.R., Calgary, Alta., and who retired from railway service in 1908, to enter private business, after which he was for two years mayor of Calgary, and chairman of the commission responsible for the construction and operation of the municipal street railway, was reported to be seriously ill at New Westminster, B.C., recently. It was stated that his condition was very serious, and that he might not survive many weeks.

J. E. Berry, whose appointment as New England Agent, National Despatch-Great Eastern Line, Boston, Mass., we announced in our last issue, was born at Biddeford, Me., May 23, 1878, and entered transportation service, Mar. 1, 1901, since when he has been, to May 1, 1903, Inspector of Trunk Line Association; May 1, 1903, to Dec. 12, 1905, Eastbound Agent, National Despatch-Great Eastern Line; Dec. 12, 1905, to May 1, 1911, Travelling Freight Agent, Central Vermont Ry.

H. Baitey, whose appointment as Bridge and Building Master, District 1, Lake Superior Division, C.P.R., Sudbury, Ont., was announced in our last issue, was born at Huntsville, Ont., Sept. 2, 1879, and entered C.P.R. service, in the Bridge and Building Department, Lake Superior Division, Aug. 11, 1902, and, from June 6, 1904, to June 21, 1909, was foreman of that department; June 21, 1909, to Apr. 1, 1910, shop foreman at North Bay, Ont.; Apr. 1, 1910 to Apr. 1, 1911, Assistant Bridge and Building Master, Lake Superior Division.

J. P. Daly, whose appointment as General Freight and Passenger Agent, Ottawa and New York Ry., Ottawa, was announced in our last issue, was born at Weedsport, N.Y., Oct. 15, 1871, and entered railway service, Feb. 1889, since when he has been, to Nov. 1893, freight clerk, N.Y.C. & H.R. Rd., Weedsport, N.Y.; Nov. 1893 to Aug. 1904, agent, same road and place; Aug. 1904, to Apr. 1, 1907, Contracting Freight Agent, same road, Buffalo, N.Y.; Apr. 1, 1907, to Apr. 1, 1911, chief clerk, Division Freight Agent's office, same road, Buffalo, N.Y.

A. W. Davis, who has been appointed Locomotive Foreman, G.T.R., Stratford, Ont., was born at Sittingbourne, Kent, Eng., Sept. 5, 1864, and entered G.T.R. service July 7, 1897, since when he has been, to May 1, 1903, machinist apprentice, and later foreman at Toronto, and for five years, roundhouse foreman at St. Thomas, Ont.; May 1, 1903 to May 1, 1911, Superintendent of Motive Power, Bay of Quinte Ry., asissting erecting shop foreman, Canada Foundry Co., Toronto, and roundhouse foreman, Norfolk and Western Ry., Roanoke, Va., respectively.

O. L. Dickeson, who has been appointed Vice President, White Pass and Yukon Route, Vancouver, B.C., was born at Ottumway, Ia., Sept. 16, 1877, and entered railway service, Jan. 18, 1899, since when, he has been, to 1901, stenographer in transportation department, Chicago, Burlington and Quincy Rd.; 1901 to 1905, chief clerk, same department, same road; 1905 to 1908, Superintendent of Transportation, same road, lines west of Missouri River, Omaha, Neb.; 1908 to April 24, 1911, Special Inspector of Transportation, same road, Chicago, Ill.

W. J. Quinlan, whose appointment as District Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, was announced in our last issue, was born at Montreal, Nov. 21, 1883, and entered railway service Mar., 1902, since when he has been, to June, 1903, in Baggage Department, G.T.R.; June, 1903, to July, 1904, in ticket office, Bonaventure station, Montreal; July, 1904, to May, 1907, clerk in city ticket office, G.T.R., Montreal; May, 1907, to July, 1910, Passenger Agent, G.T.P.R., Winnipeg; July, 1910, to Apr., 1911, Travelling Passenger Agent, G.T.P.R., Winnipeg.

C. N. Monsarratt, A.M. Can. Soc. C.E., who has been appointed Chairman, Quebec Bridge Commission, was born at Montreal, July 2, 1871, and entered C.P.R. service Nov., 1889, since when he has been, to June, 1896, structural draughtsman, Chief Engineer's office, Montreal; June, 1896, to Apr., 1897, Inspector of Steel Bridges, in charge of their manufacture and erection; Apr., 1897, to Dec., 1901, engaged in designing and estimating structural work, and engineer in charge of erection of many important structures in British Columbia and elsewhere; Dec., 1901, to Jan., 1903, Assistant Engineer, Montreal; Jan., 1903, to Apr., 1911, Engineer of Bridges, Montreal.

C. E. Dewey, who has been appointed General Freight Agent, Grand Trunk Pacific Ry., Winnipeg, was born at Cheshunt, Eng., Oct. 2, 1873, and entered railway service, Nov. 1888, since when, he has been, to Apr. 1896, in service of G.T.R., Toronto; Apr. 1896, to Aug. 1897 chief clerk to Division Freight Agent, G.T.R., Stratford, Ont.; Aug. 1897, to Aug. 1899, chief clerk to Division Freight Agent, G.T.R., Hamilton, Ont.; Aug. 1899, to July, 1902, Division Freight Agent, G.T.R., Stratford, Ont.; July, 1902, to July, 1907, Division Freight Agent, G.T.R., Toronto; July 1907, to Apr., 1908, Assistant General Freight Agent, G.T.R., Montreal; Apr., 1908, to May 1, 1911, General Freight Agent, Central Vermont Ry., St. Albans, Vt.

J. H. Boyle, who has beem appointed Assistant Superintendent, District 4, Eastern Division, C.P.R., Ottawa, Ont., was born at Waterloo, Que., June 25, 1869, and entered C.P.R. service, Apr. 12, 1888, since when he has been, to Aug., 1890, freight brakeman; Aug., 1890, to Nov. 1903, conductor; Nov. 1903 to Sept. 15, 1906, Trainmaster District 1, Eastern Division, Farnham, Que.; Sept. 15, 1906 to Aug. 15, 1907, Trainmaster, District 3, Eastern Division, Montreal; Aug. 15, 1907 to Jan. 1, 1908, Trainmaster, District 2, Eastern Division, Smiths Falls, Ont.; Jan. 1, to May 13, 1908, Trainmaster, District 3 Eastern Division, Montreal; May 13, 1908 to Apr. 29 1911, Assistant Superintendent, District 3, Eastern Divison, Montreal.

J. O. Norrie, who has been appointed Travelling Passenger Agent, C.P.R. Atlantic Steamship Lines, Winnipeg, was born at Belfast, Ireland, Apr. 20, 1879, and entered transportation service, Jan. 22, 1894 since when he has been, to June, 1899, in various positions with the Barrow Steam Navigation Co., Belfast, June 30, 1899, to July 3, 1901, with Thos. Cook and Son; July 3, 1901, to July 14, 1905, with Clyde Steamship Co.; July 14, 1905, to June 1, 1906, manager, J. Dunlop and Co.; on June 1, 1906, he entered C.P.R. service at Londonderry, Ireland, and remained there until the Empresses were withdrawn from Moville, after which he came to Montreal, where he has since occupied various positions, latterly that of cashier and accountant, C.P.R. Atlantic Steamship service.

D. T. Lawrence, whose appointment as General Freight Agent, Central Vermont Ry., St. Albans, Vt., was announced in our last issue, was born at Marysville, Ohio, July 20, 1871, and entered railway service, May 28, 1890, since when he has been, to Nov. 16, 1892, clerk and stenographer in General Freight and Passenger Agent's office, Central New England and Western Rd., Poughkeepsie, N.Y.; Nov. 16, 1892, to July 1, 1899, stenographer, National Despatch Line, Boston, Mass.; July 1, 1899 to May 1, 1903, New England Agent, National Despatch Line, and Agent, Great Eastern Line, Boston, Mass.; May 1, 1903 to May 1, 1911, Manager, National Despatch-Great Eastern Line, Boston, Mass.

A. C. Lytle, who has been appointed Assistant Trainmaster, District 1, Eastern Division, C.P.R., Farnham, Que., was born at Hemmingford, Que., June 6, 1864, and entered railway service Sept. 2, 1872, since when he has been, to Nov., 1879, station agent, G.T.R.; Nov., 1879, to June, 1893, in mercantile business; June, 1893, to Jan., 1902, General Freight and Passenger Agent, Orford Mountain Ry.; Sept., 1894, to Jan., 1902, also Superintendent, same road; Jan., 1902, to Jan., 1903, in mercantile business; Jan., 1903, to Mar., 1910, General Superintendent, Freight and Passenger Agent and Accountant, Orford Mountain Ry., Eastman, Que.; Mar., 1910, to May, 1911, Assistant Superintendent, Orford Sub-division, Eastern Division, C.P.R., Eastman, Que.

C. G. Bowker, who has been appointed Joint Superintendent, G.T.R. and Wabash Rd., St. Thomas, Ont., was born at Medford, N.J., Apr. 21, 1871, and entered railway service in May 1888, since when he has been, to Oct., 1890, operator, Philadelphia and Reading Rd.; Oct., 1890, to 1893, operator, New England Division, same road; 1898 to 1897 in charge of telegraph lines and electrical service, Buffalo Division, Lehigh Valley Rd., Buffalo, N.Y.; May 1900 to Feb., 1902, train dispatcher, G.T.R., London, Ont.; Feb., 1902 to Nov. 1905, train dispatcher, G.T.R., Durand Mich.; Nov., 1905, to May, 1907, Chief Train Dispatcher, G.T.R., Stratford, Ont.; May, 1907, to Sept., 1909, Trainmaster, G.T.R., Stratford, Ont.; Sept., 1909, to May 13, 1911, Assistant Superintendent, Middle Division, G.T.R., London, Ont.

G. L. McCrea, who was recently appointed Local Freight Agent, C.P.R., Vancouver, B.C., was born at Springtown, Ont., Feb. 9, 1876, and entered railway service June 25, 1895, since when he has been, to 1898, assistant to the agent, Canada Atlantic Ry., Renfrew, Ont.; 1898, to Oct., 1901, agent, Canada Atlantic Ry., between Parry Sound, Ont., and Noyan Jct., Que.; Oct., 1901, to July, 1904, operator, C.P.R., Hull, Que., operator and assistant agent, C.P.R., Renfrew, Ont.; July, 1904, to Feb., 1905, relieving agent, Western Division, C.P.R.; Feb. to Aug., 1905, agent, C.P.R., Marysville, B.C.; Aug., 1905, to Apr., 1906, agent, C.P.R., Lethbridge, Alta.; Apr. to June, 1906, at Divisional headquarters, C.P.R., Cranbrook, B.C.; Feb., 1907, to Mar., 1911, revising clerk, claims clerk, etc., consecutively, in City Freight Agent's office, C.P.R., Vancouver, B.C.

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Canadian Northern Railway Construction, Montreal to Port Arthur.

The Dominion Parliament has passed an act, to which assent was given May 19, authorizing the Government to aid in the construction and completion of a line of railway extending from Montreal, Que., to Port Arthur, Ont. The act provides that the line to be aided shall include the mileage already in part built by the Canadian Northern Ontario Ry. and by the Canadian Northern Quebec Ry., from a point in Quebec province opposite Hawkesbury, Ont., to Rideau Jct., west of Ottawa, and the line already built from Capreol tp., to Sellwood Jct., Ont., 10.6 miles. The aid is to be given by a guarantee of principal and interest of the company's bonds, debentures or other securities to the amount of $35,000 a mile of line, the interest being at the rate of 3½%, the principal to be payable in 50 years. These guaranteed securities are to be secured by way of first mortgage, the trustees to the deed to be approved by the Government, over all the line from Montreal to Port Arthur except in regard to the 10.6 miles to Sellwood Jct., where the mortgage shall rank after the existing mortgages; and also shall be secured upon $2,558,500 of bonds or other securities issued under the trust deed of Aug. 24, 1909, subject to release of a portion of the deposit on account of the Sellwood Jct. 10.6 miles. The fourth section of the act provides that there shall also be a general charge, ranking after the general charge created by the trust deed of June 28, 1909, on the Hawkesbury-Niagara River line.

The line is to be built to the classification of the Heavy Standard Specifications of the Department of Railways, of 1908, with 80 lb. steel rails, the maximum curves to be of not less than 716 ft. radius with gradients of 0.5% against eastbound and of 0.6% against westbound traffic, but under special circumstances curves of 573 ft. radius and gradients of 52.80 ft. to the mile may be allowed. The Government, at the request of the company, may pay all or any portion of the interest for the first two years, and shall not enforce the payment of the same from the company until the maturity of the bonds, when the amount shall be payable with interest at the rate of 3½%. Any money paid by the Government under the guarantee shall be held to be paid in discharge of the Government's liability and not in discharge of the company's liability, and the moneys so paid shall be held to be still secured by the guaranteed securities and deed of trust, and the Government shall be subrogated in and to all the rights of the holders of guaranteed securities, the interest upon or the principal of which has been paid by the Government.

It is declared that the aid provided for is for the express purpose of encouraging transportation through Canadian channels, and that before it is granted the C.N.R. and the C.N.O.R. Companies shall enter into an agreement undertaking that all freight originating on either line or its branches not specifically routed otherwise by the shipper, shall, when destined to points in Canada, be carried over either of the lines mentioned or the connectons of either of them, or over any railway within Canadian territory, and that the through rate on export traffic from the point of origin to the point of destination shall at no time be greater via Canadian ports than via U.S. ports, that all such traffic not otherwise routed by the shipper shall be carried to Canadian ocean ports and that the C.N.R. shall not encourage the transportation of freight by routes other than those mentioned, but shall use their utmost endeavors to secure the development of trade through Canadian channels and ocean ports. The company is to establish suitable terminals in Montreal, to interchange traffic with the Intercolonial Ry. at Montreal upon terms to be agreed upon or to be fixed by the Board of Railway Commissioners; and in the event of the default of the company, and the consequent taking over of the line by the Government, it shall not oppose an application to the Board of Railway Commissioners for an order for the use of the terminals at Port Arthur or Montreal.

It is specified that all traffic originating on the C.N.R. and the C.N.O.R. or the branches thereof, not specifically routed, and when destined for points in Canada, shall be carried over such lines or their connections; that the through rate on export traffic shall at no time be greater via Canadian than via United States ports, and that the aid is granted upon the general condition that trade is to be developed through Canadian channels and through Canadian ocean ports.

In the course of the discussion in the House of Commons, the Minister of Railways said that except for a few miles eastward from Port Arthur, the line would serve an absolutely new country for the greater part of the distance to North Bay, and between North Bay and Ottawa would give railway connection with many points that do not now have it. The line would be approximately 1,000 miles long and most of the route had been approved by him. The only amendments of importance made in the bill in its passing through Parliament were the following: That the guarantee of bonds be on a mileage not exceeding 1,050 miles; and providing for the draftin of the agreement as to the interchange of traffic with the Intercolonial Ry., before the guarantee is affixed to the bonds.

Sir Donald Mann is reported as having stated in an interview at Ottawa that the line will start at Montreal, taking in the summer resorts of Ste. Eustache, Carillon, and St. Andrews, crossing the Ottawa River, and running on to Ottawa, passing through L'Orignal, Rockland and Cumberland. Leaving Ottawa one line will cross the river at Chats Falls into Quebec, pass through Norway Bay and back into Ontario at Portage du Fort, following the Ottawa River to Pembroke, and then along the valley of the Petawawa Valley, and by a direct route to North Bay, and on to Sellwood Jct. From North Bay the line will be carried through the clay belt to near Lake Nipigon, and then work south to Port Arthur, where connection will be made with the existing line.

The first section of the line includes the line in Quebec, now under construction from near Hawkesbury to Montreal, and the line from Hawkesbury into Ottawa, which was completed a couple of years ago. The second section connects up with the existing line north of Sudbury, and will run over 10.6 miles of it, to near Sellwood Jct., from which point the final section will be run to Port Arthur.

Sir Donald Mann added at the conclusion of the interview, that it was expected to have the whole line in operation by 1915. The line will go through about 300 miles of the clay belt, and through about 100 miles of mixed farming land, and there is a lot of mineral land in the territory to be served. The line will approximate 1,000 miles against 993 miles between the same points on the C.P.R.

In a further interview, May 20, Sir Donald Mann is reported as stating that the cost, roughly speaking, of the line will be about $50,000 a mile, but that this was mere guess work. While no time had been set for the completion of the line, the work of building it will be pushed as rapidly as possible. Tenders are to be asked for at once for the construction of a section of about 550 miles from Port Arthur, easterly to Selwood Jct.

The question of the terminals in Montreal is being discussed extensively in the newspapers, and while Sir Donald Mann is reported as saying that their cost will amount to about $10,000 a mile of line, the newspaper reports are to the effect that Montreal will absorb about $30,000,000 and Toronto $5,000,000 or $6,000,000.

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Government Acquisition of Branch Lines in Maritime Provinces.

Under the terms of chap. 25 of the statutes of 1910, "An act to authorize the Government of Canada to acquire, by lease, lines of railway connecting with the Government Railways," the Government Railways Managing Board, undertook, since June, 1910, the investigation of a number of lines in Quebec, New Brunswick and Nova Scotia, connecting with the Intercolonial Ry. As a result of the investigation the Minister of Railways gave notice in the House of Commons, May 17, that he would move a resolution, to be afterwards put in the form of an enactment, that the Government proceed to acquire by lease, under the terms of the act, for a period not exceeding 99 years, the following lines of railway:—

Temiscouata Ry.—From Riviere du Loup, Que., to Connors, N.B., 113 miles. This line is practically owned by the same interests which own the Quebec Central Ry.

Quebec-Oriental Ry.—From Matapedia to Paspebiac, Que., 100 miles. A portion of this was the old Baie des Chaleurs Ry., afterwards known as the Atlantic and Lake Superior Ry., and lately sold to the Quebec Oriental Ry., a company in affiliation with the Atlantic, Quebec and Western Ry., which was being financed by the Charing Cross Bank, London, Eng., now in liquidation.

International Ry. of New Brunswick.—From Campbellton to the St. John River at St. Leonards, N.B., 113 miles. This company, of which T. Malcolm is President, has authority to build a bridge across the Restigouche River at the Quebec-New Brunswick boundary, which would enable this line to be connected up with the Quebec Oriental Ry.

Caraquet and Gulf Shore Ry.—From Bathurst to Tracadie, N.B., 85 miles.

Moncton and Buctouche Ry.—From Moncton to Buctouche, N.B., about 28 miles.

New Brunswick and Prince Edward Island Ry.—From Sackville to Cape Tormentine, N.B., about 30 miles.

Kent Northern Ry.—From Kent Jct. to Richibucto, N.B., about 27 miles.

Albert Ry.—From Salisbury to Albert, N.B., about 45 miles.

Elgin and Havelock Ry.—From Elgin to Havelock, N.B., about 28 miles.

Hampton and St. Martins Ry.—From Hampton to St. Martins, about 30 miles.

York and Carleton Ry.—From Cross Creek to beyond Stanley, N.B., about 10 miles.

Vale Ry., the property of the Acadia Coal Co., from New Glasgow to Thorburn, N.S., six miles.

Cape Breton Ry.—From Point Tupper to St. Peters, N.S., about 30 miles.

The lease in each case is to include the rolling stock of the several companies. The value of each line is to be determined by the Court of Exchequer upon report of the Engineer of the Government Railways Managing Board, and the resolutions set out the principles upon which the valuation is to be made. In the case of railways which have been sold under foreclosure, and have been reconstituted, the valuation is to be based upon the amount paid for the railway. Nothing in the resolutions is to be deemed to require the taking over of any one of the lines named, if the terms and conditions proposed by the company are not fair and reasonable. When taken over the lines will be operated as part of the Government railways.

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TRANSPORTATION APPOINTMENTS.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our annnuncements will confer a favor by advising us.

Alberta Ry. and Irrigation Co.—H. C. Oswald, of the C.P.R. Secretary's office, Montreal, has been appointed also Secretary, A.R. & I. Co., vice D. Amey, who remains at the London, Eng., office as Assistant Secretary. Office, Montreal.

Canadian Northern Quebec Ry., Quebec and Lake St. John Ry.—J. W. Phair, has been appointed Bridge and Building Master, C.N.Q.R. and Q. & L. St. J. R., vice J. L. McDonald, resigned. Office, Joliette, Que.

Canadian Northern Steamships Ltd.—In our last issue it was stated that J. B. Hoseason had been appointed chief clerk to General Freight and Passenger Agent, Canadian Northern Quebec Ry., Montreal. It should have been stated that he had been appointed chief clerk, Canadian Northern Steamships Ltd., Passenger Department, Montreal, of which Guy Tombs, who is also General Freight and Passenger Agent, Canadian Northern Quebec Ry., is General Agent.

Canadian Northern Ry.—A. J. Mitchell, Comptroller, Mackenzie, Mann & Co., Ltd., has also been appointed Assistant to the Vice President, C.N.R. Office, Toronto.

C. Price Green, heretofore District Passenger Agent, C.N.R., and C.N.O.R., Toronto, having been transferred to the office of the Advertising Agent, C.N.R. System, the position of District Passenger Agent has been abolished.

J. Irwin, heretofore Superintendent, District 5, Saskatoon, Sask., has been appointed Superintendent, District 3, vice C. D. Fisher, transferred. Office, Dauphin, Man.

C. D. Fisher, heretofore Superintendent, District 3, Dauphin, Man., has been appointed Superintendent, District 5, vice J. Irwin, transferred. Office, Saskatoon, Sask.

G. H. Shaw, General Traffic Manager, has issued the following circular respecting organization of the Traffic Department of the C.N.R., including leased and allied lines. (The matter between brackets is inserted by us as explanatory).

WESTERN DIVISION.—Lines west of and including Port Arthur and Duluth (C.N.R., Duluth, Rainy Lake and Winnipeg Railway, and Duluth, Winnipeg and Pacific Railway).

Freight Department.—Geo. Stephen, General Freight Agent, Winnipeg; W. G. Manders, Assistant General Freight Agent, Winnipeg; W. E. McElmoyle, Freight Claims Agent, Winnipeg. (He was heretofore Chief Freight Claims Clerk.) J. B. Sheppard, District Freight Agent, Winnipeg. (He was heretofore Contracting Freight Agent.) C. R. Hill, District Freight Agent, Saskatoon, Sask.; J. M. Horn, District Freight Agent, Edmonton, Alta.

Passenger Department.—R. Creelman, General Passenger Agent, Winnipeg; Osborne Scott, Assistant General Passenger Agent, Winnipeg; Wm. Stapleton, District Passenger Agent, Saskatoon, Sask.

EASTERN DIVISION.—Lines east of Port Arthur in Ontario and Quebec. (C.N. Ontario Ry., C.N. Quebec Ry., Quebec and Lake St. John Ry.).

Freight Department.—Lines east of Port Arthur and west of Ottawa. (Canadian Northern Ontario Railway).

Wm. Phillips, General Freight Agent, Toronto. (He was heretofore General Eastern Agent, C.N.R., and General Freight and Passenger Agent, C.N.O.R. He continues as General Freight and Passenger Agent, Canadian Northern Steamships); G. R. Fairhead, District Freight Agent, Hamilton, Ont. (He was heretofore Commercial Agent).

Freight Department.—Lines east of and including Ottawa. (C.N. Quebec Ry., Quebec and Lake St. John Ry.) Guy Tombs, General Freight Agent, Montreal; F. A. Shaw, District Freight Agent, Montreal. (He was heretofore commercial agent) H. McDonald, Freight Claims Agent, Quebec, Que. (He was heretofore chief freight claims clerk).

Passenger Department.—R. L. Fairbairn, Assistant General Passenger Agent, Toronto. (He has authority over C.N. Ontario Ry., C. N. Quebec Ry., and Quebec and Lake St. John Ry. He was heretofore District Passenger Agent at Saskatoon, Sask.). Guy Tombs, General Passenger Agent, lines east of and including Ottawa, Montreal.

HALIFAX AND SOUTHWESTERN Railway.—Freight and Passenger Departments. P .Mooney, General Freight and Passenger Agent, Halifax, N.S.

COMMERCIAL AGENCIES.—F. A. Young, Commercial Agent, 66 West Adams Street, Chicago, Ill.; R. H. Bell, Commercial Agent, 819 Oliver Building, Pittsburgh, Pa.; J. H. McKinnon, Commercial Agent, Fourth and Jackson Streets, St. Paul, Minn.

ADVERTISING DEPARTMENT.—All lines. Rex Croasdell, Agent, Toronto. (He was heretofore General Advertising Agent reporting to Third Vice President).

Canadian Pacific Ry.—H. C. Nelson, heretofore Resident Engineer, Ottawa, Ont., has been appointed Resident Engineer, District 2, Atlantic Division, vice F. M. Rutter, transferred to Toronto. Office, Woodstock, N.B.

G. J. P. Moore, heretofore chief clerk to First Assistant General Passenger Agent, Montreal, has been appointed City Passenger Agent, Quebec, Que., vice Jules Hone, Jr., resigned. He has charge of the passenger traffic of the railway and steamship lines in Quebec and Levis. Office, 46 Dalhousie St., Quebec.

C. W. Van Buren, Master Car Builder, Eastern Lines, Montreal, has resigned.

P. A. Crysler, heretofore Assistant General Foreman, Passenger Car Repair Shop, Angus shops, Montreal, has been appointed Assistant Master Car Builder. Office, Montreal.

W. B. Way, heretofore Assistant Superintendent, District 2, Lake Superior Division, Chapleau, Ont., has been appointed Assistant Superintendent, District 3, Eastern Division, vice J. H. Boyle, transferred. Office, Montreal.

A. C. Lytle, heretofore Assistant Superintendent, Orford sub-division, Eastern Division, Eastman, Que., has been appointed Assistant Trainmaster, District 1, Eastern Divison, and performs such duties as are assigned to him by the Superintendent. Office, Farnham, Que. The position of Assistant Superintendent, Orford sub-division is abolished.

J. H. Boyle, heretofore Assistant Superintendent, District 3, Eastern Division, Montreal, has been appointed Assistant Superintendent, District 4, Eastern Division, vice T. Collins, Assistant Superintendent, Districts 2 and 4, transferred to District 2. Office, Ottawa, Ont.

W. W. Benny, heretofore Resident Engineer at White River, Ont., has been appointed Resident Engineer at Ottawa, vice H. C. Nelson, transferred.

T. Collins, heretofore Assistant Superintendent, Districts 2 and 4, Eastern Division, Smiths Falls, Ont., has been appointed Assistant Superintendent, District 2, Eastern Division. Office, Smiths Falls, Ont.

L. S. Rudder, heretofore Resident Engineer, District 3, Ontario Division, Toronto, has been appointed Resident Engineer, District 1, Ontario Division, Toronto, vice M. Kelly, transferred.

F. M. Rutter, heretofore Resident Engineer at Woodstock, N.B., has been appointed Resident Engineer, District 3, Ontario Division, Toronto, vice L. S. Rudder, transferred.

P. G. Cromar, Agent and General Yardmaster, North Bay, Ont., has been appointed acting Assistant Superintendent, District 1, Lake Superior Division, North Bay, Ont., during the absence of J. H. Hughes, appointed acting Superintendent at White River, vice W. B. Cronk, on leave.

J. McCallum, heretofore Assistant Superintendent, District 2, Lake Superior Division, White River, Ont., has been appointed Assistant Superintendent, District 1, Lake Superior Division, with jurisdiction over all maintenance of way matters. Office, Sudbury, Ont.

J. H. Hughes, Assistant Superintendent, District 1, Lake Superior Division, North Bay, Ont., has been appointed acting Superintendent, District 2, Lake Superior Division, vice W. B. Cronk on leave of absence. Office, White River, Ont.

M. Kelly, heretofore Resident Engineer, District 1, Ontario Division, Toronto, has been appointed Resident Engineer, District 2, Lake Superior Division, White River, Ont.

J. O. Norrie, heretofore cashier, General Passenger Agent's office, Atlantic Steamship Lines, has been appointed Travelling Passenger Agent, C.P.R. Atlantic Steamship Lines, Winnipeg, Man., vice H. A. Watson, resigned to enter the Allan Line s.s. service.

H. Bowen, heretofore shop engineer, has been appointed Chief Draughtsman, Mechanical Department, Winnipeg shops, vice A. C. Frith, resigned.

C. Gibhons has been appointed foreman, erecting shop, Winnipeg shops.

A. Lupton, heretofore gang foreman, has been appointed general night foreman, Winnipeg shops.

R. Quinn has been appointed foreman in tender shop in charge of road equipment, Winnipeg shops.

T. C. Miller has been appointed gang foreman, Winnipeg shops, vice A. Lupton, promoted.

R. A. Gamble, heretofore Fuel Agent, Alberta Division, Calgary, has been appointed Car Service and Fuel Agent, Saskatchewan Division. Office, Moose Jaw.

J. Davey, has been appointed Locomotive Foreman at Bredenbury, Sask.

B. Wanless has been appointed shop foreman at Sutherland, Sask.

M. Newlands, heretofore Roadmaster, District 3, Alberta Division, Macleod, has been appointed Roadmaster Red Deer Subdivision, Alberta Division, vice B. Reddick, transferred.

R. B. Bennett, K.C., has been appointed Counsel for the Province of Alberta. Office, Calgary.

G. A. Walker, heretofore of the company's legal department in Toronto, has been appointed solicitor for the Province of Alberta. Office, Calgary.

B. Reddick, heretofore Roadmaster, Red Deer sub-division, Alberta division has been appointed Roadmaster, Laggan sub-division, Calgary, Alta., vice J. McGreevy, transferred.

W. K. McLeod, heretofore Locomotive Foreman, West End shops, has been appointed Locomotive Foreman, East End shops, Calgary, Alta.

J. Mullen, heretofore Shop Foreman, Medicine Hat, Alta., has been appointed Shop Foreman, East End shops, Calgary, Alta.

R. S. Teague, heretofore Night Locomotive Foreman, has been appointed Locomotive Foreman, West End roundhouse, Calgary, Alta., vice W. K. McLeod, transferred.

J. Doig, heretofore shop foreman, Cranbrook, B.C., has been appointed night foreman, East End shops, Calgary, Alta.

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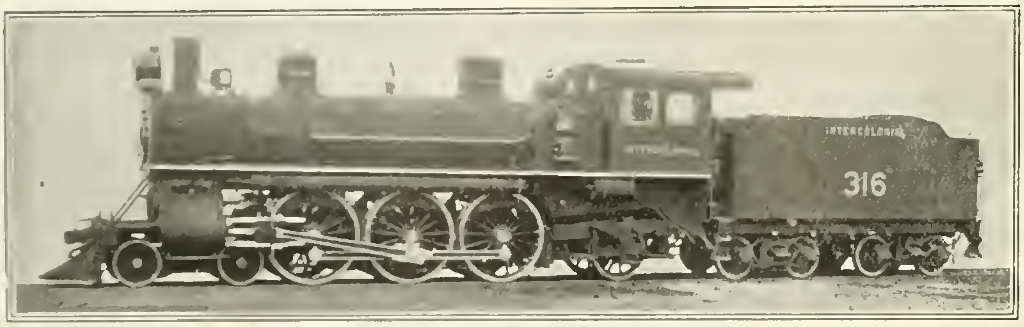

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J. McGreevy, heretofore roadmaster, Laggan sub-division, Alberta Division, Calgary, has been appointed Roadmaster, Medicine hat sub-division, vice —. Molson, resigned. Office, Medicine Hat, Alta.

D. Rushford has been appointed General Roadmaster, District 1, British Columbia Division. Office, Revelstoke, This is a new position.

J. Todd has been appointed Assistant Roadmaster, District 1, British Columbia Division. This is a new position. Office, Revelstoke.

A. J. Collinson, has been appointed Yardmaster at Revelstoke, B.C., vice W. Bell, who resumes his former position as conductor.

G. R. Steeves, heretofore employed as a fitter at Field, has been appointed Locomotive Foreman at Rogers Pass, B.C., vice T. Cassidy, who has been given employment as a fitter, at Revelstoke.

C. P. McGhee has been appointed Travelling Freight Agent, San Francisco, Cal., vice W. W. Smith, appointed District Freight Agent there.

Grand Trunk Pacific Ry.—The following agents have been appointed:—Pope, Man., H. R. Porter; Raymore, Sask., C. McMahon; Allan, Sask., R. E. Tully; Edson, Alta., M. F. Cullis; Hinton, Alta., E. W. Latta.

Grand Trunk Pacific Ry., Grand Trunk Pacific Coast Steamship Co.—C. E. Dewey, heretofore General Freight Agent, Central Vermont Ry., St. Albans, Vt., has been appointed General Freight Agent, G.T.P.R., and G.T.P. Coast Steamship Co His jurisdiction with respect to the G.T.P.R. is Port Arthur, Ont., and west. Office, Winnipeg.

F. W. Hopper, heretofore Travelling Passenger Agent, G.T.R., Detroit, Mich., has been appointed General Agent, Passenger Department, G.T.P.R., and G.T.P. Coast Steamship Co., at San Francisco, Cal Office, 399 Monadnock Bldg.

Grand Trunk Ry.—A. W. Davis has been appointed Locomotive Foreman at Stratford, Ont., vice A. J. Roberts, resigned.

W. R. Davidson, heretofore Trainmaster at Hamilton, Ont., has been appointed Trainmaster, with office at London, Ont., and C. H. Brown has been appointed Assistant Trainmaster, with office at Hamilton, Ont. Their jurisdiction extends over Districts 16, 17 and 24, District 18, Komoka to Glencoe, District 19, Glencoe to Kingscourt Jct., Port Colborne to Welland Jct., Port Robinson to Port Dalhousie, and District 20, Tilsonburg Jct. to Harrisburg. Reports and correspondence, unless otherwise ordered, are addressed to the Trainmaster at London. The office of Assistant Superintendent, previously held by C. G. Bowker, and that of Trainmaster at Hamilton, have been abolished.

C. S. Cunningham, heretofore joint Superintendent, G.T.R. and Wabash Rd., Southern Division, St. Thomas, Ont., has been appointed acting Superintendent, Western Division, vice F. W. Egan, who has been granted leave of absence on account of ill health. Office, Detroit, Mich.

The following agents have been appointed:— Aubrey, Que., F. T. Fraser; Coaticook, Que., (outside), C. G. Johnson; Lansdowne, Ont., W. H. Hutchison; Darlington, Ont., P. Fox; Goodwood, Ont., J. G. Holman; Aurora, Ont., W. A Masters, (acting); Milton, Ont., T. Coulter; Alliston, Ont., J. A. Cusack; Blackwell, Ont., A. M. Cusack; Stoney Point, Ont., F. W. Shearing; Belle River, Ont., F. Ouellette; Brantford, Ont., N. J. Dore; Walkerton, Ont., S. D. Croft; St. Catharines, Ont., (outside) E. O. Foster; Suspension Bridge, N.Y., A. R. Draper.

Grand Trunk Ry.-Wabash Rd.—C. G. Bowker, heretofore Assistant Superintendent, Middle Division, G.T.R., London, Ont., has been appointed joint Superintendent G.T.R.-Wabash Rd., vice C. S. Cunningham, appointed acting Superintendent G.T.R. Western Division. Office, St. Thomas, Ont.

New York Central Lines.—J. W. Daly, heretofore Assistant Passenger Traffic Manager, Lake Shore and Michigan Southern Ry., Dunkirk, Allegheny Valley and Pittsburgh Rd., Lake Erie, Alliance and Wheeling Rd., Michigan Central Rd., Cleveland, Cincinnati, Chicago and St. Louis Ry., Cincinnati Northern Rd., Lake Erie and Western Rd., Toledo and Ohio Central Ry., Chicago, Indiana and Southern Rd. and Pittsburgh and Lake Erie Rd., Chicago, Ill., has been appointed Passenger Traffic Manager, same lines, vice W. J. Lynch, resigned to engage in other business. Office, Chicago, Ill.

New York Central and Hudson River Rd.—G. H. Alexander has been appointed Superintendent of Car Service, with direct charge of freight car distribution and tracing of freight, also car records, car demurrage, mileage and per diem accounts, and such other duties as may be assigned to him. Office, Grand Central Terminal, New York.

Temiskaming and Northern Ontario Ry.—A. J. Roberts has been appointed General Foreman, North Bay shops, Ont., vice G. Battley, acting General Foreman, who has returned to his former position as Air Brake Inspector.

Jno. Walters, heretofore chargeman, E.F. and G. E. Fauquier, National Transcontinental Ry. contractors, Cochrane, Ont., has been appointed Locomotive Foreman, T. and N.O.R., Cochrane, vice L. G. Fleming, resigned.

White Pass and Yukon Route.—O. L. Dickeson, heretofore Special Inspector of Transportation, Chicago, Burlington and Quincy Rd., Chicago, Ill., has been appointed Vice President White Pass and Yukon Route. Office, Vancouver, B.C.

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Recent Dominion Legislation.

A second lot of acts of the Dominion Parliament for the current session were assented to May 18, of which the following affect transportation interests:—

ALBERT AND MONCTON RY.—Incorporation.

ALBERTA ELECTRIC RY.—Incorporation.

ALBERTA RY. AND IRRIGATION CO.—Respecting additional lines to be built.

ALGOMA CENTRAL AND HUDSON BAY RY.—Extending time for construction, and granting power to build additional line.

ALGOMA EASTERN RY.—Changing title of Manitoulin and North Shore Ry. to the A.E.R., and extending time for building authorized lines.

ALSEK AND YUKON RY.—Extending time for construction.

BRITISH COLUMBIA AND DAWSON RY.—Incorporation.

BRITISH COLUMBIA AND WHITE RIVER RY.—Incorporation.

BUFFALO, NIAGARA AND TORONTO RY.—Extending time for construction.

CANADIAN NORTHERN ONTARIO RY.—Granting aid in respect of the line from Montreal to Port Arthur.

CANADIAN PACIFIC RY. — Extending time for construction of certain branch lines, etc.

CARIBOO, BARKERVILLE AND WILLOW RIVER RY.—Extending time for construction.

CHATHAM, WALLACEBURG AND LAKE ERIE RY.—Extending time for construction.

GRAIN GROWERS' GRAIN CO.—Act of incorporation, authorizing company to erect or purchase elevators..

GRAND TRUNK RY.—Amending act passed at present session respecting guarantee of securities of G.T. Western Ry.

HUDSON BAY, PEACE RIVER AND PACIFIC RY.—Incorporation.

HURON AND ONTARIO RY.—Extending time for construction.

IMPERIAL STEAMSHIP CO.—Incorporation.

IMPERIAL TRACTION CO.—Incorporation.

INTERNATIONAL RY. — INTERNATIONAL Traction Railways.—Defining ownership of certain lines.

INTERNATIONAL WATERWAYS. — Relating to establishment and expenses of International Joint Commission under Waterways Treaty of Jan. 11, 1909.

JOLIETTE AND LAKE MANUAN RY.—Extending time for construction.

LAKE ERIE AND NORTHERN RY.—Incorporation.

MONTREAL PARK AND ISLAND RY.—Extending time for construction.

ONTARIO AND ABITIBI RY.—Incorporation.

ONTARIO-MICHIGAN RY.—Incorporation.

PACIFIC AND HUDSON BAY RY.—Incorporation.

PACIFIC AND PEACE RIVER RY.—Incorporation.

PEOPLE'S RY.—Declaring company's undertaking to be a work for the general advantage of Canada, and authorizing building of additional lines.

QUEBEC AND NEW BRUNSWICK RY.—Extending time for construction.

RAILWAY ACT.—Amending the Railway Act.

RAILWAYS AND CANALS.—Amending act relating to Department of Railways and Canals.

RICHELIEU AND ONTARIO NAVIGATION CO.—Providing for increase in capital stock.

ST. JOHN VALLEY RY.—Authorizing Dominion Government to lease a certain line of railway in New Brunswick.

SASKATOON AND HUDSON BAY RY.—Incorporation.

SIMCOE, GREY AND BRUCE RY.—Incorporation.

SONGHEES INDIAN RESERVE.—Providing for transfer of the Songhees Indian Reserve, Victoria, B.C., in connection with railway extensions.

STEAMSHIP SUBSIDIES.—In relation to subsidies granted to certain lines of steamships.

TORONTO HARBOR. — Amending and consolidating acts.

WATER-CARRIAGE OF GOODS.—Amending act of 1910.

WESTERN ALBERTA RY.—Extending time for construction.

WESTERN CANAL CO.—Incorporation.

WESTERN CENTRAL RY. — Extending time for construction.

The first list of acts assented to appeared in our May issue, pg. 401.

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Alberta and Great Waterways Ry.—A number of claims have been made against the Alberta Government for damages alleged to have been caused through the confiscation of the amount realized by the sale of the bonds guaranteed by the Government. The claims have been filed by the company, and by others who had been given contracts in connection with the carrying out of the company's projects. "Those of which I have knowledge," a Toronto lawyer is reported as stating, "will amount to about $2,500,000, and there may be others."

Albert and Moncton Ry.—In the passing of the bill through Parliament the list of provisional directors was amended, by leaving out the names of the following:— Hon. P. McSweeney, Moncton; J. W. Domville, Rothesay; J. D. Mackenzie, London, Eng., and by adding the name of R. L. Johnston, St. John, N.B. This leaves the following as provisional directors:— F. V. Wedderburn, T. M. Robinson, R. L. Johnston, St. John; W. S Gardner, E. Domville, Montreal; J. C. D. Mackenzie, J. E. Hawkins, London, Eng.

Temiscouata Ry.—Profit on operation for March, $3,019. Aggregate profit for three months ended Mar. 30, $1,770.

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St. John Valley Railway.

The bill authorizing the Dominion Government to acquire by lease a line to be built along the St. John Valley under guarantees by the New Brunswick Government, and to operate it as part of the Intercolonial Ry. system, was read a third time in the House of Commons, May 4. The only amendment of moment made in the bill in passing through the House was that the Dominion Government will provide the equipment necessary for its operation. The original proposition was that the Dominion Government would lease the line when built and equipped.

An exhaustive report as to the surveys made under the direction of the New Brunswick Government by D. F. Maxwell as Chief Engineer, has been laid before the Legislature. In starting the surveys it was decided to divide the whole outlined route into the following divisions:—Grand Falls to Woodstock, about 78 miles; Woodstock to Fredericton, about 65 miles; Fredericton to St. John, about 85 miles, with alternative lines to Westfield and Welsford, some 50 miles additional; and to make surveys of such portions of the route as had not heretofore been surveyed for railway purposes. The divisions of the route between Grand Falls, Woodstock and Fredericton have been surveyed several times, the latest being in 1906-07, by G. C. Dunn, for the National Transcontinental Ry. Commissioners. The records of this survey were placed at Mr. Maxwell's disposal. The profiles of this survey show that gradients of 0.4% going east, and 0.6% going west were adhered to, and the plans show that the location followed closely the St. John River, crossing over to the western bank at Andover, and thence on through Woodstock, along the western bank to Fredericton.

Three parties of 16 men each were put in the field, the first working from Fredericton via Gagetown to St. John, and taking the alternative route to Westfield. The second party worked over the part of the route lying between Woodstock and Grand Falls, which would pass through Centreville and Lakeville, and connecting with the N.T. Ry.-St. John Valley survey referred to, near the crossing of the River du Chute. The third party worked over the alternative route from Welsford, on the C.P.R., to a connection with a line run by the first party in the parish of Hampstead.

The acts referring to the aid to be granted towards the construction of the line state in one part that it is to have gradients not to exceed 0.4%, and in another part that if the line is built from Andover or other points in Victoria county, the gradients are not to exceed those of the Intercolonial Ry. Although the gradients on the Intercolonial Ry. do not exceed 1%, they were not compensated for curvature, and must be considered greater than 1% in proportion as the radii of curves vary in length. These facts were all taken into consideration in making the surveys, and in suggesting alternative routes.

The principal line surveyed was from Fredericton to St. John, in continuation of the survey made for the National Transcontinental Ry. The route as laid out starts from near the C.P.R. station in Fredericton, parallels the C.P.R. on the upper side for about two miles, crossing that line at grade at the Victoria Mills siding, then follows the St. John River, keeping where possible above the line of extreme high water flowage, through Lincoln, Oromocto, Burton Court House, Cambridge, Upper Gagetown, Gagetown proper, Hampstead, and Evandale, in Kings county. In order to locate the shortest possible line to St. John, with Courtenay Bay as the objective point, the route crosses to the left bank of the St. John River at The Mistake, or over Graham Creek, Kingston Head, along Kingston Creek, and through Kingston to the Kennebeccasis River, which is crossed near Gondola Point Ferry. The surveyed route then follows the left bank of the Kennebeccasis River through Rothesay, Renforth, and Torryburn, then over the Intercolonial Ry. by an overhead crossing near Brookfield station. The line enters St. John via the Marsh Creek, to the head of Courtenay Bay, and Haymarket Square. This route is 71 miles long, but may be slightly shortened on final location, and added to the mileage of the Grand Falls-Fredericton surveys previously made, makes a total of 207 miles between Grand Falls and St. John. This is no doubt the shortest possible route for a railway that can be obtained with the continuous low gradients acquired between the two points named.

This route, as between Fredericton and St. John has the disadvantage of having two expensive bridges, one over the St. John River at Evandale, and the other over the Kennebeccasis River at Gondola Point, as also the possible construction of a tunnel of about 3,500 ft. through Kingston Head. In view of the great cost of bridging the Kennebeccasis River at Gondola Point, an alternative line was run from near Kingston to an easier point of crossing the river near Gondola Point, but that would add three miles to the length of the route, and involve the building of another tunnel of 3,500 ft. through Tower Hill. It would be possible to use the Intercolonial Ry. from Rothesay, which would save about eight miles of rather expensive construction.

The alternative line to Westfield starts from the above line near Evandale, crosses the Nerepis River near its mouth, and joins the C.P.R. about a mile west of Westfield Beach station, a distance of 20.5 miles. This would make the distance from Fredericton to St. John, 85 miles. This alternative route would involve the construction of a bridge 3,000 ft. long over the Nerepis River.

For the survey of another alternative line, described in the act as being "to a point on the C.P.R. between Westfield and Welsford," it was necessary to leave the river at a point below Gagetown. After making an inspection of the country it was apparent that it was impossible to obtain a 0.4 gradient on either of the two possible routes, and a 1% gradient has been adopted. The first route, while the shorter, would pass largely through woods and serve no local interests, while the other, starting from the C.P.R. near Welsford station, follows the right bank of the Nerepis River to Armstrong's Corner, then crossing to the left bank reaches the summit at a distance of 19 miles and an elevation of 420 ft., then crossing the Little River to Central Hampstead, 25 miles to a connection with a line run by the first party, making the distance from Fredericton to Welsford 67 miles.

On the Grand Falls-Woodstock end of the route, a line was run through Centreville and Lakeville, some five or six miles from the river, but a 1% gradient had to be adopted. This survey was from Woodstock to Lakeville, 16 miles, and to Centreville, a total of 23.5 miles. The work done shows that it may be possible to get a 0.4% gradient by one of two routes, but by adding two or more miles to the distance. On the one route the distance between Grand Falls and Woodstock would be 76 miles, with a summit of 560 ft.; and the other would make the distance 74 miles with a summit of 585 ft. Both these lines would make connections with the National Transcontinental Ry. survey, already referred to. This survey is followed between Clearview and Grand Falls for 37 miles, and will be a very heavy one to construct owing to the bridges necessary over the St. John, Salmon, and other rivers. The act authorizes a connection with the National Transcontinental Ry. at some other point than Grand Falls, and it is possible that a cheaper connection might be made by running a line to New Denmark, but the distance would be increased somewhat.

Plans and profiles of all the surveys have been made, but the engineers do not make any recommendations in favor of any one of them, leaving it to the Government to decide as to what will be done. There is appended to the report an estimate of the cost of the work upon the several surveys, arranged according to the divisions already mentioned.

These estimates are as follows:—

WOODSTOCK-GRAND FALLS DIVISION.

Grand Falls to Clearville along line of N.T. Ry., survey, 37.5 miles, standard gradients, $52,000 a mile, or $1,950,178.

Clearville to Centreville, via Antworth Summit, 14 miles, Intercolonial Ry. gradients, $36,347 a mile, or $536,861.

Bairdsville to Centreville, via Royalton Summit, 20.75 miles, Intercolonial Ry. gradients, $35,000 a mile, or $717,055.

Centreville to Woodstock, via Lakeview, 23 miles, Intercolonial Ry. gradients, $30,660 a mile, or $705,310.

Grand Falls via Antworth Summit, Centreville and Lakeville to Woodstock, 74 miles, $43,140 a mile, or $3,192,349.

WOODSTOCK-FREDERICTON DIVISION.

From Woodstock to Fredericton via N.T.R. surveys, standard gradients, 62 miles, $40,660 a mile, or $2,520,965.

FREDERICTON-ST. JOHN DIVISION.

From Fredericton to Evandale, 48 miles, standard gradients, $32,600 a mile, or $1,564,183.

From Evandale, via Gondola Point to St. John, 23 miles, standard gradients, not including bridges, $42,370 a mile, or $974,504. Estimated cost of bridge over St. John River at Evandale, $528,000; estimated cost of bridge over the Kennebeccasis River at Gondola Point, $1,317,625.

From Evandale, via Perry Point to St. John, 26 miles, standard gradients, including all bridges, $75,340 a mile, or $1,959,893.

From Evandale to Westfield, C.P.R. connection, 19.5 miles, standard gradients, $40,000 a mile or $780,239.

From Fredericton to Hampstead, 42 miles, standard gradients, $31,870 a mile or $1,338,570.

From Hampstead to Welsford, C.P.R. connection, 24 miles, Intercolonial gradients, $30,473 a mile or $761,835.

These different surveys show altogether two possible routes between Grand Falls and St. John, and two to a connection with the C.P.R., the estimates being:—

From Grand View via Gondola Point to St. John, including all bridges, 207 miles, $48,830 a mile, or $10,107,626.

From Grand Falls via Perry Point to St. John, including all bridges, 210 miles, $43,980 a mile, or $9,237,390.

From Grand Falls to C.P.R. connection at Westfield, 203.5 miles, $40,000 a mile, or $8,057,736.

From Grand Falls to C.P.R. connection at Welsford, 202 miles, $38,000 a mile, or $7,733,719.

In connection with the suggestion that a line be built from Andover, with Intercolonial gradients, the following estimates are submitted:—

From Andover via Centreville, Lakeville, Woodstock, Fredericton, Gagetown and Perry Point to St. John, 185 miles, including all bridges, $40,370 a mile, or $7,467,319.

From Andover to C.P.R. at Westfield, 178 miles, including all bridges, $35,750 a mile, or $6,380,558.

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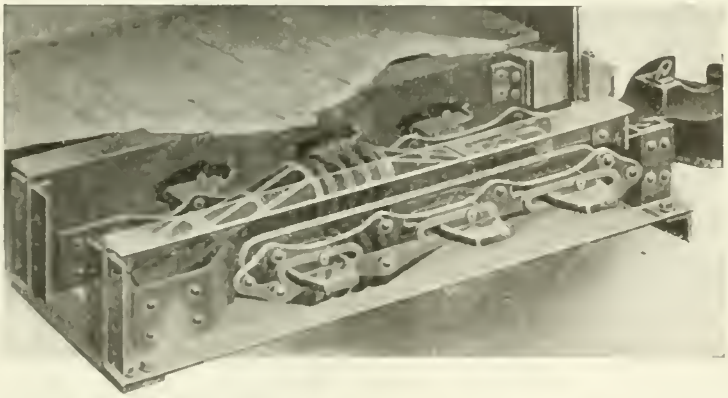

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From Andover to C.P.R. at Welsford, 177 miles, including all bridges, $34,920 a mile, or $6,181,541.

In conclusion, the Chief Engineer, D. F. Maxwell, points out that sec. 37 of the act authorizes the Government to grant running rights over the line, to any through railway seeking a connection with St. John, L'Etang, St. Andrews, or other port in Charlotte County, and suggests that it would not be advisable to build a railway along the St. John Valley, particularly below Woodstock, except with gradients not exceeding 0.4%, as the saving of cost in building a road with the higher gradients, would not be at all proportional to the real value of the lines for transportation purposes. "The importance of the St. John Valley as a route for a great railway cannot be over-estimated," he adds, "and the proposition to build a railway along it, is not merely local, but national in both scope and character, and the line is now within measurable distance, when more than one transcontinental railway, entering this valley by the national road, now building, or by what may be a shorter route across the State of Maine, and seeking an ocean terminus at St. John, must of necessity traverse some portion of this line now under consideration." (April, pg. 352d.)

American Civil Engineers Pocket Book

There has just been issued from the press the first edition of a new pocket book for the use of civil engineers, to which the above title has been given. The editor-in-chief is Mr. Merriman,M.A. Soc. C.E., and his staff consisted of 12 associate editors, all of whom are engineers of high standing, or engaged in lecturing on engineering subjects at different universities in the United States. In the preface the editor says a pocket book must be prepared so that facts, formulas, tables and methods can be found more quickly, than by referring to treatises, and that the information contained in it should cover the ground with great conciseness and clearness, and be thoroughly up-to-date. As a result the new pocket book which has been produced, contains nearly all the topics to which civil engineers desire most often to refer, the matter is so condensed that a very great many subjects are dealt with, but the presentation of all of them is clear and full.

The work is divided into 13 sections, containing 75 chapters, 620 articles, 495 tables, and 944 numbered figures, which the editor estimates to be equivalent to 1,200 ordinary cuts, as in many cases several similar figures are grouped together. Section one gives tables for approximate mathematical computations; section two to 11 inclusive. deal with civil engineering proper; sections 12 and 13 treat of mathematics, mechanics, physics, meteorology and weights and measures. These thirteen sections fill 1,314 pages, and they are followed by a detailed alphabetical index of 66 pages.

The volume is thoroughly well printed, on thin paper, of convenient size, is bound in morocco, and is sold at $5 net. The publishers are John Wiley & Son, New York, who are represented in Canada by the Renouf Publishing Co., Montreal. It can be obtained through the Railway and Marine World's book department.

The G.T.R. has decided to operate a motor car service on its line between Black Rock and Port Colborne, Ont., during the summer, for the accommodation of the residents at the various beaches.

The Board of Railway Commissioners will take up at Ottawa, on June 6, the question of fixing the length of sections to be worked by section gangs on railways, and the minimum number of men to compose such gangs.

Too Late for Classification.

C.P.R.-Esquimalt and Nanaimo Ry.—On his return to Vancouver from Montreal recently, R. Marpole. General Executive Assistant, is reported to have stated that it is intended to place survey parties in the field at once north of Comox and north of Campbell River to finally revise the location along the proposed extensions. The exact final location of the extension north of Black Creek, between Courtney and Campbell River will depend a good deal on the result of the examination now being made of the mineral resources of the Quinsam Lake district.

C.P.R.-Georgian Bay and Seaboard Ry.—The Board of Railway Commisioners has authorized the company to connect its tracks with those of the Lindsay, Bobcaygeon and Pontypool Ry., near the junction at mileage 72.91.

C.P.R. Second Track Work, Near Montreal. — The company's divisional forces are building the second track between Mile End and Quebec Jct., and between South Jct. and Adirondack Jct. The first of these pieces of work is expected to be completed in June. On the second there is a new double track steel bridge under construction, the steel superstructure for which is being erected by the Dominion Bridge Co.

Dominion Pacific Ry.—Application is being made for the incorporation of a company with this title to build a line from the International boundary in range 23 west of the fourth meridian, northwesterly via Pincher Creek to Cardston, to the C.P.R. Crows Nest branch near Lundbreck, thence northerly and west of the Porcupine Hills to Calgary, and on to Edmonton, by a route passing west of Snake Lake, Gull Lake, and Pigeon Lake; thence generally northwesterly to Fort St. John, B.C.; with a branch line from Pincher Creek southwesterly along the South Fork of the Old Man River to the boundary of British Columbia. O. E. Culbert, Ottawa. is solicitor for applicants.

Grand Trunk Pacific Ry.—The Board of Railway Commissioners has authorized the company to operate trains over its line between Edmonton and Prairie Creek, Alta., with a speed limit of 15 miles an hour west of Edson to end of track.

G.T.R. General Betterments, Etc.—W. G. Brownlee, Manager of Transportation, is reported as stating in an interview May 20, that nothing more will be undertaken in Toronto this year beyond what has been put in hand. The plans for the Toronto viaduct are being prepared and will be filed with the Board of Railway Commissioners very soon. A roundhouse is to be built at Midland, Ont., and a good deal of betterment work will be done all over the Ontario lines. The work, however, in most cases will be of the ordinary character, without involving new construction.

Intercolonial Ry.—An Ottawa press dispatch states that the total income for the financial year ended Mar. 30, was $9,863,783, and that after deducting operating expenses. and the following amounts; $600,000 for equipment account, $25,000 for revenue account on equipment, $76,000 to cover cost of replacing shops destroyed by fire at Campbellton, N.B., and $5,000 a month expenditure on new fire acount, there remains a surplus of $272,712.

Intercolonial Ry.—The general office accommodation at Moncton, N.B., is to be increased by the erection of an extension of the present building. It will be 139 by 57 ft., three stories with mansard roof, and will be built of red pressed brick with grey freestone trimmings. An Ottawa dispatch, May 23, says the contract has been let to Rhodes, Curry & Co., of Amherst, N.S.

National Transcontinental Ry.—Replying to questions in the House of Commons May 18, the Minister of Railways said the total expenditure on the line from Quebec to Winnipeg to Feb. 28, was $69,983,500; and the estimated amount required to complete the line was $43.-052,850 while the total expenditure on the line from Quebec to Moncton to the same date was $26,634,800, the estimated amount required to complete it being $5,668,550. The cost of right of way for terminals in Quebec city, and the expenditure on the Quebec Bridge are not taken into account in these figures.

Temiskaming and Northern Ontario Ry.—J. L. Englehart, Chairman of the T. & N.O. Ry. Commission, is reported as stating that with a view of meeting the demand for a line into the Gowganda, a short time ago he proposed to some New York capitalists that if they furnish the capital, the Commission would build the branch and operate it, turning over to the investors 62½ or 65% of the total receipts. He had not received any reply to the offer, which was the best the Government could do, as it would not be right to use Government funds to build a line which had not for its object the opening up of areas of agricultural land.

Tobique and Campbellton Ry.—A press report from Perth, N.B., May 17, states that an arrangement has been made by which the C.P.R. will guarantee the 5% bonds of the T. and C. R. Co. to the amount of $15,000 a mile, in aid of the building of the line from Plaster Rock to Campbellton, N.B. Plaster Rock is the present terminus of the C.P.R. Tobique Valley line. J. E. Stewart, Andover, N.B., the principal promoter of the company, stated recently in an interview that the company would build the line giving the C.P.R. a mortgage, and that the C.P.R. would operate the line for 40% of the total receipts. The location surveys were made four years ago, and provided a route with a maximum gradient of 1.5 %.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—The Board of Railway Commissioners approved of the amended location from mileage 0 to 12, and mileage 16 to 17, from Coquihalla Summit, B.C.

W. Stapleton. District Passenger Agent, Canadian Northern Railway, Saskatoon, Sask., writes:— "I find The Railway and Marine World exceedingly useful."

The returns for the Cuba Rd., of which Sir Wm. C. VanHorne is President, for the past nine months, show a surplus of $584,697, an increase of $158,548 over corresponding period of previous year.

In the litigation respecting the proceeds of the guaranteed bond issue of the Alberta and Great Waterways Ry., the Provincial Government's appeal against the order joining the Canada West Construction Co. and the A. and G.W. Ry. Co., as defendants along with the Royal Bank, has been dismissed.

The Western Canada Railway Club's annual meeting was held at Winnipeg, May 8, when a paper was read by J. T. Warde, chief clerk, General Car Foreman's office, C.P.R., on the prevention and cure of hot boxes and the economy of proper and efficient oiling of rolling stock. The following officers were elected for the current year:— President, R. R. Neild, General Foreman Locomotive Shops. C.P.R.; Vice President, S. J. Hungerford, Superintendent of Rolling Stock, C.N.R.; Second Vice President, T. Duff Smith, General Fuel Agent, Grand Trunk Pacific Ry. The honorary officers and Secretary and Treasurer were re-elected.

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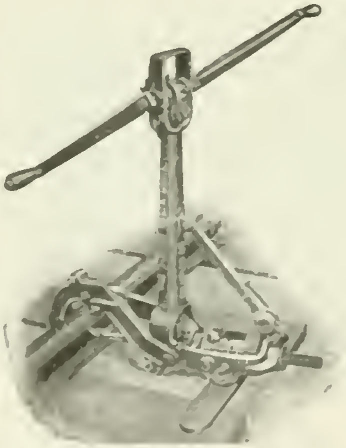

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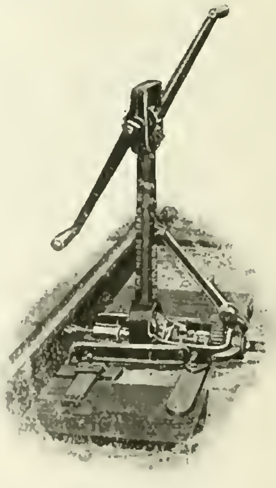

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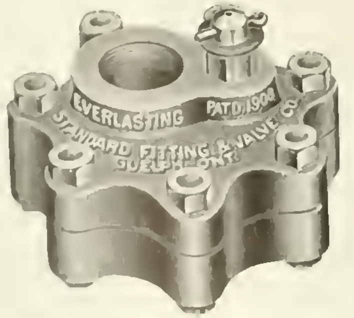

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Maintenance and Operating Features of the Electrified St. Clair Tunnel.

The G.T.R. St. Clair tunnel has been electrically equipped since May 18, 1908, and the severest requirements of the service are said to have been met very successfully by the single-phase system. The tunnel is a single track bore, lined with a cast-iron shell, and has an inside diameter of about 19 ft. The length of the tunnel from portal to portal is 6,032 ft. The open tunnel approach on the Port Huron side is slightly over 2,500 ft. in length, while that on the Sarnia side is nearly 3,300 ft. in length. The total distance between the Canadian and United States summits is 12,000 ft., or about 2¼ miles. The grade on the tunnel approaches and the shore sections of the tunnel is 2%, while that in the flat middle section of the tunnel, about 1,700 ft. in length, is of 0.1% downward toward the east to provide for drainage.

The specifications for the electrification of the tunnel service stipulated, in addition to various guarantees regarding efficiencies at different parts of the system and of the system as a whole, that the installation when completed should be capable of hauling a 1,000-ton train through the tunnel from terminal to terminal in 15 minutes, that in doing so the maximum speed should not exceed 25 m.p.h., and that the minimum speed when ascending a 2% grade should not be less than 10 m.p.h.

The single-phase system was chosen for this work on the score of economy in operation. Preliminary figures showed the first costs for the two systems to be about equal if no battery were installed. The estimates including batteries were slightly favorable to the d.c. system. However, the increased first cost with a battery would have been large in either case because of the nature of the load with frequent high peaks and short intervals during which charging could be done. The guaranteed efficiencies of the two systems without batteries indicated a considerable saving in the cost of power by the use of the a.c. system. The distribution losses and the use of current for rheostatic control lowered the relative efficiency of the d.c. system. Preliminary guaranteed figures for the power consumption for one locomotive trip hauling a 1,000-ton train through the tunnel were 141 kw-hours for the single-phase system. In practice, considerably better figures of performance than those guaranteed have been obtained. The electrical equipment includes six three-motor locomotive units fed with 3,300-volt, 25-cycle current generated in a steam turbine station and distributed by a catenary supported copper wire.

The St. Clair Tunnel Co. has furnished some comparative figures for steam and electrical operation which are of interest, indicating as they do in a general way the relation between important items of operating costs. These data refer to two years operation—one before and one after electrification. Although the amount of traffic handled during these two years was not identical, the service performed was sufficiently similar for purposes of approximate comparison of figures.

The cost of coal with electrical operation was 39% of the cost of coal under steam operation. A part of this saving is due to the greater economy of the electrical system so far as coal consumption is concerned, while another large part of the saving is due to the fact that it was necessary to burn anthracite coal in the steam locomotives that formerly operated through the tunnel, while ordinary run-of-mine or even slack coal is used for power plant operation. The total service charges, including all items that are charged by the railway company against locomotive service, but not including fixed charges, indicate that this charge under the electrical operation is about 60% of the charge under steam operation. If, however, the fixed charges, including both interest and depreciation on equipment, are added in each case, it is found that the total charge for locomotive service under electrical operation is approximately 84½% of the charge under steam operation. If a comparison be made of fuel costs under steam operation with the cost of electrical energy delivered at trolley under electrical operation, it is found that, disregarding fixed charges, the cost of power delivered to the locomotives under electrical operation is 69% of the cost of the fuel under steam operation. If, however, the fixed charge (and depreciation) due to the initial investment for the electrical generating plant and distributing system be added to the charge for electricity delivered at the locomotive, this charge then practically equals fuel cost under steam operation. This indicates that the saving is effected in other items than that of cost of power delivered to the two locomotives in the form of electrical energy in one case and of fuel in the other. One of the large items in this saving is in the maintenance and repairs to locomotives, which for the years under comparison indicates the electrical cost to be about 55% of the steam cost. Other items chargeable to steam operation, such as the coaling of locomotives, water supply, etc., do not appear at all in the charges for electric locomotives.

Three locomotives are available for use in the tunnel and switching service. At present the entire traffic is handled by two locomotives, each of which consists of two half-units. The half-units are duplicates in every respect and are equipped with the multiple-unit system of control. Each half-unit is mounted on three axles driven through gears by three single-phase motors with a normal rating of 250 h.p. Inasmuch as the motors have a very liberal overload rating it is possible to develop 2,000 h.p. with two half-units. The locomotives are powerful enough easily to start a 1,000-ton train on a 2% grade. In a test made on a half-unit using a dynamometer car it was found that a single half-unit would develop a 43,000-lb. draw-bar pull before slipping the wheels. The locomotives have a maximum speed of 35 m.p.h., but they are never called upon to operate faster than 25 m.p.h. to handle the full number of trains. The general dimensions of a locomotive half-unit are as follows:

Length over all	23 ft. 6 in.
Height from top of rail to top of pantograph bow when lowered	14 ft. 11 in.
Width of cab over all	9 ft. 8 in.
Total weight of half-unit	67½ tons.
Length of rigid wheel base	16 ft.
Diameter of driving wheel	5 ft. 2 in.
Normal speed with 100-ton train ascending 2% grade	10 m.p.h.
Normal speed on level track	25 m.p.h.

The electric locomotives have required very little change in design or unusual maintenance work. A two-track section of a roundhouse in the Sarnia yards has been equipped as an inspection shed for the electric units. The locomotives may be taken in or out of this shed at either end.

An annunciator system has been installed here in connection with the 3,300-volt trolley wire to provide against accidents. Ordinarily the section of trolley wire inside of the inspection shed is disconnected from the trolley line outside. When current is desired to move or to test a car a hook switch installed about 10 ft. above the floor at one end of the building is thrown to connect the interior and exterior trolley wires. Within the box of this switch a ground connection is provided so that when the knife of the switch is pulled open, to cut the shed trolley off from the line, the trolley wire within the car house automatically is grounded. An annunciator bell rings at 15-second intervals to warn the men while the 3,300-volt trolley is alive.

A regular programme of inspection is followed and each half-unit is held in the inspection shed for 12 hours every three days. In addition to this short inspection each half-unit is held for more thorough care for 24 hours once every 24 days. Thus the units are in service 80% of the time, which is considerably more than is possible with steam locomotives. The roundhouse force includes a foreman, two day and one night inspectors, one wiper and one overhead lineman whose services are available either here or in trolley work. In making one of the regular 24-day half-unit inspections the various parts of the unit are inspected and checked off according to the programme laid down on the inspection card. The inspection, which is made every three days, includes the following: Back of switch groups; intake strainers; fan and main motor nettings; jumper pins (these are spread to insure good contact); foot buttons which include bell and two sanders; poppet valves (main and emergency reservoirs); reducing valves; overload trip relay; hand air pump; hand brake (this is well lubricated and kept in good operating condition); pantograph tension and operating mechanism. The inspectors keep a log of all the work done and make daily reports to the superintendent.

The change from steam to electric service was made without any undue delay. At the beginning of electric operation when the alternate steam and electric service was operated, the electric locomotives were taken into the shop after each 18-hour run and thoroughly inspected. After the first few weeks of service, when it was quite certain that all parts of the equipment were operating smoothly, the regular inspection period of once every three days was adopted.

It has been found necessary to turn the locomotive tires once every 12 months. This is on account of flange wear rather than hollowing of the tread. The flange wear is attributed to the low centre of gravity of the unit. One every 30 days each locomotive is turned around so that the flange wear may be evenly distributed. The motor of journal bearings have given no trouble. The armature of each of the three motors drives its axle through a pinion with 16 teeth and a gear with 85 teeth. The life of these pinions is from 50,000 miles to 60,000 miles and some have run 64,000 miles. None of the gears has yet been renewed after two years service. Whenever a pinion has run more than 30,000 miles and the wheels are removed for any purpose, a new pinion is put on so that the wheels may not have to be removed unnecessarily.

The standard Westinghouse galvanized sheet-steel pantograph shoe is used, one on each half-unit. The average life of these shoes is about 3,000 miles. The shoe is adjusted to have a pressure against the wire of 7½ lb. in the winter and 5 lb. in the summer. These low contact pressures are made possible by the limited speed of 25 miles an hour at which the trains operate. Shoes with copper wearing surfaces were tried with the idea that they would not wear the wire, but as no apparent advantage was realized and as their life was much shorter than that of the galvanized steel shoes, the trial was abandoned. The steel shoes apparently do not wear the wire so much as the copper shoes. This is attributed to the reduction in friction when dissimilar metals are used. A spring balance is used when adjusting the pantograph tension. Such adjustments are needed very infrequently, but if any undue flashing is noted during operation the tension is inspected and usually it is found that the pantograph spring has become weak or that the joints in the pantograph are stiff.

When the electric locomotives were first put into service classes of instruction were held every afternoon for two months. The men who had been operating the steam locomotives attended

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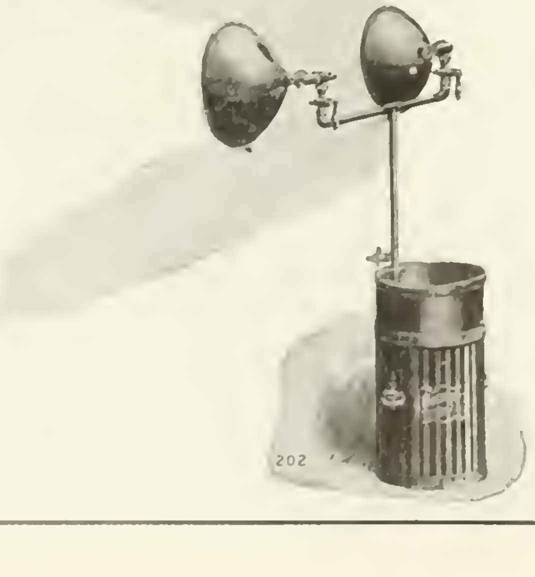

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these classes when off duty. Later when the school work was concluded the steam locomotive engineers were put in charge of the new electric locomotives and instructors rode with them. The men who formerly operated the steam locomotives and now run the electric locomotives are enthusiastic over the change, even though their rate of pay is slightly reduced by their being required to work longer hours. The locomotive crews are made up of two men, an engineer and an assistant. The assistant spends his time in looking over the electrical apparatus in the cabs of the two half-units while they are in operation, and when not thus engaged he rides in the rear half-unit. Formerly two brakemen were required for each train passing through the tunnel. The smoothness with which the trains are handled has made it safe to operate with but one brakeman.

A round trip through the tunnel, including the terminal switching when a train is handled in either direction, requires a run of about 10 miles. The freight trains are made up so as not to exceed 1,000 tons each and all cars are inspected before passage through the tunnel. This is necessary for the prevention of accidents and because the tunnel is the dividing section between two main divisions of the G.T.R., one in Canada and one in the U.S. While the freight trains stand in the yards for inspection the air-brake piping system is charged from a yard air service pipe line which extends through the tunnel and is fed by an electrically operated air pump at Sarnia. The charging, which is done before the electric locomotive couples on to the train, requires no additional layover because the train must stand in the yard to be inspected, and use is made of the yard air supply system so that the air-compressor equipment on the locomotive may be relieved of the unnecessary duty of charging a long freight train just prior to starting through the tunnel.

Under normal conditions passenger trains are hauled through the tunnel with two-unit locomotives, but one-half unit would be ample so far as pulling capacity is concerned. However, 1,000-ton freight trains are handled most frequently and as these require full locomotives, the locomotive pairs already coupled for freight service are used also to handle the passenger trains. Otherwise, if the half-units were separated, one-half would be idle on one side of the river while the other was pulling a passenger train through the tunnel. At the end of the run the halves would be available for hauling only passenger trains or freight trains below the maximum rating. Thus to simplify operation the two half-units are always operated as one locomotive. The average mileage for each locomotive is in the neighborhood of 2,700 miles per month. The maximum monthly mileage was 3,540 miles. Looking at it in another way each locomotive made an average of 10 round trips of the electric zone per day.

An indicating ammeter in each locomotive cab serves to assist in keeping the demand on the power station within a safe maximum. The locomotive engineers are required not to let the motors of one-half unit exceed a maximum of 3,500 amp. There are 17 running positions on the controllers. The first, second and third notches are only for switching, coupling up a train and other purposes where slow speeds are desired. The fourth to the twentieth notches, inclusive, are running notches and the controller can be left on any of these, according to the speed that is desired. The engineers become very adept at gauging the amount of power required when starting trains of various loads. When using the ammeter it becomes possible to accelerate the train and to notch up the controller as the current tends to drop. If a train will not start on 3,000 amp. or less per half-unit the crew is instructed to look for trouble in the air-brake system.

One of the pairs of locomotive units is equipped with a speed indicator and recorder. A short section of one of the records from this tachometer is reproduced. By means of the speed-measuring apparatus the traveling speed of the locomotive is, at all times, graphically recorded on a roll of paper. The rate of speed is also indicated on a dial within the view of the locomotive engineer. The chief use of this device is to provide a means for preventing the over-speeding of the locomotives. Operating rules require that at no time shall the speed exceed 25 miles an hour, and as every movement of the train is permanently recorded within the box as well as indicated by a pointer the use of the device is very effective.

The principal mechanism of this speed-measuring apparatus is enclosed in a substantial iron box, the moving parts being driven from one of the main axles of the locomotive while the train is in motion, and by a clockwork for 20 minutes after the train has come to a stop. The clockwork spring is automatically wound during running by an eccentric and pitman feeder. The device which moves the paper on which the record is made automatically punches the three-minute intervals and in addition to this the record shows the rate of speed in the form of a curve. One roll of paper will last for about 375 hours of operation. During service the speed indicating and recording device requires no attention except when the train stops for longer than 20 minutes. Then the apparatus must be wound up by hand. In the instruction book suggestions are included for maintaining the speed-measuring apparatus in good condition. The suggestions conclude with the statement, "It is necessary in the engineer's own interest that the time of stoppage particularly should be registered exactly."

The trolley circuits for the entire electrified zone normally are all in one electrical section. Switches are provided at each tunnel incline for cutting off the yards from the tunnel section, if such sectionalization should ever be needed. Since operation was started there have been practically no electrical troubles or mechanical defects in the trolley circuits. At one time a high brake wheel on an especially large car grounded the trolley wire in the tunnel and opened the breaker, but the trolley wire itself was not damaged enough to interfere with the continued operation of the same train after the brake staff had been bent out of the way. Aside from three of the porcelain spool insulators that were cracked when installed, the trolley wire insulation and suspension have given no trouble.

Within the tunnel bore the messenger cables are insulated from the conductor wires. The messengers are carried on porcelain spools and the trolley wires are supported from the messengers by special wood-break hangers 3 in. square and 15 in. long. The effective insulating length of these hangers is about 5 in. If a porcelain insulator breaks down and allows the messenger cable to ground on the tunnel shell, then the wood-break hangers are put under electrical stress and the weakest one begins to smoke. As stated in the preceding paragraph three such breakages have occurred. In each instance the smoking wood insulator was noted in time so that repairs were made before service was interrupted. A tunnel patrolman is always on duty inspecting the tracks and whenever this man notes any unusual condition of the trolley wire he makes a mark on the tunnel lining for relocation and advises the motive power department by calling up from the nearest tunnel telephone.

The pantograph shoes are lubricated with a mixture of cheap grease and graphite. This lubricant distributes itself over the trolley wires and so coats them with grease that ice has never yet formed to a thickness sufficient to interfere with regular operation.

Connections between the power station switches and the conductors and the track return in the tunnel are made through lead-covered cables for the feed line and bare copper return cables. The cables pass from the power station in underground ducts for a distance of about 150 ft. to a shaft leading down to the tunnel bore. An extra lead-covered cable, with end bells ready for quick connection at both ends, is available in case the feeder cable gets damaged.

Westinghouse gravity type lightning arresters with metal arcing points are used for protection of the trolley and messenger in the electrical zone outside of the tunnel. The metal arcing points of these arresters, which are mounted on the steel catenary bridges, afforded a convenient perch for birds and until precautionary measures were taken the breakers not infrequently were opened by short-circuits caused by the birds alighting on the arcing points. The bodies of the birds would carbonize and afford a path to ground for the current and so the fuse stick would not fall and disconnect the arrester. The passage of current to ground would thus open the circuit breaker at the power house, but sometimes the arc would be so severe before the breaker opened that the metal support of the lightning arrester would weaken and let the heavy insulator fall. The possibility of the recurrence of such lightning arrester troubles has been effectively provided against by adding a perch for the birds directly above the metal arcing points. An ordinary two-wire porcelain cleat is supported from one end only by a small metal bracket. Thus the bird uses the cleat rather than the arcing points as a perch and protection from a short-circuit is afforded.

In installing the power telephone circuit cable was used throughout and no part of the line is carried on poles. The object of this special construction was to avoid any mechanical interference with the service. The telephone service on such installations has its greatest value in times of trouble and so the circuits were installed to avoid any probability of mechanical interference. So far the telephone has given uninterrupted service. The telephone circuit used by the motive power department has instruments connected with it at the following points: One on the power station switchboard, one in the power station office, two in the tunnel, one at the top of the tunnel cut on the power house side, one in each of the two tunnel pumping stations and one each at dispatcher's office in Sarnia and the roundhouse in Sarnia. All of these instruments are bridged on the line and a ringing code is used for calling the different stations.

The generating station which supplies 3,300-volt alternating current for the electric zone is located in Port Huron on the St. Clair river front, about 150 ft. distant from the line of the tunnel. The boiler house equipment includes four 400 h.p. B. & W. sectional water-tube boilers, each having three drums 42 in. in diameter by 23 ft. 4 in. long. The tubes are arranged 21 wide in order to secure quick steaming, and the three drums provide a large hot-water storage capacity to assist in maintaining steam pressure under excessive demands. Each battery of boilers is fed by six underfeed stokers controlled by an automatic regulator. On account of the great variations in the load on this plant a steel-plate fan 11 ft. deep by 3 ft. 5 in. wide, driven by an enclosed vertical engine, is used to accelerate quickly the fires of each group of boilers. The speed of the fan engines, through the control of a regulating valve, is varied according to the steam pressure at the turbines. This forced draft apparatus, like all other parts of the plant, is in duplicate to provide for continuity of

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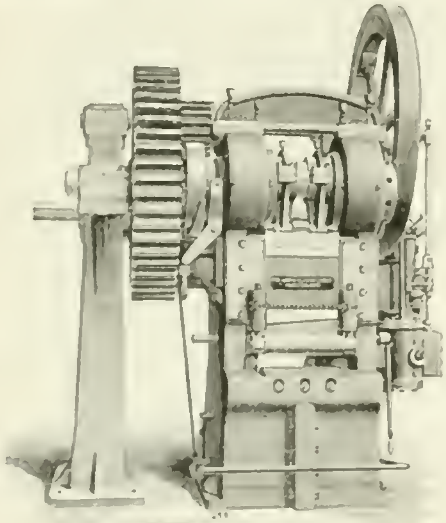

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It may be of interest to describe the operation of the train of automatic apservice. paratus which serves under severe overload to keep the steam pressure high enough to prevent a slowing down of the turbine unit. While no trains are in the tunnel the load on the station is about 400 kw; but when a freight train passes into the tunnel and starts to climb the incline a peak load amounting to about 2,000 kw is thrown on to the turbine suddenly and unannounced. This electrical overload makes a heavy demand for steam in the turbine and it is necessary for the boilers to be forced immediately or their reserve capacity will be exhausted and the pressure fall below a good operating point.

The interaction of the various parts of the steam supply when excessive load comes into the turbine is as follows: Attached to the supply line is a pressure line extending to the valve which is located in the boiler room. The diaphragm in this valve is under two pressures. On one side is the 200-lb. pressure of the live steam main and on the other side is the 125-lb. pressure of the auxiliary main. A balance lever serves to keep the valve in equilibrium. When the heavy demand comes on the steam line to the turbine and the pressure in that line falls, the valve is thrown out of balance and the movement of it in turn opens the throttle of the engine which drives the forced draft fan. Normally a difference in pressure of 4 lb. will operate this valve. As the load on the turbine continues to draw heavily on the boilers the steam pressure lowers and the valve feeds more steam into the fan engine until the fan is driven at full speed. The increase in air fed to the boilers forces more rapid combustion.

With the coming on of the load the fuel is fed more rapidly. The stoker-control valves are driven through a system of belts operating off from the flywheel of the fan engine. As the fan speeds up the wheel which drives the regulating valve is accelerated and the stokers operate faster. Thus the auxiliary apparatus furnishes more air and more fuel to the firebox very quickly after the load comes on the steam turbine.

When the control valve for the fan engine was first installed the high-pressure tap was made from the main steam header in the boiler house. The valve then lacked sensitiveness and so to improve the service the live steam tap was made at a point in the steam line close to the turbine throttle. Thus the valve is affected by the additional drop in pressure caused by the increased load and the resistance of the header and turbine connections. In addition to making the valve more sensitive this change in location of the pressure tap has reduced the temperature in the valve. Formerly the valve diaphragms lasted only two or three weeks, but since the longer pressure line has been used the life of the diaphragms has been increased to three or four months.

A separately fired superheater is installed between the two batteries of boilers. This superheater has the capacity for heating 36,000 lb. of steam per hour at 200 lb. per sq. in. to a final temperature of 587 deg. Fahr., which corresponds to a superheat of 200 deg. The grates are hand-fired and the temperature of the steam is controlled automatically by means of the thermo-couple in the stream outlet of the superheater. This thermocouple is connected to a relay with a large solenoid which opens and closes the valves to a hydraulic piston. These valves move dampers in the air ducts and thus regulate the draft.

In practical operation the regulating devices have been found to control the temperature very closely, notwithstanding the great variation in load to which the power plant is subjected. The superheater is of especial value because on periods of normal and low load the piping and turbine are kept highly heated by it, and thus initial condensation is greatly reduced at the time of the sudden demands.

The two Westinghouse-Parsons turbogenerators which comprise the main units of this plant are designed to operate at a normal voltage of 3,300 volts with a frequency of 25 cycles per second. They are three-phase machines and by the specifications are required to furnish their full rated load of 1,250 kw from a single phase. Each of the turbine units is capable of handling the entire load and so one machine always is held in reserve. Either turbine regularly handles peaks of from 2,000 kw to 2,300 kw, single phase, which last for four or five minutes at intervals of about 15 minutes. This phase also carries the lighting load. The other phases carry the load of the pumping and auxiliary apparatus, amounting to 200 kw.

With normal traffic through the tunnel the daily output of the plant is about 10,000 kw-hours. The maximum output for one day was 12,000 kw-hours and the highest peak load, 2,750 kw. This plant has been in continuous service without any interruption in the delivery of current since starting in April, 1908. After nearly two years of operation the turbines were opened and it was hardly possible to detect any erosion, even on the low-pressure vanes; the tool marks were still plainly visible in the main bearings.

The turbine glands have a water seal and because of the necessity for maintaining the water supply continuously an emergency connection has been made with the city water service. The city water line connects with the discharge line from the house pump. The house service is under 75 lb. pressure and the city pressure varies from 35 lb. to 60 lb. A check valve in the city water connection provides against the use of city water except when the house supply pressure falls below that of the city pressure. Because of this emergency connection, the house pump can safely be stopped without endangering the water glands at the main turbine bearings.

The main generators are cooled by means of air drawn through the coils by vanes mounted on the rotor. The supply of air for this cooling service as originally installed was all taken from out of doors. An independent supply duct serves each turbine. The ducts are short and so air is taken into the turbine generator at practically the outdoor temperature. Formerly difficulty was experienced in severe weather because of frost accumulating on the air intake screens and cutting down the circulation. To provide against this condition an opening was cut through the side of each duct. Now in cold weather the turbine cooling air is taken from the basement. The circulation of this air through the turbine gentrator also serves to warm the building.

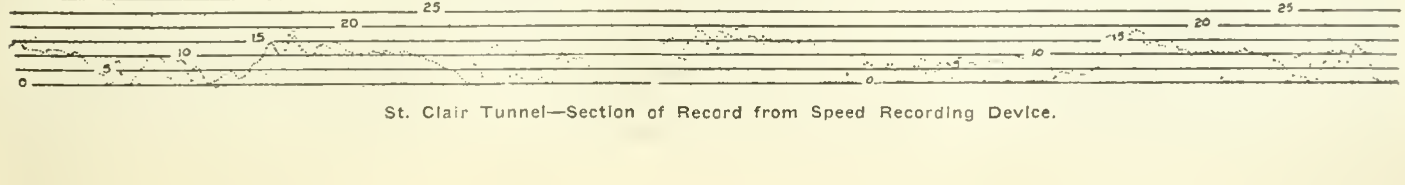
When the plant was first started each turbo-generator set was used on alternate days. Now the load is shifted from one machine to the other twice a week. It is stated that the daily change was made at the beginning of operation so that the men would become familiar with the programme of starting and stopping the units. After the service was well under way, however, it was not thought desirable to shift the load so frequently because of the stresses set up in a turbine when it is warming or cooling.

A voltage regulator set is a very essential part of the regulating equipment of this plant. This set is connected with the locomotive phase of the generator only and maintains it practically constant at 3,300 volts, even though the load swings from 250 kw to 2,500 kw. When a heavy train goes through the tunnel and a maximum lead comes on the railway phase, the other two phases get considerably out of balance and so, to keep the voltage on the lighting supply constant, all the lighting transformers are connected with the locomotive phase. The smaller pump motors, machine shop and other motors are all of the three-phase induction type operating directly across the 3,300-volt line, and so they are not unduly affected by the locomotive phase being out of balance with the two unloaded phases.

On account of the widely variable nature of the load it is necessary to keep an espelially careful watch over the turbine governors and emergency valves. A systematic method of testing these safety devices is followed. Whenever a turbine unit is shut down, and the load is changed from one to the other twice a week, the emergency valve tripping device is given a service test. The engineer moves the governor rod so that the speed of the turbine is increased, meanwhile watching the frequency indicator and noting at what frequency the emergency valve closes. The valve is set to open at 10% above normal speed and it is thus put to an actual test twice each week.

All the circuit breakers on the station switchboard are now equipped with contact points which complete a circuit and ring an annunciator bell whenever a breaker opens. This system of announcing the opening of a breaker has made it possible for the turbine engineer also to act as switchboard attendant. If the engineer needs assistance at any time he has a push-button available on the board so that he can ring gongs located in the boiler house and in the basement where the auxiliaries are located, and call either the boiler tender or the oiler. There also is a speaking tube from the engine room to the boiler room. At night the fireman reports to the engineer every 15 minutes. If he fails to report regularly the engineer blows a whistle or sends the oiler to see whether the fireman needs assistance. A telephone instrument, connected with the electrical department line, is mounted on the power station switchboard so that the turbine engineer can quickly answer emergency calls coming from the tunnel or the yards.

A barometric jet condenser with a 30-in. inlet serves each stem turbine. A 36-in. exhaust pipe connects the exhaust outlet for the turbine with a reducing fitting attached to the condenser head. There are two bends in the connection and on low loads when the plant was first operated it was found that water accumulated in the bottom bend. This accumulation of water, unless withdrawn, would cause water-hammer as well as offer a resistance to the passage of steam from the turbine to the condenser head.



St. Clair Tunnel—Section of Record from Speed Recording Device.

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To provide against this undesirable feature a drip tank has been installed in the basement. This tank has a capacity of about 20 gal. A pipe leads directly to the tank from the bottom of the U-shaped condenser connection. Any water forming in the condenser connection during low load drains into the storage tank in the basement. A water gauge is provided on the tank and the hot water is drawn off from the tank once an hour. Valves are placed in the drip connection so that the vacuum will not be lost while the tank is being emptied. When the water has been drawn from the tank and it is again connected with the turbine exhaust connection, there is about 3½ in. drop in the vacuum.

The power station is illuminated by eight Nernst lamps in the turbine room and two in the boiler room, in addition to nearly 200 incandescent lamps located suitably for special illumination. Lighting current is taken from the main a.c. generator. Normally the exciter unit, which is controlled by a regulator, is below voltage and so its current would not be suitable for lighting. Four oil lamps are kept burning every night for emergency use, but as yet have never been needed. The lighting circuit switch is of the double-throw type and so connected that in emergency it can be thrown over and lighting current taken from a steam-driven exciter which, though not normally used, can be started quickly.

The power station staff includes the following: First engineer, turbine engineer, oiler, fireman (and water tender), machinist, ash handler, janitor, and laborer. The night staff includes turbine engineer, oiler and water tender. The turbine engineer acts as switchboard operator. Only one of the two turbine units is ever required to carry the entire load and as the switchboard is within a few feet of the steam end of the turbine and requires practically no attention, one man can easily attend to both the turbine and the switchboard.

The operation and motive power features of the St. Clair tunnel are in charge of W. D. Hall, Superintendent of Power Plant and Electrical Equipment and Superintendent of Tunnel, who reports to W. D. Robb, Superintendent of Motive Power, G.T.R. Reporting to Mr. Hall are four subdivisions of the force: A first engineer in charge of the power house, four pumping plant attendants, roundhouse foreman and the line crew of two men who take care of the electric lighting and trolley maintenance.—Electric Railway Journal.

Among the Express Companies.

The Canadian Northern Ex. Co. has re-opened its office at Cap Rouge, Que., and has closed its offices at St. Augustin and St. George, Que.

F. M. Smith has been appointed route agent, Canadian Ex. Co., for lines west of Fort William, Ont., with headquarters at Winnipeg, Man.

F. R. Jelf, heretofore agent, Dominion Ex. Co., Brandon, Man., has been appointed agent at Calgary, Alta., succeeding D. G. McKenzie.

C. Dowling, heretofore chief clerk in Superintendent's office, Dominion Ex. Co., Winnipeg, has been appointed Agent there, vice J. H. O'Connor, resigned to enter other business.

J. H. Connor, who has recently resigned from the position of Agent, Dominion Ex. Co., Winnipeg, was presented with an address and a number of silver and cut glass articles by the staff, May 17.

The Dominion Ex. Co. recently accomplished a quick delivery of a carload of imported stallions from St. John, N.B., to Regina, Sask., 2,230 miles in 3 days 14 hrs., which, it is claimed, is a record.

D. G. McKenzie, agent Dominion Ex. Co., Calgary, Alta., was entertained to dinner by a number of friends, May 2, on his leaving Calgary for a long vacation, after which, it is stated, he will be transferred to another office. He was presented with a silver service.

The Minister of Railways introduced a bill into the House of Commons, May 4, amending the Railway Act, and providing that express companies shall conform to the law now existing in respect to railways, under which statements of business and operations must be submitted to the Board of Railway Commissioners.

Through the absorption of the Alaska-Pacific Ex. Co., by Wells, Fargo and Co., the following lines will be included, with others, in the company's Alaska Yukon Division:— C.P.R. Alaska route, Victoria and Vancouver, B.C., to Skagway; Northern Navigation Co., St. Michael to Dawson, Yukon; and White Pass and Yukon Route, Skagway to White Horse, White Horse to Dawson, Caribou to Atlin, B.C.

The Western Ex. Co.'s offices and messenger service, on the Wisconsin Division of the Minneapolis, St. Paul and Sault Ste. Marie Ry., the Duluth, South Shore and Atlantic Ry., and the Mineral Range Rd., have been transferred from the Northern, to the Southern Division; St. Paul and Minneapolis will remain in the Northern Division and Duluth and Superior will be in the Southern Division. S. A. Davis is Superintendent of the Northern Division, with office at St. Paul, Minn., and C. W. Smith is Superintendent of the Southern Division, with office at Chicago, Ill.

The Dominion Ex. Co. has issued a circular to its agents, as follows:— "We are informed that where changes have been made in the classification or rates, such changes have been, in some cases, attributed to action on the part of the Railway Commission. This is wrong and agents are cautioned against making such statements. While the Railway Commission approved the classification upon application of the express companies, the companies are not prevented from making changes in the rates if they choose to do so, provided the classification or tariffs are duly amended and approved in accordance with the Railway Act; but the act requires that the classification and tariffs that are in effect must be strictly adhered to, and if customers request special concessions contrary to the tariffs filed they should be informed that the law will not permit it."

Grain Elevator Notes.

The Western Canada Flour Mills Co.'s elevator at Gilbert Plains, Man., with about 11,000 bushels of grain, and an adjacent flour house, were burned to the ground May 4.

The Saskatchewan Co-Operative Elevator Co., recently established by the Saskatchewan Government, received, to the end of April, 90 applications regarding elevators, as provided in the act. The act allows a Government loan of 85% of the cost of construction for any local elevator, the balance being paid by the applicants, who form a local company, the loan being paid out of profits.

It is reported in Winnipeg that the vacancy on the Manitoba Elevator Commission, caused by the resignation of D. B. MacLennan, will not be filled for the present. No additional elevators will be purchased this year. The commission will shortly call for tenders for the remodelling of a number of elevators in different parts of the province, plans and specifications for which are in course of preparation.

Montreal daily papers of May 10 stated that the Harbor Commissioners had commenced to build a grain storage elevator with a capacity of 500,000 bush. on Windmill Point. This is incorrect. The elevator which is to be built at Windmill Point is for the G.T.R., and will be operated by the Montreal Warehousing Co., a subsidiary of the G.T.R., in connection with the existing G.T.R. elevator there, as announced in our May issue.

Dominion Flour Mills, Ltd., has been incorporated under the Dominion Companies Act, with a capital of $1,500,000, and office at Montreal, to carry on a general grain and flour business, and in connection therewith to build, own and operate steam and other vessels, elevators and other similar facilities. The incorporators are, C. G. Greenshields, E. Languedoc, E. R. Parkins, W. Taylor and R. Brodeur, Montreal.

Press reports from Montreal state that an arrangement for the consolidation of the International Milling Co. and the Canadian Cereal and Milling Co. has been arrived at, and that a holding company will be formed, under the name of the International Milling Co. of Canada, with an authorized capital of $3,500,000 in 7% cumulative preference stock, and $2,500 000 in common stock, of which $2,500,000 and $1,500,000 respectively, will be issued now, to acquire the shares of the two companies. In addition, there will be a bond issue of $2,000,000. It is also reported that, in addition to the enlargement of the International elevator at Moose Jaw, Sask., a line of elevators will be built throughout the northwest.

Telegraph and Cable Matters.

A. E. Starr, of the C.P.R. Telegraph Department, Victoria, B.C., has been appointed manager, C.P.R. Telegraph office at Vancouver, succeeding W. J. Christie, resigned.

At the Order of Railway Telegraphers convention in Toronto, May 9, eight delegates were appointed to interview the C.P.R. management regarding a general increase of salary, improvements for all operators, and changes in the working rules.

The Dominion Parliament has passed votes for the Government telegraph lines in the west, as follows:—Athabasca Landing, Peace River Landing line extension to Grande Prairie, $22,500; Moose Jaw, Wood Mountain line, renewals and reconstruction, $18,500; Northwest lines, shifting of line from farm lands to establish roadway, $5,000; telegraph line from North Battleford to Isle la Passe, $37,500; total, $83,500.

Work was resumed early in May on the erection of the Government telegraph line from Kitsumkalum to Stewart, B.C., 150 miles, and it is expected to have it ready for operation early in July. This is a branch from the Prince Rupert line, which is, itself, a branch from the direct line between Ashcroft and Dawson. Gangs are stringing wire from Lava Lake and Alice Arm to the Naas River. The work was commenced last year, and was about half completed when it was suspended for the winter.

The British Postmaster General, in the House of Commons, May 4, in response to questions regarding the control of the cable service between Great Britain and America, said that negotiations were being completed whereby the control of the Anglo-American Co.'s business will pass to the Western Union Co., but he was not aware that the Direct United States Cable Co. was included in the arrangement. The new deal would not make communication between Great Britain and America entirely dependent on the combine, and it was quite certain that the British Government will control the rates, for British protection. It is reported that under the agreement the Western Union Co. will guarantee 3¾% on the ordinary stock, and 1½% on the deferred stock of the Anglo-American Co.

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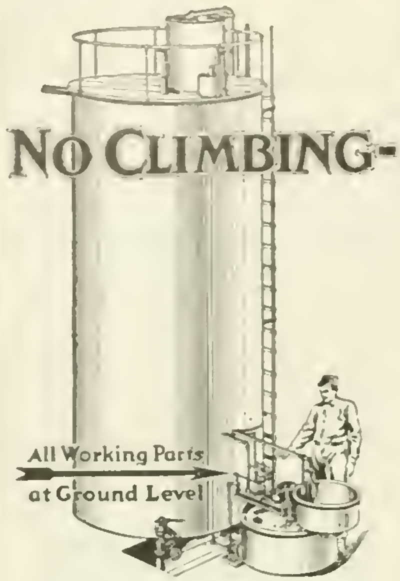

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W. R. TOPPAN, Vice-President and General Manager

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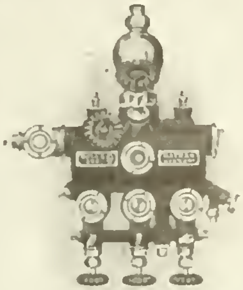

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ASSISTANT SECRETARY, Aubrey Acton Burrows, Secretary and Business Manager Railway and Marine World.

OFFICIAL ORGAN, THE RAILWAY AND MARINE WORLD.

◆

A System of Accounting for Track Construction Expenditures.

By H. F. Smith, Comptroller Montreal Street Railway,

In explaining the system in use by the Montreal St. Ry. in recording expenditures made for track construction and renewals of track, it is with the hope that it may prove of sufficient interest to other companies, to promote discussion and criticism that may result in the bringing out of some ideas that will help in perfecting a system of records for this class of work.

It has been my experience that it is not a simple task to get an accurate cost of each job when a number of pieces of work are under way at the same time. To get the labor cost of course is simple. The difficulty is with the material.

The predominating idea of the engineering department being naturally to get the work done as well and expeditiously as possible, any system of records for this class of work, to be effective, must be simple and work automatically, and be of a nature easily understood by the outside staff of the construction department. One of the difficulties experienced by the accounting department when material is requisitioned out of stores for a designated piece of work is that when the occasion arises that the material in question is diverted to another piece of work, the system must be such that it will detect this, should those immediately concerned in the transaction fail to see that the requisition is properly altered. Again, where two pieces of work are under way on streets in close proximity to one another and the foreman of one job finds he has run short of, or has not received certain material that he needs at once, and the foreman of the other has more than he requires for immediate use, more or less borrowing would likely result, and in a great many cases, material would not be returned. This means that one job would be overcharged and the other shortcharged, with the value of the material not returned. I am not sure whether this is entirely overcome yet, but the system introduced took into consideration these points among others when it was put into force.

When it has been decided by the management that a piece of track is to be renewed or a new line constructed, the engineering department issues a request to the Comptroller for a work order number on forms 1 or 1A, according to the nature of the work. An estimate of what the work should cost is given in detail on these forms. When making up his estimate the engineer fills in also form 2, which gives the total quantities of the different classes of material required for the work, and forwards same to the storekeeper, as his authorization to deliver material in such quantities as are requisitioned for from time to time, as the work progresses, up to the amount advised. The storekeeper keeps this form on file and as each requisition is filled, marks the quantity supplied opposite the quantity authorized. This keeps him always advised as to what further quantities he can deliver. Should it so happen that the quantity of material estimated is short of actual requirements, the engineering department is notified by the storekeeper as soon as he receives a requisition for any class of material in excess of the amount authorized, and he must receive a written order from the Chief Engineer before the requisition can be filled. As the engineer is called upon to explain the reason when estimates and actual costs do not bear a fair relation to one another, this system gives him an opportunity to look into matters while the work is in progress, and ascertain if the fault is with his estimates, if any material has been supplied and transferred to another job, or just what the reason may be. Of course, if the costs are much under the estimates, his attention would probably not be drawn to the fact until the work was completed, when a detailed statement of the material charged, compared with the estimate, would be put before him.

I do not think it is necessary to describe at any length the form of requisition for material or the method of keeping time. The requisition form reproduced herewith is self-explanatory. These forms are signed by the Superintendent of Construction and forwarded to stores as material is required.

We have also in use a system of transfer slips covering the transfer of charged out material from one job to another, which are made out in triplicate by the foreman or checker, as the case may be, the carbon copy remains in the book and the other two copies go with the material, and are signed by the foreman or checker receiving same, and forwarded to the Superintendent of Construction, who initials same, keeping one copy and forwarding the other to the stores department. The storekeeper prices and extends same and forwards a summary to the accounting office at stated intervals when adjusting entries are made.

The time is taken by timekeepers, who visit each gang twice daily, and check up the men. They also make up a daily report showing the amount expended on each job, a copy of which is forwarded to the Construction Department.

About the 15th of each month a letter is sent to the Chief Engineer advising the amount spent on each work order up to the end of the previous month, together with the estimated cost of the work. This keeps him in touch monthly with the amount he has spent, and by comparing with his estimates shows him how much margin he has left.

FORM 1—

MONTREAL STREET RAILWAY COMPANY
TRACK RENEWALS.

W. O. No. ....Track Appropriation No......
W. O. No. ....Electrical .... 19.
To Comptroller:

Kindly issue work order for renewing ... miles track on .... St. From .... St to .... St. (paved macadam) Single or Double track .... Presently laid with ....lb.......ft. (girder "T") Rail. To be replaced with .... lb. .... ft. (Girder "T") Rail.

ESTIMATED COST TRACK.

Labor - - - - - - - - - - $..........
Intersections - - - - - - - - ....
Rails ...... tons - - - - - - ....
Joints, Bolts, Spikes - - - - ....
Ties - - - - - - - - - - ....
Concrete Paving - - - - - ....
Miscellaneous - - - - - - ....
Total, $..........
Less old material released - - ....
Total, $..........
Betterment Track - - - - - ....

ESTIMATED COST ELECTRICAL.

Labor - - - - - - - - - - $..........
......Cable at - - - - - ....
......Bonds at - - - - - - ....
Miscellaneous - - - - - - ....
Total, $..........
Less old material released - - - ....
Betterment Electrical - - - - ....
$..........

Total estimated cost track and Electrical $..........
Total betterment track and electrical .....$..........

....
Chief Engineer.

FORM 2—

MONTREAL STREET RAILWAY COMPANY.
TRACK CONSTRUCTION.

W. O. No.......................................
Appropriation No.......
To Comptroller:
.... 191 .....

Kindly issue work order for constructing .... miles track on .... St., from .... St. to .... St. Single or double .... Length and weight of rail to be used.... lb. .... ft.

ESTIMATED COST:

Labor - - - - - - - - $..........
Intersections - - - - - - ....
Rails, ... tons - - - - - - ....
Joints, bolts, spikes - - - ....
Ties - - - - - - - - ....
Concrete - - - - - - ....
Paving - - - - - - - ....
Miscellaneous - - - - - - ....
Total, $..........

....
Chief Engineer.

FORM 3—

MONTREAL STREET RAILWAY COMPANY.

Work order
Track ....
Elect. ....
..........19...
....
....

The undermentioned material will be required in connection with track (renewal construction) .... to be delivered on the work in quantities as required. Under no consideration should these quantities be exceeded without written order from Chief Engineer.

Intersection ....
Rails ....
Ties ....
Spikes ....
Joint plates ....
Joint plates (special) ....
Bolts ....
Tie rods ....
Cement ....
Sand ....
Stone ....
Pitch ....
Tar ....
Washers ....
Cable ....
Bonds ....
Rail braces ....

....
Chief Engineer.

◆

The electric freight locomotive which the Windsor, Essex and Lake Shore Rapid Ry. is having built by the Preston Car and Coach Co., Preston, Ont., will be mounted on Baldwin trucks, and fitted with two baggage doors on each side and motorman's cab at each end. The interior will be fitted with ash, and the exterior painted. The car will be 54 ft. long over all, 9 ft. wide, and the bottom framing will be of structural steel throughout, the side sills being 10 ins. channels, and centre and intermediate sills 8 ins. I beams.

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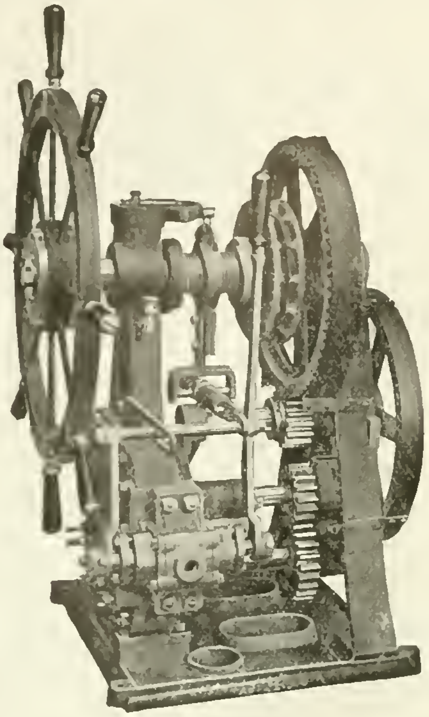

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Projects, Construction, Betterments, Etc.

Alberta Electric Ry.—A press report from Calgary, Alta., May 12, states that the first portion of the line to be built will extend from Calgary to Banff, about 70 miles, and that it is expected to have it in operation by the end of 1912. (May, pg. 453.)

Brandon, Man.—The report of Mr. Farquharson with reference to the construction of a street railway in Brandon is under consideration by the city council. The report suggests the building of three lines at once, aggregating 7.7 miles, at a cost of $140,000, exclusive of overhead work, rolling stock and power. The lay-out of the line would permit of extensions as the needs arose. (May, pg. 453.)

British Columbia Electric Ry.—A letter was received by the Vancouver city council, from the General Manager, May 8, stating that the directors in London, Eng., had decided to withdraw from all negotiations for a new agreement, and to work on present franchises until their expiry. A tentative agreement had been drawn up, but on Feb. 13, the council put forward additional conditions which the directors could not agree to, hence the withdrawal. The company, added the General Manager, had invested in actual cash in their various undertakings in the province $21,826,086, on which there was paid last year 3.7% dividends. In connection with this matter the Vancouver Board of Trade has appointed a special committee to investigate the various franchises and agreements with the company, and report thereon.

The engineer of the South Vancouver municipality has been instructed to prepare profiles of certain streets in order that the company may prepare plans for the car line extensions. A deputation has been appointed by the ratepayers to urge upon the company the desirability of extending the lines along the Westminster road.

The Richmond municipal council was informed May 9, that plans were being prepared for building a second track on the line to Eburne, and that the work would be undertaken in a short time. The traffic would not warrant the building of a second track on the line from Eburne to Brighouse. The Point Grey municipal council has under consideration an application to the company to build a line from Trafalgar St. west to Alma road and to connect with Tenth Ave., for which purpose the council had widened the street to 86 ft. The question of the validity of the company's franchise in Burnaby tp. is being raised, and the council has been notified that the company will defend its status in the courts if necessary. The company's officials are considering the desirability of extending the Chilliwack line through to the Steamboat Mountain goldfields. The extension would be 60 miles, and would open up a large area of fertile land.

The company has purchased over six acres of land on the Burnside road, Victoria, for the purpose of providing a storage yard to be used in connection with the suburban line to the Saanich district. The route for this line has been cleared for the first 12 miles, and two grading gangs are at work. It is expected that the line from Victoria to Deep Cove will be in operation by the end of 1912. (May, pg. 453.)

Buffalo, Niagara and Toronto Ry.—The Dominion Parliament has revived and confirmed the powers conferred by the company's act of incorporation, chap. 67 of the statutes of 1906; extending the time fixed for the construction of the lines authorized to be built, and making a slight change in the location of the starting point of the line, near Niagara-on-the-Lake. (Mar., pg. 257.)

Calgary Municipal St. Ry.—Progress is being made with the extension of the municipally owned electric railway in Calgary, Alta., and it was expected to have the one to the general hospital ready for traffic by May 30. Work has been started on the suburban extensions, and a proposition is under consideration for the building of a six mile line to connect with the municipal lines. This line will probably be built by the council for the landowners interested. (May, pg. 453.)

Coteau Power Co.—A press report states that arrangements have been completed for the building of an electric railway from Vernon to Lumby, B.C. A. E. Ashcroft, C.E., Vernon, B.C., is one of the leading men in the company. This is a 20 mile line and the power house will be located at Shuswap Falls. Power will also be furnished for lighting purposes.

We are advised that matters in connection with the arrangements for starting work on the company's proposed power scheme, which includes an electric railway at Vernon, B.C., are progressing favorably. It is believed that a start will be made this summer on the power plant. (Apr., pg. 399.)

Chatham, Wallaceburg and Lake Erie Ry.—The Dominion Parliament has granted the company authority to build the following additional lines of railway: From a point on the main line to Blenheim and Rondeau Harbor; from Wallaceburg to Dresden, Ridgetown and Erie Eau Park; from North Dresden to Petrolia and Sarnia; to issue bonds for $20,000 a mile in respect of such lines, and granting an extension of time for the construction of previously authorized lines.

A press report states that it is expected to let contracts at an early date for building a spur line and freight sheds and the making of connections with the G.T.R. at Chatham, Ont. (Mar., pg. 257.)

Dartmouth and Cow Bay Electric Ry.—The Nova Scotia Legislature has incorporated a company with this title to build an electric railway from Dartmouth to Cow Bay, N.S. A. C. Pyke and R. Stanford, are among the provisional directors.

Development Co. of Canada.—The Quebec Legislature has incorporated a company with this title for the purposes named in the application. (April, pg. 365.)

Greenway-Phoenix Tramways Co.—The British Columbia Legislature has incorporated a company with this title to take over the franchises, etc., of the Greenway-Phoenix Tramway Co., incorporated under the Tramway Company Act, and to build and operate tramway lines. The provisional directors are:—T. A. Woodruff, Chicago, Ill.; D. McIntosh, I. H. Hallett, Greenwood, B.C. (Mar., pg. 257.)

Grouse Mountain Scenic Incline Ry.—It is said that construction will be started early in June on this projected railway, and that the work will be done in three sections, the first consisting of 1.5 miles of track leaving Capilano View, and extending easterly to the incline or cable section, which will go up the side of the mountain for 1.5 mies, with a rise of 2,000 ft., to a power house situated in D.L. 1526. The third section of the line will skirt the crest of the mountain to the summit, where there will be gardens and an hotel. The general plan is to construct a two-car, three-rail line from end to end. The timbers on which the line will be built are to be anchored to solid rock and safety will be assured by the employment of the most modern devices. Section one of the line will be provided with the ordinary type of electric car. Section two, the incline, will be a cable line, provided with two observation cars, each of which will seat about 60 passengers. Section three will be operated with the ordinary electric cars. According to present plans the power will be obtained from the British Columbia Electric Ry. It is expected that the line will be completed and in operation next year. (Apr., pg. 319.)

Hamilton to Galt, Ont.—Surveys were being made, it was reported May 17, for the Dominion Power and Transmission Co., which owns all the electric railways centreing in Hamilton, for the building of an electric railway to Galt. It is stated that the Hamilton and Brantford Ry. will be used as far as Langford, the new line branching off thence to Rockton and Galt. General Manager Hawkins is quoted as stating that the company had this line surveyed and was considering its construction. Local reports state that no portion of the right of way has been purchased, and that the line may be extended so as to be connected with the projected Hamilton, Waterloo and Guelph Ry., thus making it possible to give a long round trip.

Other press reports state that a Toronto syndicate has prepared plans for a line to serve Hamilton, Galt and Guelph, and that F. L. Sommerville, formerly G.T.R. Resident Engineer at Toronto, was negotiating with interested companies with a view of securing a right of way into Hamilton.

Huron and Ontario Ry.—The Dominion Parliament has extended the time within which the company may build its projected lines. (Jan., pg. 71.)

Imperial Traction Co.—The Dominion Parliament has incorporated a company with this title, to build an extensive system of electric railways from Hamilton, westerly to Guelph, Stratford, London and other points in Western Ontario. (Feb., pg. 167.)

International Traction Railways—International Ry.—The Dominion Parliament has passed an act respecting the taking over of the lines, etc., of the International Ry. in Canada, by the International Traction Railways. (May, pg. 453.)

Lake Erie and Northern Ry.—The Dominion Parliament has incorporated a company with this title to build a railway from Port Dover to Galt, and Ayr, Ont. (Mar., pg. 257.)

London and Lake Erie Ry. and Transportation Co.—Application is being made to build a spur to connect the St. Thomas Street Ry. near Balaclava St. with the Michigan Central Rd., and is under the consideration of a special committee. The company has running rights over the municipally owned street railway, but proposes to build the spur itself. (Jan., pg. 71.)

London and Northwestern Ry. of Canada.—The Dominion Parliament has passed an act extending the time within which the line, authorized to be constructed by chap. 100 of the statutes of 1909, may be built, and adding the words "of Canada," to the title, so that when bonds are being placed on the British market, the company may not be confused with a similarly named British steam railway. (April, pg. 365.)

London Street Ry.—New switches and diamonds were put in at the corner of Richmond and Dundas streets, April 30. (May, pg. 453.)

Lunenburg Electric Ry.—The Nova Scotia Legislature has incorporated a company to build an electric railway within the municipality of Lunenburg, N.S. The municipality has been authorized to contribute towards the payment of damages for right of way required by the L.E. Ry., within the municipality.

Manitoba Radial Ry.—The Dominion Parliament has extended the time within which the company may construct the lines authorized to be built by chap. 105 of the statutes of 1907.

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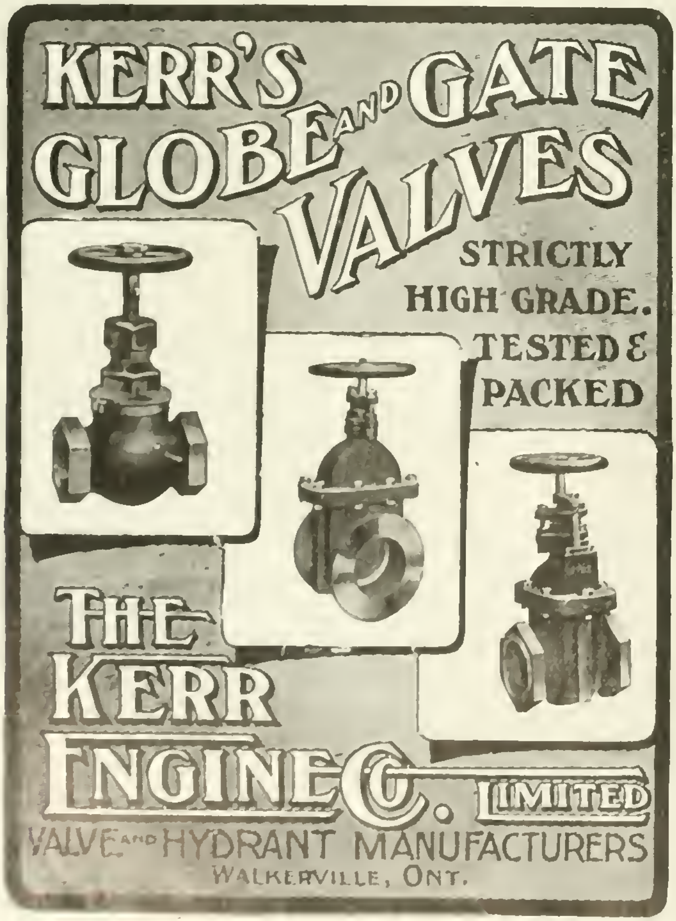

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Moncton Tramways, Electricity and Gas Co.—The transfer of the electric light plant to the company, as a part of the contract with the city for the building of an electric street railway, was made by the Moncton, N.B., city council, Mar. 26. (April, pg. 365.)

Montreal and South Western Ry. and Power Co.—The Quebec Legislature has incorporated a company with this title, to build a steam or electric railway from Caughnawaga southwesterly to the International boundary at St. Francis, Que., with authority to develop water powers, to generate and distribute electrical energy. The title in the original application was Montreal and Southern Ry., and Power Co., but the Legislature made the change so as to prevent confusion with existing companies having somewhat similar titles. (See Montreal and Southern Ry. and Power Co., Feb., pg. 113.)

Elevated Railway for Montreal.—At a meeting of the Montreal city council, May 15, the Board of Control was asked to submit a report on the advisability of having an elevated railway from one end of Craig St. to the other. It is estimated that such a line can be built for $200,000 a mile, while an underground line such as the Montreal St. Ry. had power to build would cost at least $1,000,000 a mile.

Montreal Park and Island Ry.—In passing through the House of Commons the company's bill was amended so that the consent of municipalities will have to be obtained to its lines being carried along or across any hghway, and by authorizing its amalgamation with the Montreal St. Ry. and the other electric railways owned by the same interests on Montreal Island. (Mar, pg. 259. See also Montreal Tramways Co., May, pg. 455)

Montreal Street Ry.—As the result of a meeting with the Board of Control, May 4, the company will submit a statement showing the terms upon which it will grant reduced fares, and do certain works, and the controllers will prepare a report showing what the city will expect the company to do. Upon the exchange of these papers, and consideration thereof, a further meeting will be held in order to arrive at an agreement. (May, pg. 455.)

Niagara Frontier Ry.—Application is being made to the municipal authorities interested by G. H. Pettit and Wm. C. Perkins in behalf of the company, for franchises for an electric railway from Niagara-on-the-Lake to Fort Erie, along the Niagara River. (May, pg. 455.)

Niagara, St. Catharines and Toronto Ry.—Negotiations have been in progress for some time between the company and the town council of Thorold, Ont., as to an extension of the franchise. The town offers a 10 year franchise, on condition that the company gives a five cent fare, paves between the tracks and pays $1,000 a year. The company declined to agree, and desired a conference, but the council has refused to consider any alteration of terms. (April, pg. 365.)

Niagara, Welland and Lake Erie Ry.—At a meeting of the shareholders the following were elected officers for the current year:—President, C. J. Laughlin, Welland, Ont.; Vice President, F. C. Carlson, Los Angeles, Cal.; Secretary, A. P. Laughlin, Welland; Treasurer, D. L. Stafford, Dunkirk, N.Y. A contract is said to have been let to H. H. Leach & Co. for the construction of the line. The first section of the line to be built will be between the G.T.R. and the Michigan Central Rd. stations in Welland, and it is expected to have this in operation within three months. (Mar., pg. 259.)

Nipissing Central Ry.—The Commissioners of the Temiskaming and Northern Ontario Ry., who have bought this line, for $250,000, went over it early in May. Up to May 25 the property had not been transferred to the Commission, some details remaining to be settled.

At a public meeting in Cobalt, May 16, a resolution was passed asking the Commissioners to arrange for the building of the line through the town, and recommending the council to grant the necessary franchise. (May, pg. 459.)

Ontario West Shore Ry.—Arrangements are reported to have been made by J. W. Moyes, President, May 5, for the resumption of construction work at the Goderich end of the line. The question of what streets the line will be built on in Goderich is still before the council. (May, pg. 455.)

Ottawa Electric Ry.—The question of building of extensions to the street railway system are under consideration by the city council. In this connection, notice of motion has been given by Alderman Stroad for the appointment of a commission to report on the best way of meeting the situation about to arise through the expiration of certain of the franchises held by the company. The company has notified the city council that it prefers the Montreal road to the St. Patrick St. route for the new line to the cemetery, and the matter is under discussion. (April, pg. 385.)

Ottawa, Smith's Falls and Kingston Ry. Co.—The Ontario Legislature has incorporated a company with this title. (See Ottawa, Smith's Falls and Kingston Electric Ry., April, pg. 365.)

Peoples Ry.—A special meeting of the shareholders was held in Berlin, Ont., May 8, for the purpose of authorizing an issue of bonds at the rate of $25,000 a mile, and the execution of a mortgage to secure the same. A resolution was also submitted authorizing an increase in the capitalization of the company to the extent of $40,000 a mile. S. Wanless, Berlin, nt., is secretary of the company.

The company has secured an act from the Dominion Parliament declaring that its undertaking is a work for the general advantage of Canada, and authorizing it to extend its lines in many directions. It is stated that a contract was signed in Toronto, May 17, with the Acme Construction Co., for building the line. Some construction work has been done between Guelph and Berlin, Ont., and W. A. Bugg, President, is reported as stating that the line between these two places would be in operation by the fall, and that when work had been thoroughly started, more than a mile of track a day would be laid. He is further reported to have said:— "We shall make the trip between Toronto and Windsor in less time than the steam roads take. Our rolling stock will include sleepers, parlor car and buffet cars of the most modern type." The company's plans include a through line from Toronto to Windsor, with a net work of local lines extending from Collingwood and Owen Sound, to Goderich, Sarnia, and Port Stanley. Preferred stock amounting to $29,500 has been subscribed by various townships, and over $150,000 of common stock has been privately subscribed. The bond issue of $25,000 a mile is reported to have been underwritten by New York and Detroit financial houses. It is intended to use Hydro-Electric power. (May, pg. 455.)

Pincher Creek to Pincher Station.—At a meeting of the Pincher Creek, Alta., town council, May 12, it was decided to take into consideration the question of building an electric railway from Pincher Creek to the C.P.R. staton at Pincher. With a view of providing power for such a railway, as well as for the increasing demands for lighting, the council ordered an additional engine of 215 h.p. for its power plant.

Port Arthur and Fort William Electric Railway.—The Port Arthur, Ont., city council has authorized the extension of the Arthur St. car line to Algonquin Ave., in the Carrick extension. (May, pg. 455.)

Quebec Ry., Light and Power Co.—We are officially advised that a contract has been let to M. Lonergin, Quebec, for the building of the upper level line from Beauport to Kent House, Que. The line is expected to be completed and ready for operation by June 20.

The through service to Sillery was inaugurated April 30, the route followed being from Sillery to the Chateau and back by St. John St. The track to Montmorency Falls is being relaid with new and heavier steel rails. A new siding is being built just below Limoilou on the river side of the line.

We are officially advised that the company has under consideration the abolition of steam motive power on the Montmorency Division, and the operation of the entire line by electricity. At present both electric and steam motive power are used. (April, pg. 365.)

Regina Electric Ry.—Rapid progress is being made with the building of the municipal electric railway in Regina, Sask., and it is expected to have the line to the Exhibition grounds opened for the fair. Track was also reported to have been laid May 15, from Albert St. to Cornwall St. on Eleventh Avenue; the right of way on Dewdney St. was ready for tracklaying, and the preparatory work was being gone on with on Albert St. The overhead work is being put at a good rate. The materials for all the work have been delivered in Regina, or are on the way. The car bodies were purchased in England, while the trucks, etc., have been purchased in the U.S. We are advised that the Regina City Council let contracts totalling $266,476.57 for work and materials in connection with the railway. These contracts include construction on paved and unpaved streets, pavements between tracks, gravel, cement, ties, poles, steel rails, rail fastenings, spikes, bonds for steel rails, special intersection work, and overhead materials. It has been decided to erect the car barns on Albert St., between Fifth and Sixth Avenues. (April, pg. 365.)

Revelstoke, B.C.—Press reports state that a company is being organized in Revelstoke, B.C., to build an electric railway there.

Rural Ry. of Manitoba.—The Manitoba Legislature has amended the company's powers in certain particulars. The amendments affect a number of details as to the payment of fee, etc., for the procuring of the act, the advertising of plans for construction, and other matters, and authorize the building of a line from St. Vital, to Winnipeg, St. Boniface, Transcona, Birds Hill, Portage la Prairie, East Selkirk, Stonewall, Morris, Emerson and other points. A second act authorizes the municipality of St. Vital to enter into a contract with the company to build a line from Winnipeg to the site of the new provincial Agricultural College. C. E. Lewis, Minneapolis, Minn., is President of the company.

Several meetings have been held with a view of promoting the building of an electric railway to connect up Oak Bluff, Sanford and La Salle, in Macdonald municipality, Man. It was proposed to negotiate with the Rural Ry. of Manitoba, in respect of the projected line. (April, pg. 365, and Dec., 1910, pg. 1069.)

Simcoe Ry. and Power Co.—As a result of a vote of the ratepayers of Midland, Ont., to arrange with the Hydro-Electric Power Commission for the supply of power, a contract has been made with this company for the supply of current. (Sept., 1910, pg. 783.)

Stratford Ry. Co.—The Ontario Legislature has incorporated a company with this title to build the lines named. The company is asking the Stratford, Ont.,

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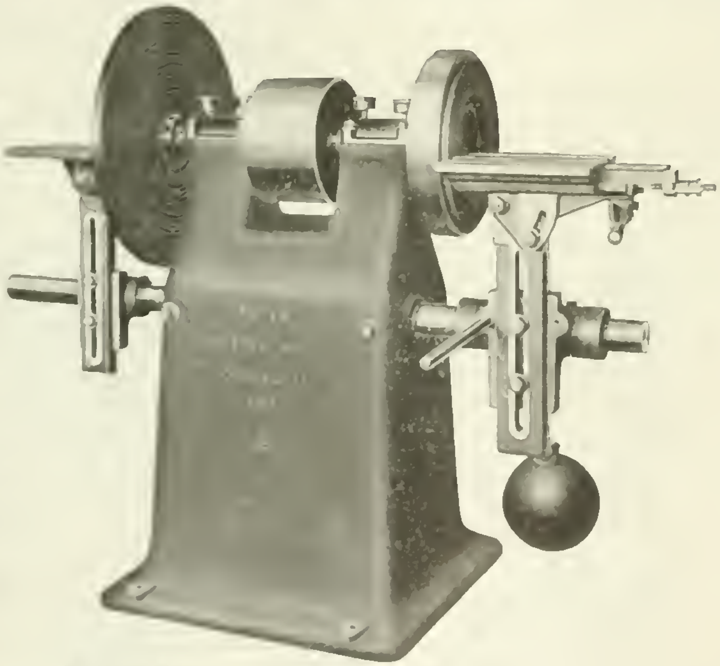

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city council for permission to separate the city and the radial portions of the project to enable the company to finance the undertaking, and to grant an extension until the end of June for making a start. J. W. Graham, and several of the directors waited on the committee of the council which has the matter in hand, May 10, and discussed the matter. The company, Mr. Graham said, had the money to proceed with the construction in the city as soon as the amendment was made in the agreement. The committee recommends that this be done at the next meeting of the council. (Mar., pg. 261.)

Sydney, East Bay and New Waterford Monorail Co.—The Cape Breton county council has granted the company a bonus of $1,000 a mile and exemption from taxation for five years in aid of its projected railway. The company is inviting subscriptions to its capital stock, of which 25% must be paid up prior to organization. J. P. Joy, 127 Pitt St., Sydney, N.S., is acting as the representative of the promoters

Toronto and York Radial Ry.—The plan of the private right of way which the company desires to use in order to take its line off Yonge St., from Balmoral Ave., to the C.P.R. crossing, will cross Farnham and Woodlawn avenues once, and Walker, Wickson, and Birch avenues twice, with the loop. The station will front on Cottingham St. The city is opposing the adoption of the route.

The building of a double track line on the Lake Shore Division near Mimico Creek is well advanced, and the connections are expected to be made early in June. A private right of way has been secured for other portions of the line, and construction is expected to be gone on with at an early date. (May., pg. 455.)

Toronto Civic Street Railway.—The Ontario Railway and Municipal Board is desirous of obtaining considerable informaton from the city before it approves of the bylaws for the proposed civic car lines. The information asked for is specified in an order made May 9, and the city's legal department started in at once to prepare it. The question of the operation of the lines when constructed is being considered and the Board of Control, May 17, decided to enter into negotiations with the Toronto Ry. for an interchange of traffic at certain points.

It is estimated that the proposed line on St. Clair Ave., which will extend from Avenue Road to the G.T.R. tracks, 2.65 miles, will cost $280,928, and that the line on Gerrard St. east, which will extend from Greenwoods Ave., to Main St., 1.85 miles, will cost $225,780. The cost of operating a 24 hour service on the St. Clair Ave. line is estimated at $201.61 a day, and on the Gerrard St. line at $140.74 a day. (May, pg. 455.)

Toronto Ry.—The Ontario Railway and Municipal Board has authorized the company to build a loop on Louisa St., and to extend its lines in various parts of the city. Work was re-started April 14, on the extensions commenced during 1910, of which about two miles were built.

Work has been in progress since the beginning of May on the Wilton Ave. line, on the Adelaide St. line, and on the new Front St. line. The new car barns on the corner of Lansdowne Ave. and Paton St., have been completed, and were put in use May 15. (Feb., pg. 169.)

Toronto Suburban Ry.—Application is being made for permission to lay a turnout on Dundas St., near St. John's road, but the site is objected to.

No definite action has been taken in the way of the construction of the extensions of the line for which the Ontario Legislature recently gave the company a year to go on with. (May, pg. 455.)

Tsimpsian Light and Power Co.—The terms of an agreement have been submitted by the company to the city council of Prince Rupert, B.C., providing among other things for the building of an electric railway. The line, which would be first built would extend from one end of the city to the other, and additional lines would be built as required; the company would look after the roadway between the tracks and for a certain distance on either side, and pay to the city a percentage on the gross earnings, starting at 3 % and rising to 10 %. R. Brutinel is Manager of the company.

Vancouver,-Stanley Park.—Three proposals have been submitted before the Vancouver Park Commissioners, with the object of providing trnasportation in Stanley Park. One plan is submitted by the Electric Railways Construction Co., of which G. A. Ashwood is Managing Director. This company desires to build a double track electric railway from the southerly end of the proposed causeway across Coal Harbor, across the park to a convenient point east of Prospect Point, andd then along the seafront to near Siwash Rock. A second proposal is for the building of a miniature electric railway through the unimproved portions of the park, but touching at Brockton, Prospect Point, Siwash Rock and other points; and the third proposal is to provide gasoline motor cars, or electric cars operated on rails or by the trackless trolley system. The first plan is rather favored, but the Commissioners have taken the other three into consideration.

Western Central Ry.—A meeting of shareholders has been called to be held in the offices of T. Drummond, Toronto, June 5, to authorize the issue of first mortgage bonds to an amount of $35,000 a mile for single track, and $55,000 a mile for double track lines. J. S. MacDiarmid, is interim Secretary of the company. (Mar., pg. 261.)

Winnipeg Electric Ry.—A Winnipeg dispatch May 17, states that an issue of new capital stock is being arranged with a view of providing funds for present and future extensions of the lines and power plant.

Plans have been submitted to the city council for extensions on Mountain Ave. Work has been started on a line on Donald and Princess St., to connect the Broadway and Higgins Ave. lines; and on the construction on a line on Garry, Ethel, Kennedy and Sargent Streets. (May, pg. 453.)

◆

Electric Ry., Finance, Meetings, Etc.

British Columbia Electric Ry.—Gross earnings for March, $363,766; working expenses $229,658; net operating earnings $134,108; renewal funds $29,770; net earnings, $104,338; approximate income from investments, $20,000; net income, $124,338, against $255,423 gross earnings; $159,681 working expenses; $95,742 net operating earnings; $17,852 renewal funds; $77,890 net earnings; $16,500 approximate income from investments; $94,390 net income for March, 1910. Aggregate gross earnings for nine months ended Mar. 31, $3,072,500; net earnings $1,221,113, against $2,224,324 aggregate gross earnings, and $955,538 net earnings for same period 1909-10.

Halifax Electric Tramway.—Railway receipts for April, $16,925.71. against $16,114.66 for April, 1910. Receipts for two weeks ended May 14, $7,615.36, against $7,020.46 for same period 1910.

London St. Ry.—Gross earnings for April, $20,671.96; expenses, $15,684.03; net earnings, $4,987.93; deductions, $2,963.05; net income, $2,024.88; aggregate gross earnings for four months ended Apr. 30, $81,752.82; expenses, $60,749.97; net earnings, $21,002.85; deductions, $9,452.10; net income, $11,550.75.

Montreal St. Ry.—Passenger earnings for April, $367,410.15; miscellaneous earnings, $4,898.93; total earnings, $372,309.08; operating expenses, $200,718.92; net earnings, $171,590.16; city percentage on earnings, $29,544.10; interest on bonds and loans, $15,486.70; rental leased lines, $607.10; taxes, $4,700; total charges, $50,337.90; surplus, $121,252.26; expenses per cent. of earnings, 53.91, against $335,941.37 passenger earnings; $8,823.74 miscellaneous earnings; $344,765.11 total earnings; $190,842.05 operating expenses; $153,923.06 net earnings; $25,298.33 city percentage on earnings; $14,732.98 interest on bonds and loans; $552.90 rental leased lines; $4,000 taxes; $44,584.21 total charges; $109,338.85 surplus; 55.35 expenses per cent. of earnings for April, 1910. Aggregate total earnings for seven months ended Apr. 30, $2,575,223.95; operating expenses, $1,571,191.54; net earnings, $1,004,032.41; total charges, $279,543.29; surplus, $724,489.12; expenses per cent. of earnings, 61.01, against $2,337,001.32 aggregate total earnings; $1,407,826.42 operating expenses; $929,174.90 net earnings; $257,169.97 total charges; $672,004.93 surplus; 60.24 expenses per cent. of earnings for same period 1909-10.

Toronto Ry. — Gross earnings for March, $374,110; working expenses, maintenance, etc., $201,574; net earnings $172,536, against $342,000 gross earnings; $184,703 working expenses, maintenance, etc.; $157,297 net earnings for March, 1910. Aggregate gross earnings for three months ended Mar. 31, $1,067,963; working expenses, maintenance, etc. $572,943; net earnings $495,020, against $974,264 aggregate gross earnings; $526,802 working expenses, maintenance, etc.; $447,462 net earnings for same period 1910.

Winnipeg Electric Ry.—Gross earnings for March, $316,714; working expenses $166,586; net earnings $150,128, against $254,070 gross earnings; $1,33,265 working expenses; $120,805 net earnings for March 1910. Aggregate gross earnings for three months ended Mar. 31, $972,359; working expenses. $517,010; net earnings $455,349, against $813,479 aggregate gross earnings; $417,733 working expenses; $395,746 net earnings for same period 1910.

A quarterly dividend of 3% has been declared, making the annual dividend 12%, an increase of 2% on previous dividends.

◆

Electric Railway Dictionary.—With the approval of the American Electric Railway Association, the McGraw Publishing Co., has issued an Electric Railway Dictionary, which gives definitions and illustrations of the parts and equipment of railway cars and trucks, and of everything else connected with electric railway tracks, equipment, rolling stock etc. The plan adopted in the work is to give a concise and exact definition and refer to an illustration. The definitions are arranged alphabetically, and extend to 63 closely printed pages of standard technical magazine size The close on to 2,000 illustrations, are well drawn and printed. The volume is an interesting one, and will be found useful in every electric railway office and shop. The price of the book is $5. It can be obtained through the Railway and Marine World's book department.

The Dominion Power and Transmission Co., Hamilton, Ont., has received three interurban cars from the Preston Car and Coach Co., Preston, Ont.

The Montreal and Southern Counties Ry. flat car, which is being built at the G.T.R. shops, Montreal, as mentioned in our last issue, will be a converted frame of a G.T.R. flat car, 381 ft. long, and 8 ft. 1½ ins. wide over side sills. with 5 by 5 ft. cab at one end of the car for motorman.

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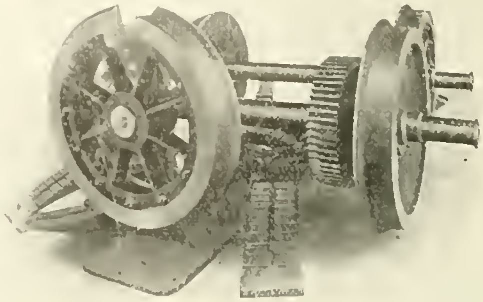

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Electric Railway Notes.

The Montreal St. Ry. recently received two trailer cars from the Preston Car and Coach Co., Preston, Ont.

The Calgary Municipal St. Ry. has received four single truck cars from the Preston Car and Coach Co., Preston, Ont.

The Guelph Radial Ry. has ordered two double end pay-as-you-enter cars from the Preston Car and Coach Co., Preston, Ont.

The Ottawa Electric Ry. has ordered one heavy double broom electric steel frame snow sweeper from the Ottawa Car Co., Ottawa.

The Moose Jaw Electric Ry. has received four 21 ft. car bodies, 31½ ft. over all, mounted on 21-E trucks, from the Ottawa Car Co., Ottawa.

The Windsor, Essex and Lake Shore Rapid Ry., Kingsville, Ont., has ordered one baggage car from the Preston Car and Coach Co., Preston, Ont.

The British Columbia Electric Ry. has ordered 16 Hart-Otis dump cars, 60,000 lbs. capacity, from the Hart-Otis Car Co., Ltd., Montreal. These will be built by the Canadian Car and Foundry Co., Montreal.

The Ottawa Electric Ry. has been notified that the Dominion Government will not renew the contract for the carriage of mails to and from the trains, as it is proposed to use automobiles. The contract expires Sept 1. The amount paid the company under the present contract is $8,000 a year and it is said to have asked for an advance to $15,000.

The Toronto and York Radial Ry. has ordered three double ended pay-as-you-enter cars, mounted on trucks with G.E. 80 motors, quadruple equipment, double end control, with 12 walk-over and four longitudinal seats, upholstered in rattan, from the Preston Car and Coach Co., Ltd., Preston, Ont. They will be finished in cherry, inside and out, and fitted with sliding door on one side of vestibule and automatic folding doors on the opposite side. The car bodies will be 33½ ft. long, and the cars will be 48½ ft. long over all.

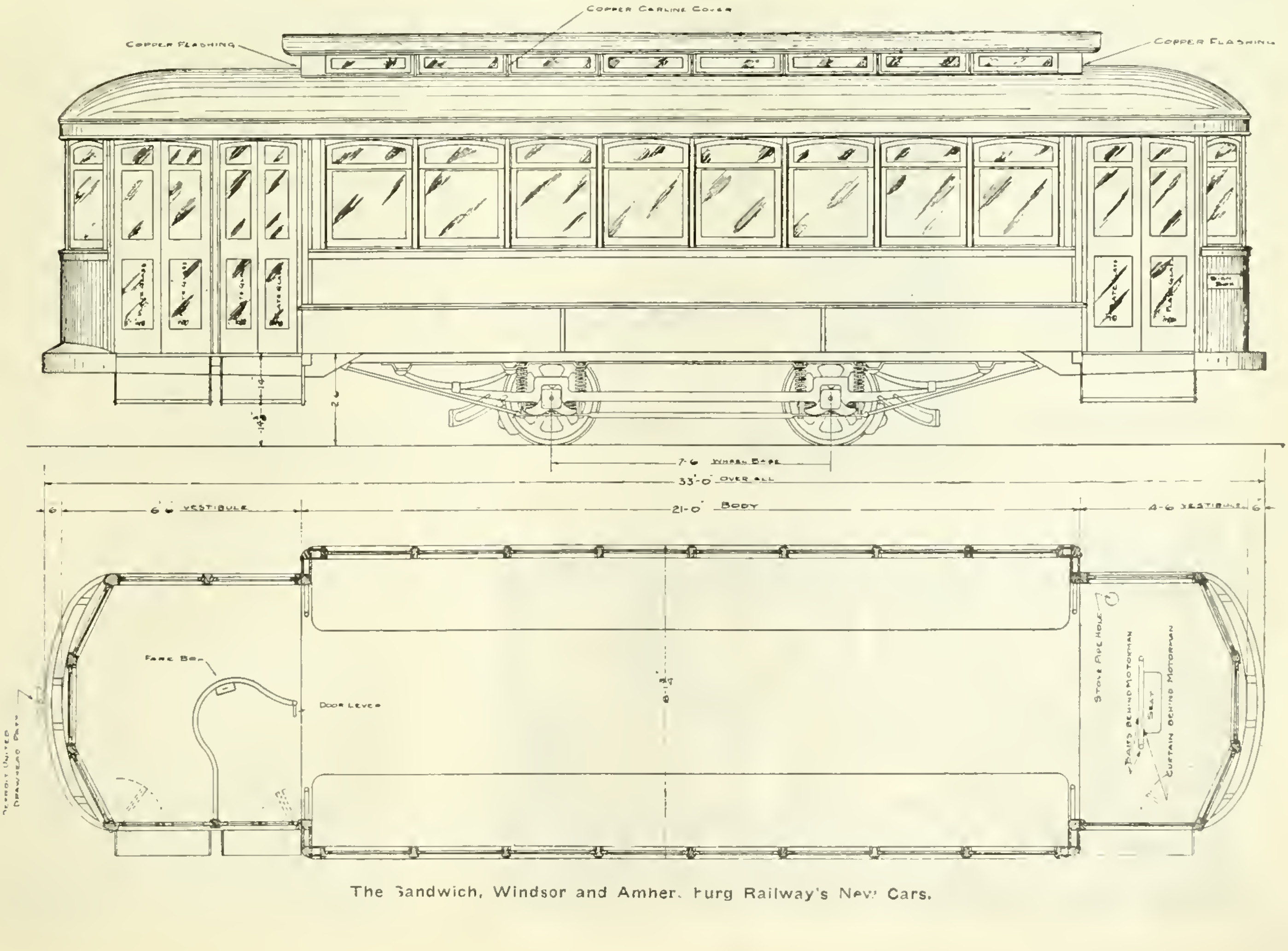
The two double ended pay-as-you-enter cars, which the Guelph Radial Ry. is having built by the Preston Car and Coach Co., Preston, Ont., will be mounted on 27-G-1 trucks, equipped with Westinghouse 108-B-2 motors, quadruple equipment, double end control. They will be finished in cherry on the inside and painted outside, and fitted with 10 walkover and four longitudinal seats, with spring seats and backs, upholstered in rattan. The heating system will consist of 14 heaters, supplied by the Consolidated Car Heating Co., system 192-W. The vestibules at each end will be extra long, being 7½ ft. over all, with sliding door at one side and a double folding automatic door on the opposite side.

The Montreal and Southern Counties Ry. (G.T.R.), has ordered one electric motor combination passenger and baggage car, to be built in the G.T.R. shops, Montreal, in addition to the one previously ordered, as mentioned in our last issue. Following are the chief details:—

Length over buffers	49 ft. 4 ins.
Length over end sills	38 ft. 0 ins.
Width over side sheathing	8 ft. 1½ ins.
Width inside, clear	7 ft. 4¾ ins.
Inside length of passenger compartment	18 ft. 6 ins.
Inside length of smoking compartment	10 ft. 6 ins.
Seating capacity, passenger compartment	28
Seating capacity, smoking compartment	16
Approximate length, baggage compartment and motorman's cab	13 ft. 5 ins.
Baggage doors width	3 ft. 6 ins.
Motors	Westinghouse

S. W. & A. Railway Cars.

The diagrams on this page show the elevation and floor plan of the six cars which the Sandwich, Windsor and Amherstburg Ry. has ordered from the Preston Car and Coach Co. They will be omnibus body, single truck cars, mounted on 21-E trucks, 7½ ft. wheel base, 33 in. wheels. They are for single end operation. The width over sills will be 7 ft. The width over posts above the belt rail 8 ft. 1¾ in. The front vestibule will be 4½ ft. long, the rear vestibule 6⅓ ft. long. There will be one pair of automatic folding doors in the front vestibule, and two pairs of automatic folding doors in the rear vestibule. The doors in the rear vestibule may be operated independently of one another by the conductor, who will have the controlling mechanism located where he stands inside of the P.A.Y.E. railing. The steps in both the front and rear end will operate along with the door, so that when the door is closed the steps are folded up. The same handle that controls the door will control the steps also. The same thing occurs in the front. There will be no bulkhead in either end of the car body. The lower panels of both front and rear vestibule doors will be ⅜ in. plate glass. These are said to be the first cars in Canada equipped in this way. The interior of the cars will be finished in cherry, as also the interior of vestibules. The upholstering will be leather, with spring cushions and backs. Each car will be equipped with two sand boxes, register rods, electric bells and hand brakes.



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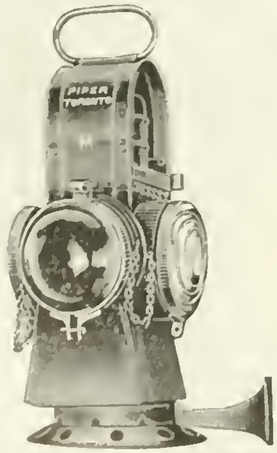

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Canadian Lake Protective Association.

The English underwriters were the first to give the Canadian Lake Protective Association full recognition, and announced in good time a rate of 5¾% as a basis rate for vessels belonging either to this association or to the Great Lakes Protective Association of Cleveland, Ohio Both associations were thus placed exactly on the same basis and at a rate which was ¼% better than the basis rate of last year. On the other hand, underwriters in New York, under considerable pressure from those interested in the Great Lakes Protective Association, which organization through its representatives was much opposed to the formation of the Canadian Association, hesitated in coming to a conclusion, taking a little time to make up their minds regarding the various objections which were raised against us. Ultimately they announced for the Canadian Association the same rate quoted in the English market, but as a concession to the U.S. organization at Cleveland, announced a rate for its vessels of 5½% or ¼% less than that which they quoted to the Canadian Association's members.

The result, of course, is that members of the Canadian Association are placing insurance so far as possible in the English market, where they receive equal recognition with the Great Lakes Protective Association. Some fleets, however, have a good deal of their insurance covered in New York, and these at present suffer the discrimination of ¼ of 1% mentioned to the extent to which they cover their risks there. There is no doubt whatever that the Canadian Association would have had fair recognition in New York just as it had in London, but for the opposition of parties opposed to its organization. As it is the discrimination is probably only temporary, and prominent underwriters in New York announce that full recognition is withheld only until the association gets in full working order, and shows that it can carry out its present intentions. It is to be noted that its membership is pretty well comprehensive of the Canadian fleet of steamers of the class it was intended to cover, and that it is receiving the hearty support of vessel owners enrolled in it. Its success seems to be assured, and doubtless it will shortly receive the full recognition it deserves.

In the meantime it has made arrangements with the Dominion Department of Railways and Canals to co-operate for the benefit of the service. It has been arranged that the various canal superintendents shall keep the association's office posted regarding water conditions, and shall make prompt report to the association of any vessels being overloaded. Casualty report forms are in the hands of the masters of all the steamers enrolled in the association, and full records are being kept by the association of the various accidents, slight or serious, which may occur. Correspondence has taken place with owners of the vessels outside as well as in the association, and United States as well as Canadian, whose masters appear to have violated the regulations or sailing rules.

It is not apparent why the Great Lakes Protective Association of the U.S. and the Canadian Lake Protective Association cannot both become effective organizations, working together for the good of the whole system of navigation on the lakes, receiving equal recognition from underwriters, and altogether managing to control conditions in such a way that underwriting can be managed with profit to the underwriters and without unreasonable expense to owners. It is to be regretted that any opposition was put in the way of the Canadian organization at the very outset. At present that association aims to do more than the other by exercising direct control over the masters of the enrolled vessels. It is hoped that it will have a fair chance to prove its efficiency in this respect.

Wireless Telegraphy on The Great Lakes.

The following item appeared in our April issue:—

"In connection with recent press reports to the effect that the Northern Navigation Co. intended to equip its vessels with wireless telegraph apparatus this year, we are officially advised that as there are no receiving stations on the Canadian side of the lakes, it would be useless to so equip the vessels at present."

N. G. Neill, Industrial Commissioner, Port Arthur, Ont., has written us in reference to the above as follows:—

"A wireless telegraph station was erected at Port Arthur in the fall of 1910, and established communication with the other stations on Lake Superior, namely, at Isle Royal, Grand Marias, Duluth and Calumet. It was very shortly after the station was in operation that the advantages of the wireless telegraph were demonstrated. The steamer Dunelm of the Inland Lines went ashore on Isle Royal, and although she was not equipped with the apparatus, a freighter which had the wireless telegraph apparatus strung between her masts was within sight of her distress rockets, and immediately flashed the distress signals to the wireless station at Port Arthur. The powerful tug, James Whalen, was immediately sent to her assistance. The advantages of this invention were further shown when the wrecking outfit was working along side of the Dunelm. By a constant exchange of messages being kept up between the wreck and Port Arthur, the boats were warned of approaching storms and enabled to seek shelter in the neighboring bays during operations. The hazardous work of towing the wreck to the dry docks at Port Arthur were only undertaken after the Meteorological Station there had given out a report that fine weather might be expected for the next 24 hours, and this message was conveyed to the scene of the wreck 60 miles out in Lake Superior.

"The Northern Navigation Company has recognized the advantage which the installation of wireless telegraphy is to any steamer, and the additional feeling of security which it gives her passengers, and placed an order on April 19 for the equipment of the Hamonic and the Huronic. It is the company's intention to equip all its boats, both freight and passenger, during the summer. A wireless station is to be erected at Sault Ste. Marie, Ont., as soon as they can get the apparatus on the ground, and it is understood that arrangements will also be made for the establishment of stations at Sarnia, Owen Sound and Midland on the Georgian Bay. Boats will therefore never be out of communication with land on Lakes Huron and Superior, where probably the heaviest traffic on the Great Lakes is concentrated."

The paragraph in our April issue to which Mr. Neill refers was based on official information written us by the Northern Navigation Co.'s management and was undoubtedly correct so far as the management's intentions at that time were concerned. We are now officially advised by the management that it has been decided to equip the three Lake Superior boats, Hamonic, Huronic and Saronic, but that the other boats of the fleet will not be equipped at present.

Arrangements have been completed for the installation of wireless telegraph equipment on three barges of the Canadian Towing and Wrecking Co., Port Arthur, these being the Empire, Imperial and Luddington, and it is also said that, in the near future, the C.P.R. five Upper Lake boats, will also be similarly equipped. It is claimed that the apparatus installed on lake vessels is capable of transmitting and receiving messages up to 250 miles.

The wireless telegraph station at Port Arthur was built and is being operated by the Marconi Wireless Telegraph Co. of Canada, but we are advised that it may be transferred to the Dominion Government as soon as the Government's policy in this connection is defined. It is reported that wireless stations are to be established at Sault Ste. Marie, Sarnia, Owen Sound and Midland. On May 15 we were officially advised that the matter was still under the Government's consideration, but that no decision had been arrived at as to whether the stations would be built by the Government or by private enterprise. It is to be hoped that a prompt decision will be arrived at, as there does not appear to be any reason why it should be delayed.

Lake Grain Shipments.

The following statement, prepared by F. E. Gibbs, Grain Inspector, Fort William, Ont., shows the bushels of grain shipped by vessels from Fort William and Port Arthur, of the 1910 crop, from the close of navigation, 1910, to Apr. 30. The last two figures in each column represent lbs.

Destination.	Wheat.	Oats.	Barley.
Canadian ports:			
Goderich ..	308,706.50	130,000.00	....
Kingston ..	417,000.00	336,481.20	....
Montreal ..	688,523.50	293,126.26	12,818.12
Owen Sound	75,000.00	....	....
P Colborne.	635,515.20	....	....
Pt. Edward.	74,000.00	....	....
Tiffin	1,007,402.40	....	....
Vic. Harbor.	136,500.00	....	....
	3,342,648.40	759,608.12	12,818.12
Foreign ports:			
Buffalo	2,230,253.50	....	....
Depot Harbor	113,108.40	....	....
	5,686,011.10	759,608.12	12,818.12

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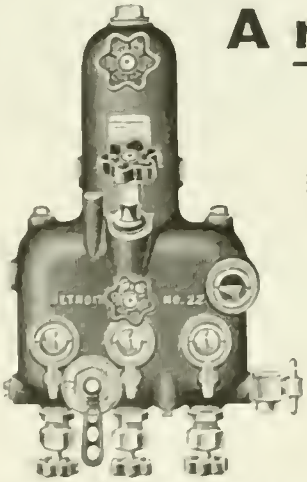

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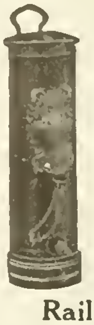

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The New Steamboat Dalhousie.

The Niagara, St. Catharines and Toronto Navigation Co.'s new steamboat which has been named Dalhousie, is nearing completion. She has a length of 193 ft. between perpendictulars, and a total length over all of 200 ft. 7 in., with a breadth of 38½ ft., and is designed to have an extreme draft of 9 ft., without freight or passengers. She has exceptionally fine, clean lines, the hull being of steel throughout, and is very heavily built for a vessel engaged in inland waters. The frames and beams are of 6 in. channel steel spaced 24 in. centres. The shell plating is above rule requirements for a vessel of this size, and is fitted with heavy doublings in the vicinity of the water line. The main and lower decks will be plated entirely over with steel, and steel pillars and girders support all decks. Four watertight bulkheads subdivide the vessel transversely into five compartments.

On the lower deck forward accommodation is provided for the crew, including officers and crew's mess, as well as sleeping apartments for the crew. Lockers for clothing are provided in the rooms and steel stairways are provided for access to main deck. Abaft of the engines is the luncheon room, with ample accommodation for the serving of quick meals. This room is furnished with tables and leather covered settees. The stairway from the lunch room lands in the entrance on the main deck.

The passenger gangway, 4 ft. wide, leads into a 9 ft. entrance hall. On the left are the stairways leading up to the observation deck and down to the lunch room. On either side of the stairways are the entrances to the ladies' saloon, off which are the purser's and stewardess' rooms. The saloon is upholstered in leather with ample seating accommodation. Back of this cabin will be located the ladies' lavatory and retiring rooms. The decoration of the ladies' saloon will be of red oak panelled wainscoting, and red oak pilasters with compo board panels. The floor is to be covered with interlocking rubber tiling. To the right of the entrance hall is the engine room, also men's lavatory and purser's office. The entire space forward and alongside the engine room is devoted to freight space large enough to take care of about 300 tons.

The main stairway to the upper cabin is constructed of red oak. Entering the cabin something novel in marine equipment will be noticed. Besides the usual lounges, easy chairs, etc., there are reversible trolley car seats capable of seating 70 people. This cabin is about 120 by 24 ft., a portion of which is occupied by six comfortable staterooms. The whole is tastefully decorated in white enamel and natural wood to harmonize with the other appointments of the vessel. Heavy plain brown linoleum covers the floor. The windows are of the drop style of double plate glass. From the centre of observation cabin a stair leads to the sun parlor on the gallery deck above. The stairway is of same design as the main staircase on main deck. The parlor is of the same general design as the observation cabin, settees, etc., being upholstered in close woven cane. Forward of the sun parlor is the smoking room, which is panelled in oak, the seats upholstered in leather of a color to harmonize with the room. The floor is of interlocking rubber tiling cemented to the floor. The windows are of the same type as those of the other cabins. Adjoining the smoking room forward are the officers' quarters and pilot house. These rooms are furnished with metal fittings and decorated in white enamel. Outside the observation cabin are cabin slatted wood seats 21 ins. wide and 18 ins. high.

The boat will be driven by a single solid cast iron propeller 9 ft. in diameter, having four blades right hand; fitted on to a tail shaft of 9¾in. diameter, the crank and thrust shafts being 9¼ in. The propelling power consists of a triple expansion three crank engine, with cylinders 18 in., 29 in. and 48 in. diameter, and 31 in. stroke, to which steam will be supplied by two Scotch boilers for 180 lbs. working steam pressure, which will propel her about 19 miles an hour. The boilers are 13 ft. 7 5-16 in. by 11 ft. over all, with tubes of 3¼ in. outside diameter, having a total heating surface of about 4,200 sq. ft. and a grate area of 120 sq. ft. There are three corrugated furnaces in each boiler with grates 6 ft. long. They are fitted with duplex marine type boiler safety valves, all attachments being of best welded steel. The smoke stack is of the double type, the outer one about 7½ ft. in diameter and 53 ft. long. The enclosure around the smoke stack, engine opening, etc., are of steel insulated to insure safety from fire, and all upper wood work is supported by steel girders and stiffened by web frames.

There will be ample provision made for the safety of the passengers. These

LIST OF STEAM VESSELS REGISTERED IN CANADA DURING APRIL, 1911.

Name	No.	Where and When Built.	Engines, etc.	Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
Buena Vista	130,325	Kingston, Ont, 1911	Screw 9 n. h. p.	93 6	18.8	6.8	224	160	Kingston, Ont.	J. H. Davis, Kingston, Ont.
Elmarsh	130,450	Vancouver, B.C., 1911	" ½ "	25.0	9.0	4.2	5	4	Vancouver. B.C.	A. Marshall, Vancouver, B.C.
Grand Manan	130,245	Liverpool, N.S., 1911	" 32 "	130.0	26.3	11.0	363	180	Liverpool, N.S.	Grand Manan Steamship Co., Grand Manan, N.B.
Hobo	126,346	Port Clyde, N.S., 1911	" 10 "	35.0	12.4	5.0	12	12	Barrington, N.S.	G. D. Wall, Barrington, N.S.
Hugh Stalker	122,558	Collingwood, Ont., 1910	" 21 "	72.3	15.7	6.3	43	29	Collingwood, Ont.	G. Stalker, Collingwood, Ont.
Knym	130,451	Vancouver, B.C., 1911	" 1 "	35.0	8.0	3.8	9	7	Vancouver, B.C.	T. L. Longhurst, Vancouver, B.C.
Lelia and Frances	122,599	Lubec, Me., 1909		40.1	12.2	4.8	14	12	St. Andrews, N.B.	J. L. Guptill, Grand Harbor, N.B.
Matheson (1).	127,868	Rocky River, O., 1877	" 2 "	42.0	8.6	5.0	20	11	Sault Ste. Marie, Ont.	J. K. Matheson, Sault Ste. Marie, Ont.
Max L.	97,109	Port Burwell, Ont., 1911	" 25 "	67.5	15 0	7.2	45	33	Port Burwell, Ont.	L. Lewis, *et al* Port Burwell, Ont.
Merry Sea	130,452	Vancouver, B.C., 1911	" 9 "	54.3	10.0	5.0	25	17	Vancouver, B.C.	T. G. McBride, Vancouver, B.C.
Minoca	126,913	Dartmouth, Eng., 1910	" 28 "	83.5	19.1	9.4	110	48	Halifax, N.S.	Minister of Agriculture, Ottawa.
N. Vancouver Ferry No. 3	130,447	North Vancouver, B.C., 1910	" 42 "	145.0	29.1	12.4	1176	792	Vancouver, B.C.	North Vancouver City Ferries, Ltd., Vancouver, B C.
No. 508	129,529	Renfrew, Scotland, 1910	" 108 "	200.3	36.6	12.8	748	435	"	Minister of Public Works, Ottawa.
Pharaon (2)	126,952	New Whatcom, Wash., 1899	" 10 "	53.5	12 4	6.0	28	18	Victoria, B.C.	Pacific North West Fisheries, Ltd., Victoria, B.C.
Rapids Prince	130,418	Toronto, 1911	" 101 "	96.6	37.0	8.2	1384	955	Montreal	Richelieu & Ontario Navigation Co., Montreal.
Sea Rose	130,446	United States	" 2 "	31.0	9.3	3.3	11	8	Vancouver, B.C	J. B. Law, Vancouver, B.C.
Skip	130,471	Lunenburg, N.S., 1903.	" 2 "	42.0	10.6	5.6	12	11	Lunenburg, N.S.	A. Mason, Eastern Point, N.S.
T. J. Clark	126,838	Toronto, 1911.	" 4 "	69.0	20.0	6.0	75	51	Toronto	Clark, Ltd., Toronto.
Tiono	126,799	New Westminster, B.C., 1911	" 5 "	32.2	8.5	4.0	9	6	New Westminster, B.C	A. Speck, New Westminster, B.C.
Tramontana	130,449	United States	" 3 "	60.0	16.0	6.0	23	19	Vancouver, B.C.	Kingcome Navigation Co., Vancouver, B.C.
Wimbril	130,448	Vancouver, B.C., 1911	" 1 "	30.5	7.3	4.2	9	6	"	G. D. Jukes, Vancouver, B.C.
Yucalta	130,453	" 1910	" 2 "	36.4	8.8	3.7	12	8	"	C. W. Maxon, Vancouver, B.C.
Zoa H.	130,470	Tancook, N.S., 1911	" 4 "	44.8	12.5	6.5	17	16	Lunenburg, N.S.	R. Fudge, North Sydney, N.S.

(1) Formerly, Antelope. (2) Formerly, Petrel.

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA DURING APRIL, 1911.

Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners
A. G. Eisnor	130,466	Mahone Bay, N.S., 1911	Schr.	92.8	25.8	10.0	93	Lunenburg, N.S.	A. Ernst, M. O., Mabone Bay, N.S.
Artisan	130,465	Shelburne, N.S., 1911	"	110.0	26.0	10.5	98	"	J. Walters, *et al* Lunenburg, N.S.
Alice M. Pike	126,667	" 1911	"	85.0	23.0	9.2	86	Shelburne, N.S.	B. Keeping, Belleoram, Nfld.
Benjamin C.Smith	130,468	LaHave, N.S., 1911	"	105.8	26.6	10.2	100	Lunenburg, N.S.	B. Smith, M.O., Lunenburg, N.S.
Benevolence	126,830	Liverpool, N.S., 1911	"	110.0	26.4	12.1	99	"	F. Creaser, M.O., LaHave, N S.
Charlotte	79,746	Hearts Delight, Nfld. 1879 Hearts Content, Nfld. 1889	"	59 2	19.0	7.6	44	Arichat, N.S.	C. Boudrot and A. LeBlanc, Poulamon, N.S.
Doris V. Myra	130,463	Lunenburg, N.S., 1911	"	106.4	26.2	10.6	99	Lunenburg, N.S	J. Backman, M.O., Riverport, N.S.
Forest Maid	126,717	Newburyport, Mass., 1877	"	67.2	18.2	6.0	43	St. John, N.B.	J. F. Paul, Beaver Harbor, N.B
Gigantic	130,464	LaHave, N.S., 1911	"	97.6	25.8	10.5	99	Lunenburg, N S.	D. Parks. M.O., Lunenburg, N.S.
Hattie Loring	130,422	Goldsboro, Me., 1895	"	64.9	19.4	6.5	50	St. Andrews, N.B	A. W. Porter and H. E. Bailey, Westport, N.S.
Horace Taber	130,324	St. Clair, Mich., 1867	"	135.8	26.6	9.8	236	Kingston, Ont	F. R. Barnbardt, Deseronto, Ont.
Jennie E. Duff	130,467	Bridgewater, N.S., 1911	"	106.8	26.5	10.5	99	Lunenburg, N.S	W. Duff, M.O., Lunenburg, N.S.
Laurent au Coin	126,574	Grand Etang, N.S., 1911	"	36.0	10.6	6.6	10	Port Hawkesbury, Ont	Laurent au Coin, Cheticamp, N.S.
Lewis H. Smith	130,462	Lunenburg, N.S., 1911	"	108.0	26.1	10.5	98	Lunenburg, N.S.	W. C. Smith, M.O., Lunenburg, N.S.
Lillie E. Melanson	122,040	Gilbert's Cove, N.S., 1911	"	80.2	23.4	8.8	90	Weymouth, N.S	B. N. Melanson, Gilbert's Cove, N.S.
Mary F. Hyde	126,668	Allendale, N.S., 1911	"	87.4	24.9	9.0	78	Shelburne, N.S.	W. Forsey, Grand Bank, Nfld.
Natoma	130,469	Mahone Bay, N.S., 1911	"	94.8	25.0	10.3	92	Lunenburg, N.S.	W. Duff, M.O., Lunenburg, N.S.
Nuage Gris	126,929	Limoilou, Que., 1901	"	66.8	20.3	5.6	38	Quebec, Que.	F. Boulianne, Escoumains, Que.

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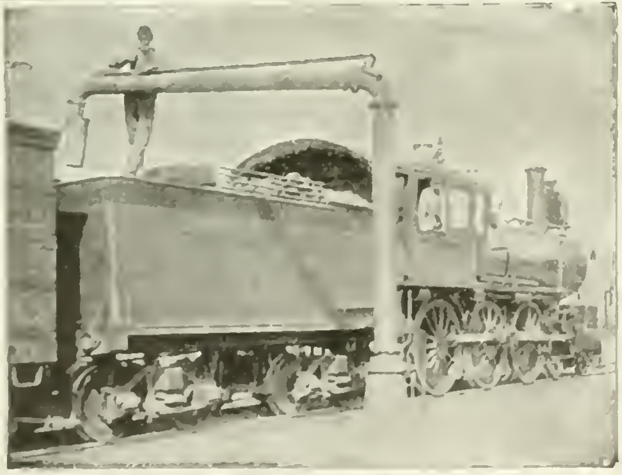

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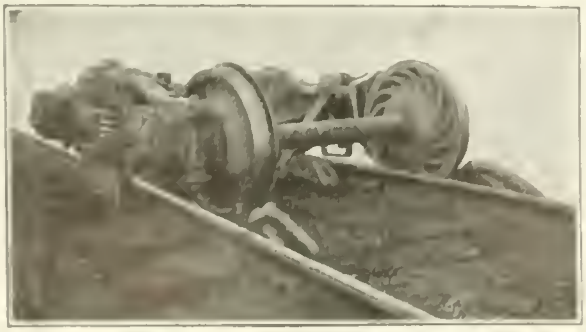

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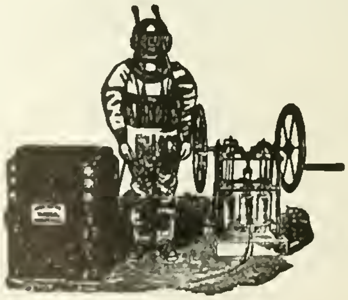

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include two 22 ft. life boats, two 16½ ft. life rafts, one 16 ft. working boat, suspended on davits, and fitted with quick launching apparatus; two seat rafts each provided with three large galvanized steel tanks for buoyancy; and 1,050 solid cork life jackets. Four cork ring buoys are also provided, and will be hung along the rail of the vessel for immediate use in case any one falls overboard.

The usual complement of fire fighting appliances is supplied and in addition a fire main led from steam pumps to all decks is provided, so arranged that any part of the boat can be reached by a 50 ft. hose length. The pilot house, as stated is located on the upper or gallery deck, and has communication with engine room by telegraph system, which is arranged to work from the gallery deck also. There is in addition, a speaking tube from the pilot house to the engine cabin.

The boat is equipped with steam heating apparatus, with radiators fitted in smoking room, sun parlor, observation cabin and main deck. She is supplied with steam steering gear, and will be operated by telemotor from the pilot house. Light will be supplied from an electric generator from the engine room of 15 kilowatt capacity, the boat being wired for 200 lights, with a 13 in. searchlight on the pilot house operated from within. All cabins are fitted with lacquered brass electric fixtures. Drinking fountains are located at convenient places throughout the vessel for ice water.

The steamer will be painted to harmonize with the present colors used on the Garden City, viz., above guard, light buff, rail, dark green, hull below waterline, red, and waterline to guard, light slate.

A comparison as to the size of the boat with other well known boats will give our readers a better idea of her dimensions:

Name.	Length.	Beam.
Corona	270.0 ft.	32.0 ft.
City of Montreal	220.0 ft.	32.5 ft.
City of Ottawa	220.0 ft.	32.5 ft.
Dalhousie	200.0 ft.	38.0 ft.
Dundurn	190.0 ft.	30.2 ft.
Macassa	178.4 ft.	24.1 ft.
Modjeska	178.0 ft.	31.1 ft.
Garden City	177.9 ft.	26.1 ft.
Lakeside	121.0 ft.	26.0 ft.

It is expected the Dalhousie will be completed in time to go on the route by June 26.

Notices to Mariners.

The Department of Marine has issued the following: —

42. Apr. 21. 107. Nova Scotia, north coast, Northumberland strait, entrance to Pictou, Skinner reef, gas buoy established. 108. Nova Scotia, north coast, Northumberland strait, Caribou reef, buoy established.

43. Apr. 26. 109. Nova Scotia, Cape Breton island, Money point, marine signal station established, Cape St. Lawrence, marine signal station discontinued. 110. Quebec, entrance to the St. Lawrence, survey steamer, engaged in the survey of currents, to be avoided. 111. Quebec, River St. Lawrence, chart, Razade islands to White island, issued. 112. Quebec, River St. Lawrence, chart of Quebec harbors issued.

44. May 5. 113. Quebec and Newfoundland, Gulf of St. Lawrence, north shore, information respecting tides.

45. May 5, 114. Ontario, Lake Ontario, Bay of Quinte, Telegraph narrows, dredging completed, buoyage.

46. May 6. 115. Ontario, Lake Ontario, Presqu'ile bay, buoyage.

47. May 9. 116. Nova Scotia, southwest coast, off western entrance to Cockerwitt passage, bell buoy established. 117. New Brunswick, east coast, Northumberland strait, Buctouche harbor, change of color of Indian point range lights.

48. May 10. 118. New Brunswick, south coast, Bay of Fundy, St. John harbor, Partridge island, temporary light.

49. May 10. 119. British Columbia, Vancouver island, east coast, Haro strait, Little Zero rock, buoy established. 120. British Columbia, Finlayson channel, Jorkins point, gaslighted beacon established. 121. British Columbia, Nepean sound, Otter channel, rock reported. 122. British Columbia, Chatham sound, Prince Rupert harbor, Fairview, beacon established, buoy discontinued.

50. May 18. 123. Quebec, Gulf of St. Lawrence, Gaspe Bay, Gaspe basin, Paddy shoal and Janvrin shoal, lighthouses established. 124. Quebec, River St. Lawrence, channel between Hare Island and Hare island south reef, buoy established.

51. May 20. 125. British Columbia, Portland canal, Lion point, Eagle point, and Stewart, buoys established. 126. New Zealand, Three King islands, incorrectly charted.

The R. & O. N. Co's Steamboat Saguenay.

The Richelieu and Ontario Navigation Co.'s steamboat Saguenay was launched at Glasgow, Scotland, Apr. 22. She is of the Canadian lake and river type, of which few have been built in Great Britain. She has five decks, orlop, main, promenade, gallery and hurricane, with observation cabins and turrets. Her dimensions are as follows:— Length 275 ft., breadth 56½ ft. depth to hurricane deck 40 ft. There is berth accommodation for 240 first class passengers and 76 of a crew, and she will be registered to carry 1,700 passengers. The cabins are on the gallery and promenade decks, with observation turrets at the forward and after ends. The hurricane deck is used chiefly for the officers' accommodation, at the forward end, with an observation cabin amidships. The dining saloon, situated at the after end of the main deck, is panelled in mahogany, and has accommodation for 100 persons. The machinery consists of two sets of four crank triple expansion engines, balanced on the Yarrow, Schlick and Tweedy system, with propellers of the built type, with blades of bronze. The engines are of the high speed type, and special care has been taken in the design of the valve gear in order to eliminate vibration. The starting platform is situated at the level of the main deck, within the engine room casing, and the gear is so arranged that both sets of machinery can be conveniently manipulated by the engineer. Steam will be supplied by three single-ended multitubular boilers, at a pressure of 175 lbs. under forced draught. There will be a complete installation of auxiliary machinery, including two electric light engines and refrigerating plant. She is expected to sail for Canada, early in June, and will be placed on her route as soon after arrival as she can be prepared.

Vessels Removed from the Register.

The following vessels were removed from the register during April, for the reasons assigned:— Steam.—Mizpah, Lindsay, Ont., 2 tons, broken up; Saucy Jim, Collingwood, Ont., 63 tons, burnt; Spray, Vancouver, B.C., 5 tons, foundered. Sailing.— A. K. McLean, Lunenburg, N.S., 176 tons, abandoned at sea; Emma R. Smith, Windsor, N.S., 371 tons, transferred to Newfoundland; H. J. Hogan, Parrsboro, N.S., 772 tons, abandoned at sea; Helen Shafner, Annapolis Royal, N.S., 180 tons, abandoned at sea; Jessie Gertrude, Lunenburg, N.S., 17 tons, sold to foreigners; John J. Barlum, Sault Ste. Marie, Ont., 1,213 tons, sold to foreigners; La Galiotte, Quebec, Que., 18 tons, broken up; La Marine, Quebec, Que., 18 tons, broken up; Lottie E., Lunenburg, N.S., 12 tons, foundered; St. Pierre, Quebec, Que., 44 tons, broken up; Trade Wind, Whitby, N.S., 181 tons, burnt; Umbrina, Shelburne, N.S., 99 tons, sunk; Zephyr, Halifax, N.S., 16 tons, broken up.

Atlantic and Pacific Ocean Marine.

The White Star Line's annual report shows gross profit of £1,070,274, and a net profit of £540,661. Dividends paid during the year, amounted to 30%.

Capt. A. H. Vipond, formerly commodore of the Allan Line, died at Bootle, Eng., Apr. 26, aged 65. He retired from active service about a year ago.

Capt. Wm. Wallace, formerly of the Allan Line, s.s. Sicilian, which command he resigned in Oct., 1910, after 25 years in the service, died at Hudson, Que., Apr. 30.

The Elder Dempster Co.'s balance sheet for the past year shows a profit of £228,619. A dividend of 8% for the year has been declared, together with a bonus of 2%.

The Canadian Northern Steamships, Ltd., s.s. Royal George, being the first vessel to arrive at Montreal this season,

R. & O. N. Co.'s Steamboat Saguenay.

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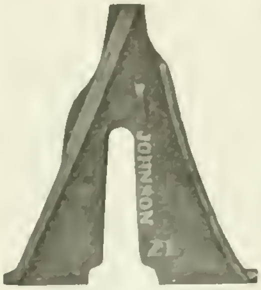
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Rests on rail both front and rear.
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ALUMINUM MANGANESE
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Capt. Henderson was presented with a gold headed cane by the Harbor Commissioners.

The Allan Line s.s. Scotia, formerly Staatendam, arrived at Montreal, May 18, on her first trip to that port, and a number of those engaged in the passenger traffic there were entertained to luncheon on board, May 20.

The Cunard Line s.s. Ascania, formerly the Thomson Line s.s. Tortona, which will sail from Montreal, June 9, for England, has been chartered by the British Admiralty, in connection with the Coronation naval review, off Spithead.

The White Star-Dominion Line s.s. Teutonic arrived at Montreal, May 21, on her maiden trip on the St. Lawrence route. She is said to be the longest vessel using the St. Lawrence route, being 582 ft. long over all. A number of passenger agents and others were entertained to luncheon on board, May 25.

P. A. S. Franklin, Vice President, International Mercantile Marine Co., who was in Montreal, May 13, stated that the White Star-Dominion Line, would, this season, operate the s.s. Majestic on the St. Lawrence route, in addition to the s.s. Teutonic, in a two class service, while the Laurentic and Megantic would be run with a three class service, as last season.

The Bermuda Atlantic Steamship Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $100,000 and office at Toronto, to build, purchase or otherwise acquire and operate steam and other vessels, and to carry on a general business as ship owners, brokers, warehousemen and forwarding agents. The incorporators are, S. Johnston, R. H. Parmenter, A. J. Thomson, W. S. Morlock, G. O. Merson, Toronto.

The Dominion Government has been notified by the British Government that the latter will not renew its share of the subsidy for the contract for a steamship service between Halifax and St. John and the British West Indies, when it expires at the end of June. The respective Governments have hitherto each subscribed $67,500 a year. The present contract is with Pickford and Black, who engaged to employ only vessels of British register, in the service.

T. and J. Harrison, Liverpool, Eng., operating the Harrison Line, announce that they have established a service to Pacific ports, including Vancouver and Victoria, B.C., the round trip to be accomplished in four months. Balfour, Guthrie and Co., are acting as agents for the line, and it is reported that they are negotiating with the Great Northern Ry. for a lease of waterfront lots along Burrard Inlet, for the erection of wharves and warehouses, in connection with this service.

The Dominion Government has signed a contract with the New Zealand Government and the Union Steamship Co., of New Zealand, for a direct monthly steamship service, commencing in August, between Vancouver, Victoria and Auckland, calling at Honolulu and Suva, for five years, for an annual subsidy of £37,090 18s. 2d. It is expected that the New Zealand Government will also contribute to the service. It is stated that the question of the renewal of the contract for an Australian service was to be taken up by the Canadian and Australian Premiers at the Imperial Conference, in England, in May.

The Steamship Cheronea Co.'s s.s. Cheronea, managed by Wm. Thomson and Co., St. John, N.B., is reported to have been sold to a Greek company. She was built at Port Glasgow, Scotland, in 1897, and was transferred from the British register to the Canadian register, in 1909, together with other vessels managed by the same firm. She is equipped with triple expansion engines with cylinders 25, 41 and 66 ins. diar., by 42 ins. stroke, 294 n.h.p. Her dimensions are, length, 324.7 ft.; breadth 47.9 ft.; depth, 22.6 ft.; tonnage, 3,189 gross, 2,060 register.

The winter navigation season at St. John, N.B., closed May 10, with the departure of the s.s. Kwarra, for South Africa. The total number of steamships arriving at the port during the season was 135, of which 112 loaded outward cargoes. The total shipments outward were valued at $23,669,073, of which $15,322,437 represented Canadian goods. In addition to this amount, silver ore and furs valued at $1,800,000 were also shipped. There was a falling off in the shipment of live stock, grain and flour, as compared with the previous year. There was a considerable increase in the imports and inward passengers.

Press reports from Montreal, May 10, stated that announcement would be made shortly, of the awarding of the mail contract between Great Britain and China, to the Imperial Steamship Co., in conjunction with the Canadian Northern Ry. The Imperial Steamship Co., was recently incorporated, to operate a line of steamships across the Atlantic, with the United Kingdom port at Blacksod Bay, Ireland, and the Canadian port at Halifax, N.S. In connection with this it is proposed to build a railway across Ireland, and connect with England, by special car ferries, or quick passenger steamship service. It is stated that Mackenzie, Mann and Co., have considerable interest in the project.

The Dominion Premier, in response to questions in the House of Commons, May 10, stated that the mail contract, for which a subsidy of $500,000 a year was paid, was with the Allan Line, and that it would not be renewed. He continued, "We have decided that so far as freight and passenger service is concerned the service should be self-supporting to the St. Lawrence, though for the winter service to St. John and Halifax, it may be necessary to continue the subsidy for some time longer. For the St. Lawrence, instead of this subsidy, we will pay for the carriage of mails, by the pound. We do not want to discontinue too suddenly, and will renew the contract for one year. We believe that for the Atlantic Canada should have a faster service than 18 knots."

Maritime Provinces and Newfoundland.

The Department of Public Works received tenders, May 31, for the construction of a landing wharf at Cape Rouge, N.S.

The Dominion Atlantic Ry. Co.'s steamships Prince Arthur and Prince George have been equipped with wireless telegraph apparatus.

The ferry boat, operating across the St. John River, between Edmundston, N.B., and Madawosky, Me., upset, May 1, and five of the occupants were drowned.

The Eureka Lumber Co., Ltd., has been incorporated under the New Brunswick Companies Act, with a capital of $80,000, and office at Bathurst, to carry on a gen-

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SOUTHWARK	June	7
MEGANTIC	"	10
CANADA	"	17
LAURENTIC	"	24
TEUTONIC	July	1
MEGANTIC	"	8
CANADA	"	15
LAURENTIC	"	22
TEUTONIC	"	29
MEGANTIC	Aug.	5
CANADA	"	12
LAURENTIC	"	19
TEUTONIC	"	26
MEGANTIC	Sept.	2
CANADA	"	9
LAURENTIC	"	16
TEUTONIC	"	23
MEGANTIC	"	30

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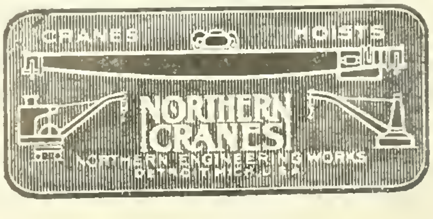
THE CANADIAN PACIFIC RAILWAY COMPANY.

Dividend Notice.

At a meeting of the Board of Directors, held this day, a dividend of two and one-half per cent. on the Common Stock for the quarter ended 31st March last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from interest on the proceeds of land sales and from other extraneous assets, was declared, payable on 30th June next, to Shareholders of record at 3.00 p.m. on 1st June next.

By order of the Board.
W. R. BAKER,
Secretary.

Montreal, May 8th, 1911.



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Sealed bids, marked "SHARPLES," accompanied by a certified check for 5 per cent. of the amount of the bid, as a guarantee of good faith, will be received up to noon of June 16, 1911, at the offices of

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where bids will be opened in the presence of intending purchasers. The right to reject any or all bids is reserved.

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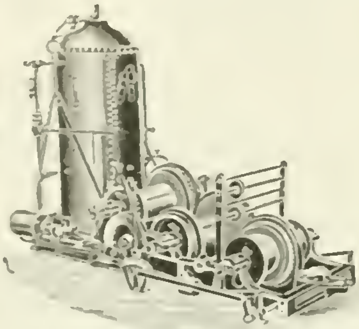

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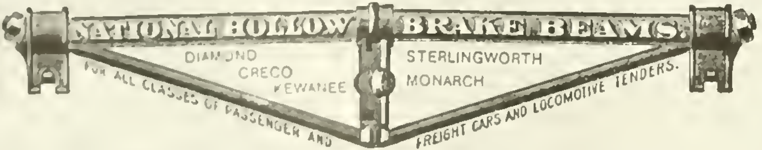
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Capital Authorized	$10,000,000.00
Capital Subscribed	5,913,000.00
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eral lumbering business, and in connection therewith to own and operate steam and other vessels.

The ferry service at Chatham, N.B., which, it was feared, would be suspended, owing to the financial loss incurred, has been continued with increased rates for ferriage. The Provincial Government provides a subsidy of $500 a year for the service, which amount is stated to be inadequate.

The following steamboats, owned by Burnham, Morrill and Co., for whom I. H. Mathers and Son, Halifax, N.S., act as agents, will be operated during the season, with captains and engineers, respectively, as given:— Robie M., R. J. Gilbert, G. E. Scott; Mary Jane, R. A. Hines, J. McCanell.

The deputation from Halifax, N.S., which recently waited on the Government at Ottawa, returned May 5, and reported that it was probable that the work of enlarging pier 2 would be proceeded with immediately, making it 800 ft. long and 300 ft. wide. Other work, which would probably be undertaken shortly, includes a temporary shed on pier 9, and the construction of a new pier on the Cunard property.

The British Canadian Shipbuilding and Dock Co., Ltd., the incorporation of which was announced in our last issue, is reported to have under consideration the establishment of a shipbuilding plant and dry dock at Sydney, N.S. It is reported that a site has been selected in Sydney harbor, and that tenders for the construction of the proposed vessels for the Canadian Navy will be submitted to the Government on behalf of the company, in which the Fairfield Shipbuilding Co., of Glasgow, Scotland, is interested.

The St. John River Steamship Co., has issued a writ against the Crystal Stream Steamship Co., asking damages for the placing of the steamboat Majestic on the Fredericton route in violation of an agreement made between the two companies, that it would not operate a vessel on that route, nor on the Washademoak route, nor interfere with any wharves or terminals held by the former company. The same company has also issued a writ against M. D. Austin to restrain him from giving a lease of the Star Line wharf and warehouse at Indiantown, N.B., to the Crystal Stream Steamship Co., and to compel him to lease it to the St. John River Steamship Co.

The Dominion Parliament has voted $150,000 for the construction of a new canal at St. Peters, N.S. The details of the proposal have not been worked out. It is estimated that the cost of the work will be about $300,000. Whether the existing canal will be abandoned or not has not been decided. The matter is under consideration, but the main difficulty in the way of enlarging the present canal is the fact that to do so would necessitate its being closed for a year, which would be a serious matter.

Province of Quebec Marine.

At a recent meeting of the Quebec city council, the question arose as to the construction of the Levis Ferry Ltd., summer boats, and as to whether they were to be built in accordance with the contract, the mayor stating that he had received no reply from the company on the subject.

Revillon Freres Trading Co., Ltd., has recently been incorporated with a capital of $2,000,000, and office in Montreal, to take over all the assets and liabilities of Revillon Bros., Ltd., and to carry on the business as heretofore, including the owning and operating of steam and other vessels, etc.

The Campbellton and Gaspe Steamship Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $100,000, and office at Fraserville, Que., to navigate the inland waters and other waters outside of Canada, and especially on the St. Lawrence River and its tributaries, and in the Baie de Chaleur, and in connection therewith to own and operate steam and other vessels. The incorporators are G. A. Binet, N. Dion, A. Stein, A. Benoit, E. Charrette, and A. Binet, Fraserville, Que.

In the case of the Quebec and Levis Ferry Co., against the Levis Ferries Ltd., the respondent's motion to dismiss the appeal, was rejected with costs recently. This case, which relates to the fining of the Q. & L. F. Co.'s manager, for contempt of court last year, will now be heard by the Appeal Court. In another case, connected with the Levis Ferries Ltd., A. Gourdeau, petitioner for a writ of mandamus, the city of Quebec, defendant, and A. Bernier, intervening, the motions of the defendant and the intervener, to dismiss the appeal, were both granted, May 8, with costs against the appellant.

We are officially advised that the floating dry dock, which is to be installed at Montreal by Vickers Sons and Maxim, Ltd., will be of the first class, with a lifting capacity of 25,000 tons, built of steel in three detachable sections, and will be of the following dimensions:— total length, 600 ft.; width over all 135 ft.; length on keel blocks, 550 ft.; clear inside width, 100½ ft.; depth of hull from bottom to top of keel blocks deck, 17 ft.; height of keel blocks, 4 ft. The cost is estimated at $4,228,710, and the Government will pay a subsidy of 3½% a year for 35 years, on $3,000,000.

The Fairhaven Transportation and Coal Co., Montreal, the incorporation of which, we announced in our last issue, will operate the steamboat Rock Ferry, during the season, in the coal trade, between Fairhaven, N.Y., and Montreal and Quebec, and she will probably take wood pulp as return cargoes. The vessel, which was formerly known as Merrimac, was recently purchased from the Gilchrist Transportation Co., Cleveland, O. She was built in 1882, and is equipped with fore and aft compound engines, with cylinders 21 and 48 ins. diar., by 40 ins. stroke, of 485 i.h.p., supplied with steam by a fire box boiler 9 by 15½ ft., at a pressure of 90 lbs. Her dimensions are, length, 235 ft.; breadth, 41 ft.; depth 21 ft.; tonnage 1399 gross, 1202 register.

The Montreal Harbor Commissioners' steam tug Sir Hugh Allan, which was built at Barrow-in-Furness, Eng., has has been specially designed for use as a tug, but in addition, she has been specially strengthened forward and fitted with suitable ballast tank arrangement, so that she may be utilized as an ice breaker, and as a cruiser for inspection purposes. She will be rated at the highest class at Lloyds', and is equipped with two sets of triple expansion engines having an i.h.p. of 1,300. The bridge deck, which extends the full width of the vessel, has chart and wheel houses at the forward end, and four staterooms, aft. The dining saloon, with accommodation for 16 persons, is on the deck below. There is a complete electric light installation with powerful searchlight. Her dimensions are, length, 130 ft.; breadth, 26 ft.; depth, 13 ft.

Ontario and the Great Lakes.

The Dominion Parliament has voted $50,000 for improvements in Kingston harbor.

The Department of Railways and Canals received tenders, May 31, for dredging the Murray canal.

The Department of Railways and Canals received tenders, May 31, for improvements at Port Colborne.

The name of the steamboat Stranger, no. 103878, registered at Kingston, has been changed by order in council to Lamonde.

The name of the steamboat Calumet, no 103921, registered at Peterboro, has been changed by order in council to Winnett.

The Public Works Department has awarded the contract for dredging at Toronto, to R. Weddell and Co., Trenton, Ont.

Capt. Frank Duetta, a well known navigator of Lake Ontario and the River St. Lawrence, died at Picton, May 15, aged 65.

The Nipissing-Pontiac Steamboat Co., New Liskeard, has placed the steamboat Aileen in service on Lake Timiskaming, with G. Miller, as captain.

The Merchants Mutual Line, Ltd., is building an addition to its shed on the Simcoe St. wharf, Toronto, making it approximately 300 by 150 ft. wide.

The Hamilton Ferry Co., Hamilton, has appointed J. Gillem, captain, and A.

SAULT STE. MARIE CANALS TRAFFIC

The following commerce passed through the Sault Ste. Marie Canals in April:

Articles			Canadian Canal	U. S. Canal	Total
Copper	Eastbound	Short tons	2,355	2,489	4,844
Grain	"	Bushels	1,179,564	100,910	1,280,474
Building stone	"	Short tons			
Flour	"	Barrels	187,980	56,090	244,070
Iron ore	"	Short tons	110,306	26,009	136,315
Pig iron	"	"			
Lumber	"	M. ft. B.M.	2,277	1,051	3,328
Silver ore	"	Short tons			
Wheat	"	Bushels	5,543,521	121,132	5,664,653
General merchandise	"	Short tons	1,544	889	2,433
Passengers	"	Number	234	21	255
Coal, hard	Westbound	Short tons	52,943		52,943
Coal, soft	"	"	192,083	94,385	286,468
Flour	"	Barrels	125		125
Grain	"	Bushels			
Manufactured iron	"	Short tons	9,963	9,174	19,137
Iron ore	"	"			
Salt	"	Barrels	7,868	19,039	26,907
General merchandise	"	Short tons	27,518	32,203	59,721
Passengers	"	Number	433	62	495
Vessel Passengers		Number	191	183	374
Registered tonnage		Net	423,074	275,721	698,795
Freight—Eastbound		Short tons	327,207	43,118	370,325
" Westbound		"	283,644	138,618	422,262
Total freight		"	610,851	181,736	792,587

A short ton consists of 2,000 lbs. The Canadian canal opened April 22; the U.S. Poe lock opened April 24.

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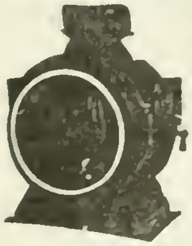

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— ISSUE —
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The Inland Revenue Department received tenders, May 29, for the privilege of ferrying across the Ottawa River between St. Thomas d'Alfred, Ont., and Fassett, Que.

The Montreal Transportation Co.'s Stormount, which grounded between Longue Pointe and Pointe aux Trembles May 6, was released, with practically no damage, the same day.

The Keystone Transportation Co.'s steamboat Keystone, ran aground on the Vidal shoals, near Sault Ste. Marie, May 5. She was released by tugs and proceeded on her trip.

The Department of Railways and Canals has awarded the contract for the work of improving the lower entrance to the Farrens Point canal, to the Randolph Macdonald Co., Toronto.

The Department of Railways and Canals will receive to June 6, tenders for the construction of an extension to the north mooring pier at the upper entrance to the Sault Ste. Marie canal.

The Dominion Parliament has voted $500,000 for further harbor and river improvements at Fort William and Port Arthur, and $15,000 for an addition to the Customs House at Port Arthur.

The Ontario and Quebec Navigation Co.'s steamboat Aletha, which was driven ashore in Navy Bay, Kingston, May 1, after being released, May 7, was dry docked at Kingston for repairs.

An order in council has been passed changing the name of the steamboat Waubaushene, no. 85,415, registered at Midland, to D. J. Burke. The register gives the port of registry as St. Catharines.

The Inland Lines steamboat Emperor, which has been built at Collingwood, left there on her first trip, May 3. On May 19, she broke her shaft and was towed to Detour, whence she was taken to Port Arthur for repairs.

The Niagara Navigation Co. is building a structural steel shed, 250 ft. long, on pier 22, at Toronto, to replace the shed destroyed by fire last summer. It will be used for freight purposes, and will cover a waiting room, ticket offices, etc.

During the past winter the Inland Lines steamboats Donnacona and Strathcona were completely overhauled, to enable them to enter the package freight trade this season, instead of the ore trade, for which they were originally built.

The Turbine Steamship Co.'s s.s. Turbinia, which was entirely overhauled during the winter, had a trial trip, May 17, and was placed on her route between Toronto and Hamilton, May 20. The repairs and improvements cost about $10,000.

The Buffalo, Lockport and Rochester Ry. steamboat Olcott, has been placed on the route between Toronto and Olcott Beach, this summer. It is said that this vessel was formerly known as Lakeside, and built at Toledo, Ohio, about six years ago.

The underwriters are offering a reward of $1,500 for information indicating the exact location of the car ferry Marquette and Bessemer No. 2, which sunk, during a storm, in Lake Erie, in Dec. 1909. A further $3,500 will be paid to the same informants, if, and when, the car ferry is successfully raised.

The Inland Lines steamboat Donnacona, with a full cargo of grain from Fort William, struck the bank in the Welland canal, near Port Colborne, May 8, and returned to Port Colborne, where her cargo was discharged. She subsequently proceeded to Buffalo for examination and repairs.

Press reports state that arrangements are being made for the operation of a line of steamboats, between Kingston and Clayton, and Kingston and Cape Vincent, one trip being made daily on the first route and two trips daily on the second. B. W. Folger, Kingston, is said to be interested in the project.

The following is a list of the steamboats operated by the Upper Ontario Steamboat Co., New Liskeard, with their respective captains and chief engineers: Champion, A. L. Casselman, G. Willis; Gipsy, L. Bethune, R. T. McCaw; S. & Y., R. Hansen, J. McCaw; St. Antoine, G. Miller, T. Arbin; Wenona, J. S. Inkster.

The steamboat Geneva, which is reported to have been purchased recently by the Peterboro and Lake Simcoe Navigation Co., for operation between Peterboro and Rice Lake ports, was built at Orillia in 1905. She is screw driven, and is equipped with engine of 10 n.h.p. Her dimensions are, length, 80.7 ft., breadth 16.3 ft., depth 5.3 ft.; tonnage, 92 gross, 58 register.

A deputation representing the municipalities between St. Catharines and Port Dalhousie, waited on the Minister of Railways and Canals, May 10, to ask that the Grenville route for the proposed new Welland canal be chosen. The Minister in reply, stated that surveys were being made, with the object of deciding the best route, and in reaching a final decision, the representations of the deputation would not be lost sight of.

The U.S. Lake Survey reports the levels of the Great Lakes, for April, in feet above tidewater, as follows:— Superior, 600.61; Michigan and Huron, 579.44; Erie, 571.45; Ontario, 245.44. Compared with the average April levels for the past ten years, Superior was 1.33 ft. lower; Michigan and Huron, 1.11 ft. lower; Erie, 0.86 ft. lower, and Ontario, 0.94 ft. lower. It was anticipated that each of the lakes would rise 0.3 ft. during May.

The Dalhousie Navigation Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $50,000 and office at Toronto, to purchase, lease, charter or otherwise acquire and operate steamships, orother vessels propelled by any other motive power or device; to own piers, wharves, docks, dry docks, terminals, warehouses, etc. The incorporators are G. F. Macdonnell, R. H. M. Temple, A. J. Mitchell and J. B. Robertson, all of whom are connected with the Canadian Northern Ry., Toronto.

The Engineer Office of the U.S. War Department, will receive tenders to June 29, for the construction of lock masonry at the Sault Ste. Marie canal, Mich. The work to be done includes the furnishing of all necessary plant, labor and supplies, and the building of a masonry lock and a portion of the approaches, with pump well, tunnels, etc., and the furnishing of cement and certain re-inforcement and metal parts to be built into the masonry. The estimated quantities, include 2,000 cubic yards of excavation, 138,000 cubic yards of concrete in lock and canal walls, 35,000 cubic yards of concrete elsewhere than in walls, 26,000 lineal feet of drilling for anchor rods, 215,000 barrels of Portland cement. 385 tons of square cold-twisted steel bars, 215 tons of anchor rods in rock with nuts and square plate washers, 150 tons of wire cloth 35 tons miscellaneous steel, iron and castings, 30 tons sheet lead stop waters. Forbs, chief engineer of the ferry steamboat Ivan R. for the current season.

Manitoba, Saskatchewan and Alberta.

The Dominion Public Works Department has accepted the plans for the construction of a wharf on the south side of the Saskatchewan River, at Prince Albert, Sask., and tenders are being called for. The wharf will be 225 ft. long.

The Dominion Government is having built, at Prairie Creek, Alta., a fire patrol boat, to run on the Athabasca River, as far north as Mirror Landing, at the mouth of the Lesser Slave River. It will be equipped with a powerful engine on account of the strong currents encountered.

A press report from Athabasca Landing, Alta., states that in addition to two steamboats at present under construction there, for operation on the Athabasca River, a contract has been placed for the building of 80 flat boats, making 150 flat boats in all, to be built there this season.

The House of Commons has voted for harbor and river works in Manitoba, Saskatchewan and Alberta, as follows: Manitoba, Fairford River, to pay for extra work thereon, with interest accrued, $6,709.12; Gimli wharf extensions, $7,000; Red River, St. Andrews locks and dam, additional amount to complete payments, $19,385; Red River, St. Andrews dam, construction of approaches, $63,000; St. Andrews rapids, raising road, etc., $1,000; St. Andrews Rapids, archway, $5,060; Victoria Beach bay, harbor, breakwater and wharf, $12,000. Saskatchewan and Alberta, surveys of rapids, etc., on North and South Saskatchewan Rivers and other navigable streams, further amount required, $10,000.

B.C. and Pacific Coast Marine

The Royal City Navigation Co.'s steamboat Paystreak's officers for the current season are, captain, R. C. Menten, chief engineer, A. McLeod.

The C.P.R. British Columbia Coast Service s.s. Joan after being thoroughly overhauled and repaired, has been replaced on her route between Vancouver and Naniamo.

The official enquiry into the wreck of the s.s. Sechelt, off Church Point, on Mar. 24, was opened at Victoria, May 16, before Justice Martin, and Captains Neurostos and Reid.

The C.P.R. has filed with the Minister of Public Works, at Ottawa, plans of a wharf to be built on water lots 8 to 12, inclusive, on the Fraser River at New Westminster.

Capt. A. A. Sears, master of the s.s. Iroquois, which was wrecked, with considerable loss of life off Sydney, Apr. 10, was recently committed for trial on a charge of manslaughter.

J. H. Bonser and W. Alexander have been appointed, respectively, captain and chief engineer of the Prince Rupert-Skeena Transportation Co.'s steamboat Inlander, for the current season.

The Dominion Parliament has made provision for harbor and river improvements in the province, as follows:—Arrow Lakes, improvements at narrows, $25,000; Boswell, wharf, $7,500; Columbia and Kootenay Rivers, wharves, further amount required, $19,500.

The C.P.R. British Columbia Coast Service s.s. Princess Alice, which is under construction at Walisend, Eng., is being pushed forward, and it is expected that she will be completed before the end of the year. Her dimensions are, length, 210 ft., breadth 40 ft., depth of hold 16 ft.

The steamboat Roche Point, recently built at Vancouver, for the Imperial Car, Shipbuilding and Drydock Corporation, and leased for a year to the North Arm Steamship Co., had a trial trip to Indian River Park, May 6. She is 76 ft. long, with 17 ft. beam, and a capacity for 150 pasengers.

The C. P. R. British Columbia Lake and River Service steamboat Bonnington, had a trial trip on the Arrow Lake, May 10. She was built by the Polson

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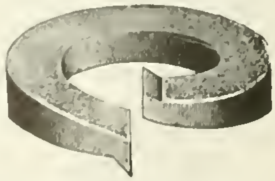

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Iron Works, Toronto, and shipped to British Columbia in sections, where she was assembled and re-constructed. A full description of this vessel was given in our Nov. 1910 issue.

The British steamship Georgia, which was formerly under charter to the Canadian Mexican Pacific Steamship Co., for the service between Vancouver and Salina Cruz, and which has been lying idle since the charter expired, last June, is reported to have been sold to a Japanese firm. She was built at Newcastle, Eng., in 1889. Her dimensions are, length, 335 ft.; beam, 40 ft.; depth, 25 ft.

With reference to the vessel, which we mentioned in our last issue, that the C.P.R. is to build, for its Kootenay Lakes service, we have been officially advised that her exact character has not been decided upon. The hull will be of steel, and she will be a sternwheeler, drawing not more than two feet of water. The general dimensions will be, length 200 ft., beam, moulded, 38 ft., or 44 ft. over guards; depth 7½ ft.

The Dominion Government has entered into an agreement with the Esquimalt Graving Dock and Shipbuilding Co., to pay a subsidy of 3½% on an expenditure of $2,637,801.26, for 35 years, in aid of the construction of a dry dock and ship building and repairing plant at Esquimalt. The dimensions of the proposed dock are as follows:—along keelson, from gate seat to head of dock, 900 ft.,; width at coping, 128 ft., width at bottom, 100 ft.; depth below top of coping, 41 ft., or at ordinary water spring tide, 35 ft. Bullen Bros., Esquimalt, and Denny Bros., Dumbarton, Scotland, are chiefly interested in the project.

The C.P.R. has awarded a contract to Bow & Maclachlan, Paisley, Scotland, for the construction of a steamship, for its B.C. and Pacific Coast Service. It will be operated on the Skagway and Northern British Columbia route, as well as in the Queen Charlotte Islands trade. She will be fitted with very large hatches and gear for handling heavy weights, and will be comfortably fitted up for passengers. She will have a larger cargo capacity than any of the other Coast passenger vessels, approximately 1,200 tons, and accommodation for about 200 first class passengers. The machinery will include triple expansion engines of 2,000 i.h.p., driving a single screw, supplied with steam by three Scotch marine boilers, and in addition she will be equipped with tanks, all arranged for generating steam with oil fuel. Her dimensions will be, length 245 ft., beam 44 ft., depth of hold 18 ft. It is anticipated that she will be finished in time to sail from the Clyde by Nov. 1.

A number of changes have been made in the harbor regulations generally, and in addition, some special regulations have been made, applying to Vancouver, Victoria and Esquimalt, respecting anchorage, towing of logs, etc.

The Purchasing Agents' Guide

To the Manufacturers of and Dealers in Steam and Electric Railway, Marine, Grain Elevator, Express, Telegraph, Telephone and Contractors' Supplies, &c.

Accountants and Auditors
W. M. Dunlop and Co. ....Ottawa
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E. L. Drewry ....Winnipeg.
Air Brakes and Fittings
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Canadian Westinghouse Co. Hamilton, Ont.
Ales
E. L. Drewry ....Winnipeg.
Alloys
American Vanadium Co....Pittsburg, Pa.
Titanium Alloy Mfg. Co...Pittsburgh, Pa.
Angle Bars
Nova Scotia S. & C. Co., New Glasgow, N.S.
Steel Co. of Canada, Ltd., Hamilton, Ont.
Anti Rail Creepers
The Holden Co., Ltd...........Montreal.
Asbestos
Canadian H. W. Johns-Manville Co., Ltd. ....Toronto
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Preston Car & Coach Co...Preston, Ont.
Axes
James Smart Mfg. Co.....Brockville, Ont.
Axles
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James Hutton & Co. ....Montreal.
Nova Scotia S. & C. Co., New Glasgow, N.S.
Jas. W. Pyke & Co............Montreal.
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Tallman Brass & Metal Co., Hamilton, Ont.
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International Marine Signal Co....Ottawa.
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Canadian Car & Foundry Co....Montreal.
Chicago Railway Equipment Co..Chicago.
Blankets and Bedding
The Hudson's Bay Co. ....
Blasting Powder
Curtis's & Harvey (Canada) Ltd..Montreal
Boiler Checks
Nathan Manufacturing Co......New York.
Boilers
Babcock & Wilcox, Ltd.........Montreal.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S
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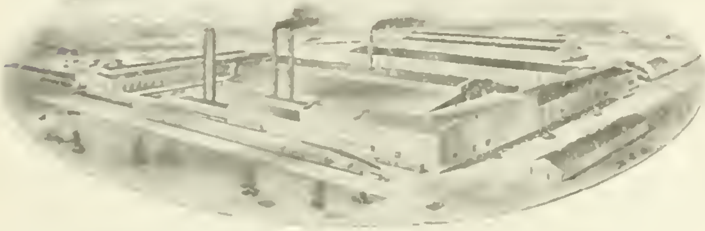
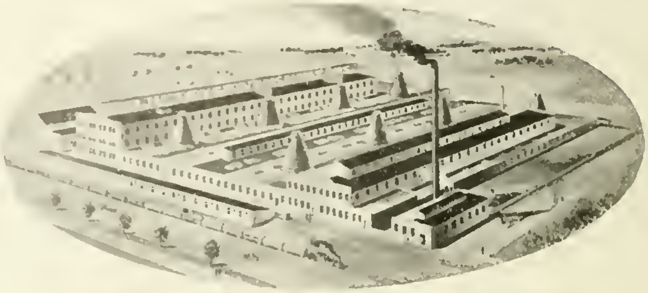
Babcock & Wilcox, Ltd.........Montreal.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Boilers, Stationary and Marine
Babcock & Wilcox, Ltd.........Montreal.
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Boilers, Steam
Babcock & Wilcox, Ltd.........Montreal.
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S
Boilers, Water Tube
Babcock & Wilcox, Ltd.........Montreal.
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S
Bolsters
Canadian Car & Foundry Co....Montreal.
Canadian Ry. Equipment Co., Welland, Ont.
Whyte Railway Signal Co. ....Toronto
Bolt Cutters
London Machine Tool Co., Ltd., Hamilton.
Bolts and Nuts
Steel Co. of Canada, Ltd..Hamilton, Ont.
Bolts, Track
Nova Scotia S. & C. Co., New Glasgow, N.S.
Borers, Car Wheel
John Bertram & Sons Co....Dundas, Ont.
Boring Mills
London Machine Tool Co., Ltd., Hamilton.
Brake Beams
Canadian Car & Foundry Co....Montreal.
Chicago Railway Equipment Co..Chicago.
Brake Shoes
Am. Brake Shoe & F'dry Co., Mahwah, N.J.
Canada Iron Corporation, Ltd..Montreal.
The Holden Co., Ltd...........Montreal.
Brake Shoes, Locomotive Driver
Am. Brake Shoe & F'dry Co., Mahwah, N.J.
Canada Iron Corporation, Ltd..Montreal.
Dorner Railway Equip. Co....Chicago, Ill.
Railway Materials Co. .... ..New York.
Brasses, Car
T. McAvity & Sons ....St. John, N.B.
Bridge Numbers
Acton Burrows, Limited ....Toronto.
Bridges
Canadian Bridge Co.....Walkerville, Ont.
Dominion Bridge Co............Montreal.
Bronze
American Vanadium Co....Pittsburg, Pa.
Titanium Alloy Mfg. Co...Pittsburgh, Pa.
Buckets, Coal, Ore and Concrete
M. Beatty & Sons, Ltd....Welland, Ont.
Brown Hoisting Machinery Co., Cleveland.
Williams & Wilson, Ltd ....Montreal.
Canadian Bridge Co.....Walkerville, Ont.
Buildings, Steel
Dominion Bridge Co............Montreal.
Bumping Posts
Dominion Equip. & Supply Co., Winnipeg.
The Holden Co., Ltd...........Montreal.
McCord & Co. ....Chicago, Ill.
Buoys
International Marine Signal Co....Ottawa.
Cables, Electric and Feeder
Chanman & Walker, Ltd........Toronto.
E. F. Phillips Electrical Works.Montreal.
The Wire and Cable Co.........Montreal.
Capstans
Dake Engine Co. .. . Grand Haven, Mich.
Caps, Uniform
W. H. Coddington ....Hamilton, Ont.
Car Furnishings
Guilford S. Wood..............Chicago, Ill.
Car Loaders, Box
Mussens, Ltd. ....Montreal.
Car Movers
F. H. Hopkins & Co.............Montreal.
Mussens, Ltd. ....Montreal.
Cars
Crossen Car Mfg. Co........Cobourg, Ont.
Canadian Car & Foundry Co....Montreal
Dorner Railway Equip. Co. .. Chicago, Ill.
J. T. Gardner ....Chicago, Ill.
Hart-Otis Car Co., Ltd.........Montreal.
Ottawa Car Co., Ltd.............Ottawa.
Pay-As-You-Enter Car Co....New York.
Preston Car and Coach Co., Ltd..Preston.
Russel Wheel & Fdry Co...Detroit, Mich.
Western Wheeled Scraper Co. Aurora, Ill.
Cars, Logging
Russel Wheel & Fdry Co...Detroit, Mich.
Castings
American Vanadium Co....Pittsburg, Pa
Canadian Car & Foundry Co....Montreal.
Crossen Car Mfg. Co........Cobourg, Ont.
John Inglis Co., Ltd. ....Toronto
Lumen Bearing Co.....West Toronto, Ont.
Russel Wheel & Fdry Co...Detroit, Mich.
Standard Steel Works Co..Philadelphia, Pa.
Titanium Alloy Mfg. Co...Pittsburgh, Pa.
Castings, Brass
Canadian Bronze Co. ....Montreal.
Canada Iron Corporation, Ltd...Montreal.
Kerr Engine Co. ....Walkerville, Ont.
Lumen Bearing Co.....West Toronto, Ont.
Tallman Brass & Metal Co., Ltd.Hamilton.
Castings, Car
Am. Brake Shoe & F'dry Co., Mahwah, N.J.
Canada Iron Corporation, Ltd...Montreal.
Russel Wheel & Fdry.. Co..Detroit, Mich.
Castings, Iron
Allis-Chalmers-Bullock Ltd. ....Montreal.
Canada Iron Corporation, Ltd...Montreal.
Kerr Engine Co..........Walkerville, Ont.
Russel Wheel & Fdry.. Co..Detroit, Mich.
Castings, Iron and Steel
Am. Brake Shoe & F'dry Co., Mahwah, N.J
Castings, Malleable
Taylor & Arnold ....Montreal
Castings, Manganese Steel
Lumen Bearing Co.....West Toronto, Ont.
Montreal Steel Works, Ltd......Montreal.
Castings, Steel
American Vanadium Co....Pittsburg, Pa.
Canada Iron Corporation, Ltd..Montreal.
W. Kennedy & Sons, Ltd., Owen So'd, Ont.
Montreal Steel Works ....Montreal.
Titanium Alloy Mfg. Co...Pittsburgh, Pa.
Chains
B. J. Coghlin & Co..............Montreal.
Circuit Breakers
Geo. C. Royce ....West Toronto, Ont.
Closets, Car
Duner Co. ....Chicago, Ill.
Coal
Nova Scotia S. & C. Co., New Glasgow, N.S
Compressors, Air
Allis-Chalmers-Bullock Ltd. ....Montreal.
The American Well Works...Aurora, Ill
Canadian Rand Co. ....Montreal.
The Holden Co., Ltd............Montreal
John Inglis Co., Ltd. ....Toronto
Concrete Mixers and Rock Crushers
F. H. Hopkins & Co............Montreal
Mussens Limited ....Montreal.
Contractors' Supplies
American Hoist & Der. Co.St. Paul Minn.
F. H. Hopkins & Co............Montreal.
Rice Lewis & Son...............Toronto.
Russel Wheel & Fdry.. Co..Detroit, Mich.
Western Wheeled Scraper Co..Aurora, Ill
Williams & Wilson, Ltd .... Montreal
Conveyors, Coal and Ash
Babcock & Wilcox, Ltd.........Montreal.
Williams & Wilson, Ltd ....Montreal.
Copying Presses
James Smart Mfg. Co.....Brockville, Ont.

IMPORTANT ANNOUNCEMENT



Main Office and Works of The Ohio Brass Company.



The Ohio Brass Co.'s High Tension Insulator Plant.

¶ The exclusive sales arrangement under which our Canadian Sales Agents have sold our materials in Canada during the last few years has been terminated and the entire Dominion of Canada has been assigned to our own personal representatives.

¶ The remarkable progress of Electric Railway and Power Transmission projects in Canada and the many recent extensions and additions to our large line of materials, has made this step necessary in order to properly maintain our trade relations.

¶ The great advantage, both to the trade and to ourselves, of coming into direct personal contact with each other through the medium of our trained representatives (men who through years of association with us are familiar with all the details and uses of our entire line) will be instantly appreciated.

¶ For the present our representatives will have no permanent Canadian addresses as they will devote their time to calling upon the entire trade and for this reason all correspondence should be addressed direct to our Main Offices at Mansfield, Ohio, where every provision has been made to handle it with the utmost dispatch.

¶ Our sole aim is to produce materials which will render the greatest amount of efficient service and this is borne out by the fact that a very considerable number of the most important Electric Roads and Transmission Companies in the U.S., and a constantly increasing number in Canada regard O-B Railway Materials and Hi-Tension Insulators as the highest standard of excellence in design, material and workmanship.

Some of the Materials we Manufacture

O-B Trolley Material

Dirigo Insulation,
Pole Brackets,
Hangers, Ears, Clamps,
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Catenary Material,
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All Wire Rail Bonds,
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Channel Pins,
Bonding Clamps,
Third Rail Insulators.

O-B Car Equipment Specialties

Tomlinson Car Couplers,
Electric Car Signal System,
Air Sander Valve and Trap,
Fire Hose Bridge, etc.

O-B Transmission Material

O-B High Tension Porcelain,
Insulators, Wall Tubes and Bushings, Pins, etc.

THE OHIO BRASS CO., MANSFIELD, OHIO, U.S.A.

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Canadian Car & Foundry Co...Montreal.
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Montreal Steel Works, Ltd.....Montreal.
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Cranes
Brown Hoisting Machinery Co..Cleveland.
Northern Engineering Wks..Detroit, Mich.
Williams & Wilson, Ltd ....Montreal.
Cranes, Electric
Babcock & Wilcox ....Montreal.
Dominion Bridge Co. ....Montreal.
Mussens, Limited ....Montreal.
Northern Engineering Wks, Detroit, Mich.
Cranes, Locomotive
American Hoist & Derrick Co., St. Paul, M.
Cranes, Wrecking
Mussens, Limited ....Montreal.
Crowbars
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Preston Car & Coach Co...Preston, Ont.
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Titanium Alloy Mfg. Co...Pittsburgh, Pa.
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M. Beatty & Sons ....Welland, Ont.
Mussens, Limited ....Montreal.
Derricks, Car
American Hoist & Der. Co.St. Paul Minn.
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Guilford S. Wood..............Chicago, Ill.
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Butterfield & Co. ....Rock Island, Que.
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T. H. Symington & Co.....Baltimore, Md.
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Canadian Rand Co...............Montreal.
Drills, Radial
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Dry Goods
The Hudson's Bay Co.....................
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Dominion Equip. & Supply Co., Winnipeg.
F. H. Hopkins & Co............Montreal.
Western Wheeled Scraper Co..Aurora, Ill.
Dump Cars, Hand
Meaford Wheelba'ow Co., Ltd., Meaf'd, Ont.
Dynamos
Northern Electric & Mfg. Co.....Montreal.
Dynamo and Electric Castings
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Electric Apparatus
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Chapman & Walker, Ltd........Toronto.
Northern Electric & Mfg. Co.....Montreal.
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Preston Car & Coach Co...Preston, Ont.
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Polson Iron Works, Ltd.........Toronto.
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Russel Wheel & Fdry Co..Detroit, Mich.
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Allis-Chalmers-Bullock Ltd. ....Montreal.
John Inglis Co., Ltd. ....Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Engines, Gas
Allis-Chalmers-Bullock Ltd. ....Montreal.
Williams & Wilson, Ltd ....Montreal.
Engines, Gasolene
Canadian Fairbanks Co., Ltd...Montreal.
Ontario Wind Engine & Pump Co. Toronto.
Engines, Hoisting
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American Hoist & Derrick Co., St. Paul, M.
M. Beatty & Sons ....Welland, Ont.
Dominion Equip. & Supply Co., Winnipeg.
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Russel Wheel & Fdry. Co..Detroit, Mich.
Williams & Wilson, Ltd ....Montreal.
Engines, Pumping
John Inglis Co., Ltd. ....Toronto.
Engines, Stationary and Marine
John Inglis Co., Ltd. ....Toronto.
Polson Iron Works, Ltd.........Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Engines, Stationary, Appliances
Nathan Manufacturing Co......New York.
Engines, Steam
Allis-Chalmers-Bullock Ltd. ....Montreal.
Engineers, Consulting
Alfred Lovell ....Philadelphia, Pa.
Explosives
Curtis's & Harvey (Canada) Ltd..Montreal
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Acton Burrows, Limited ....Toronto.
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Owen Sound Wire Fence Co., Ltd., O'n S'd.
Ferro-Vanadium
American Vanadium Co. ..Pittsburg, Pa.
Flags
The Hudson's Bay Co.....................
Flour
The Hudson's Bay Co.....................
Forgings
American Vanadium Co. ..Pittsburg, Pa.
Canadian Car & Foundry Co...Montreal.
Cleveland City Forge & Iron Co., Cleveland.
Crossen Car Mfg. Co........Cobourg, Ont.
Nova Scotia S. & C. Co., New Glasgow, N.S.
Standard Steel Works Co., Philadelphia, Pa.
Steel Co. of Canada, Ltd. ..Hamilton, Ont.
Titanium Alloy Mfg. Co...Pittsburgh, Pa.
Foundry Appliances
Goldschmidt Thermit Co. ....Toronto.
Ont. Wind Eng. & Pump Co., Ltd., Toronto.
Frogs
Canadian Ramapo Iron Wks.Niagara Falls.
Johnson Wrecking Frog Co..Cleveland, O.
Furnaces, Corrugated
Continental Iron Works....Brooklyn, N.Y.
Furnaces, Oil
Railway Materials Co. ....New York.
Furnaces, Shop
Railway Materials Co. ....New York.
Fuse Batteries
Curtis's & Harvey (Canada) Ltd..Montreal
Fuse Detonators
Curtis's & Harvey (Canada) Ltd..Montreal
Fuses, Electric
Curtis's & Harvey (Canada) Ltd..Montreal
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The Holden Co., Ltd............Montreal.
McCord & Co. ....Chicago, Ill.
Gates
Owen Sound Wire Fence Co., Ltd., O'n S'd.
Gates, Crossing
The N. L. Piper Ry. Supply Co...Toronto.
Whyte Railway Signal Co. ....Toronto
Gauge Cocks
Nathan Manufacturing Co......New York.
Gauges, Locomotive
Taylor & Arnold ....Montreal.
Utica Steam Gauge Co..........New York.
Gauges, Water
Detroit Lubricator Co. ..... Detroit, Mich.
Nathan Manufacturing Co......New York.
Gears
American Vanadium Co. ..Pittsburg, Pa.
Titanium Alloy Mfg. Co...Pittsburgh, Pa.
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Dorner Railway Equip. Co....Chicago, Ill.
Northern Electric & Mfg. Co.....Montreal.
Graders and Ditchers
Western Wheeled Scraper Co..Aurora, Ill.
Grates, Shaking
Babcock & Wilcox, Ltd..........Montreal.
Polson Iron Works, Ltd.........Toronto.
Grinders
C. H. Besly & Co. .... Chicago, Ill.
Groceries
The Hudson's Bay Co.....................
Hammers, Cast Steel
American Brake Shoe & Fdry Co.Mahwah.
James Smart Mfg. Co....Brockville, Ont.
Handcars
Canadian Fairbanks Co., Ltd...Montreal.
Crossen Car Mfg. Co.......Cobourg, Ont.
Dominion Equip. & Supply Co., Winnipeg.
F. H. Hopkins & Co............Montreal.
Mussens, Limited ....Montreal.
Rice Lewis & Son...............Toronto.
Whyte Railway Signal Co. ....Toronto
Hardware
The Hudson's Bay Co.....................
Rice Lewis & Son...............Toronto.
Hats
W. H. Coddington.........Hamilton, Ont.
Headlights
Commercial Acetylene Co.........Toronto.
The N. L. Piper Ry. Supply Co...Toronto.
Pyle National Elec. Headlight Co..Chicago.
Headlinings
Crossen Car Mfg. Co.......Cobourg, Ont.
Heaters, Feedwater
Robb Engineering Co., Ltd..Amherst, N.S.
Heating, Car
Canadian Gold Car H'g & L'g Co..Montreal.
Consolidated Car Heating Co., Albany, N.Y.
Safety Car Heating & L'ting Co.New York.
United States Light & Heat. Co.New York
Hoists
Dake Engine Co. ....Grand Haven, Mich.
Hoists, Electric
American Hoist & Derrick Co., St. Paul, M.
Hoists, Pneumatic
Taylor & Arnold ....Montreal.
Hooks
Steel Co. of Canada, Ltd..Hamilton, Ont.
Hoppers, Car, Wet or Dry
Duner Co. ....Chicago, Ill.
Hose, Air Brake and Steam
Guilford S. Wood.............Chicago, Ill
Hydrants
Canadian Fairbanks Co., Ltd...Montreal
Kerr Engine Co..........Walkerville, Ont
Illustrations
Acton Burrows, Limited..........Toronto
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T. McAvity & Sons ....St. John, N.B.
Nathan Manufacturing Co......New York.
Inspections
R. W. Hunt & Co...............Montreal.
Alfred Lovell ....Philadelphia, Pa.
Insurance, Accident
Can. Casualty & Boiler Ins. Co...Toronto.
Canadian Ry. Accident Ins. Co...Ottawa.
Imp. Guarantee & Acc. Ins. Co..Toronto.
London Guar. & Accident Co., Ltd.Toronto.
Insurance, Boiler
Can. Casualty & Boiler Ins. Co...Toronto.
Interlocking Plant and Signals
Montreal Steel Works, Ltd......Montreal.
Railway Signal Co. of Canada....Montreal.
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Old Series, No. 243.
New Series, No. 161

TORONTO, CANADA, JULY, 1911.

For Subscription Rates, See page 643.

THE JUNE RAILWAY MECHANICAL CONVENTIONS.

The two great railway conventions of the year, the American Railway Master Mechanics' Association and the Master Car Builders' Association, were held at Atlantic City, the former on June 14, 15 and 16, and the latter on June 19, 20 and 21. The most important features of these annual conventions are the reports of the standing and special committees, the principal ones of which are given on this and following pages, either in full or in abstract.

SMOKE PREVENTING DEVICES.

The Master Mechanics committee on smoke preventing devices for firing up locomotives at terminals, E. W. Pratt, Assistant Superintendent of Motive Power, C. and N.W. R., Chicago, Chairman, reported as follows:

On account of the laws and regulations of large cities, relative to the prevention of smoke, your executive committee appointed this committee to collect from the various members such information as might be obtainable with reference to the prevention of smoke during the critical period of time when locomotives are being fired up at terminals. That smoke prevention is extremely difficult at this time is evidenced by the fact that most large cities specifically exempt from violations the smoke emitted from boilers while being fired up. Although only 33 roads replied to your committee's circular of enquiry, among these were included many of the largest companies, and especially those having terminals located within the large cities where the restrictions are most severe; hence we believe this subject has been more thoroughly canvassed than might otherwise appear. The various reports and the experience of the individual members of your committee would lead to the following recommendations:

Boiler Conditions Before Firing Up.—The best results are obtained by filling up locomotive boilers with hot water previous to firing up; the temperatures reported varying from 110° F. to over 200° F., the higher being preferred on account of aiding combustion and lessening the time required to raise steam in the boiler. Where hot water is not available, the temperature of water in the boiler may be raised by injecting live steam below the water line; but on account of the loss of time, the heating of the water, either before or while the boiler is being filled is recommended.

Induced Draft.—Two roads reported the use of large fans, connected with the smoke jacks above the roundhouse roof, as a means for producing draft. One of these roads advises that this device was used and tested for a considerable length of time, but was found unsatisfactory and abandoned. The other road is still experimenting along this plan in connection with a "smoke-washer," and is not yet ready to report upon its results, except as to its difficulty in the maintenance of the plant—the metal parts having been eaten out several times during the year's experiments. All other roads report the use of a roundhouse steam blower and the locomotive blower used exclusively.

Methods of Firing Up.—From the reports it would appear that almost every combination of wood, fuel, oil, shavings, cobs, coke and bituminous coal had been used, with more serious objections to some than others. Several roads reported extensive trials of coke, but its use has been almost entirely abandoned because the ashes and gases emitted from the smoke jacks are much more objectionable than smoke when roundhouses are located near viaducts or high buildings; furthermore, it is almost impossible for employes to work in the roundhouse when engines have to be moved from under the smoke jacks to do necessary work, and also the cost of coke is greatly in excess of other fuels in most sections of this country. While the smoke from wood varies considerably in accordance with the size, quality and amount used, still it is more generally employed for kindling fires than any other fuel where the greatest effort is being made to prevent smoke at such times.

James Anderson,
General Manager, Sandwich, Windsor and Amherstburg Railway, and President, Canadian Street Railway Association.

Apply Bituminous Coal Carefully.—The plan of raising steam to nearly working pressure by means of wood or coke alone has been tried by many roads, but abandoned when it was found that the same results could be obtained by adding bituminous coal carefully to wood fire after the temperature in the fire-box had been somewhat raised.

In general the conclusion is that although there are many devices for reducing the amount of smoke from locomotives after steam is raised and engines are working, and while it is possible by great care and attention on the part of the roundhouse force to ted during this period, at the same time we find no practical way to reduce the amount of smoke emit- entirely eliminate all smoke while firing up locomotives at terminals.

BEST CONSTRUCTION OF LOCOMOTIVE FRAMES.

Following is an abstract of the Master Mechanics Committee, H. T. Bentley, Assistant Superintendent Motive Power, C. and N.W.R., Chicago, Chairman.

At the convention of 1904 this subject was very ably handled by a strong committee, and in reading over the reports we find we are traveling over much the same road as they did, and notwithstanding the great increase in size of locomotives, the committee's recommendations still hold good and the frames still break. Cast steel, made to a rational specification, careful foundry manipulation, adequate and suitable annealing, was spoken of as one of the remedies for frame breakages at that time, and it still is the favorite material, if properly designed, made and annealed. The clip binder was then, and is now, more used than probably any other type, the bolt and thimble style having been discarded in modern practice, owing to stretch of bolts. The specifications suggested by the committee of steel-casting manufacturers, and submitted to the Association in 1904, are as follows:

Material, Acid open-hearth steel, .28 carbon, .05 phosphorus, .05 sulphur, .60 manganese.

Frames will be rejected that show: Less than .20 or over .35 carbon; over .06 phosphorus; over .06 sulphur; over .70 manganese.

Tensile strength per square inch, not less than 55,000 lbs.

Elongation in 2 inches, not less than 15%.

All frames to be annealed.

After seven years it would be interesting to learn from the members if these specifications are entirely satisfactory, or, if not, what changes should be made to make them so.

While the breakage of a frame is a serious handicap, especially during busy

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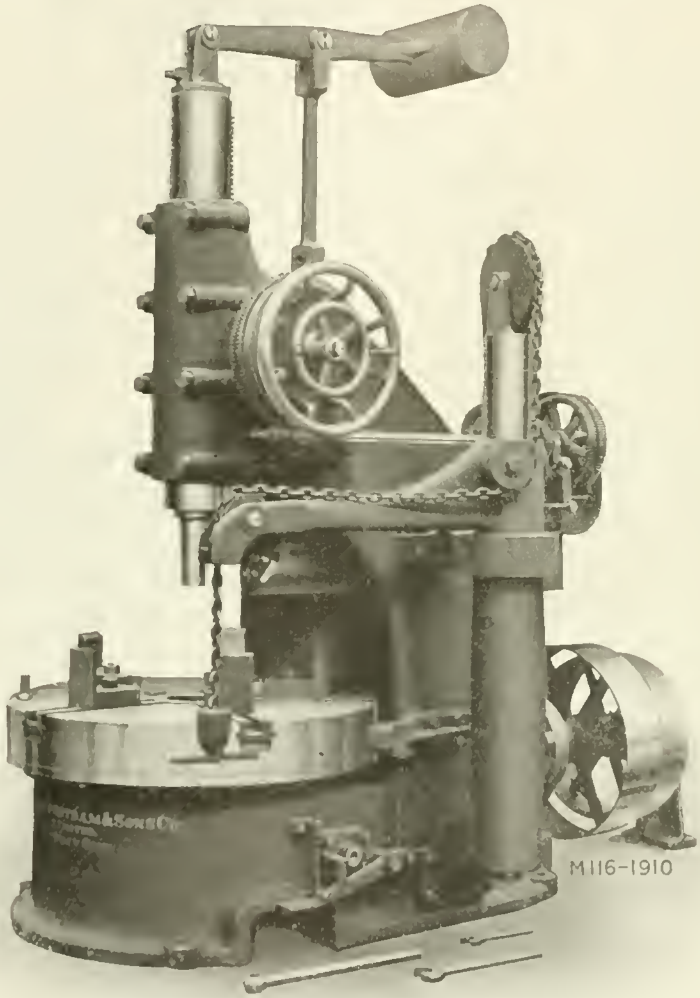

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seasons, yet the work of repairing has been simplified so that it is now possible to weld them in place with Thermit, oil, etc., and what used to be a two weeks' job, when all wheels had to be removed and frame taken to blacksmith shop, can now be repaired in place by dropping one pair of wheels and using oil, etc., and engine returned to service in a few days.

Following are the committee's conclusions and recommendations:—

That frame breakage is even more general and serious than we were at first led to believe, very few roads being free from this trouble. The longer the wheel base of engine, ordinarily, in combination with a roadbed having comparatively short curves, and with frames poorly designed or of inferior metal, or engines not properly kept up, the greater the trouble will be with frames breaking. This latter factor may not be reflected until after the engine has been put in good condition, and then a frame may finally break as a result of the previous poor condition of the engine.

We believe that with frames properly designed, if made of a good quality of cast steel, thoroughly annealed, with suitable cross bracing and engines kept up in reasonably good shape, breakage will practically be overcome.

That a cast-steel, one-piece frame, properly designed, of good material and thoroughly annealed, is better than a wrought-iron frame, because of the difficulty in welding up the large section in a perfectly satisfactory manner, and also because, in a casting, bosses, lugs, etc., can be added without the necessity of bolts and studs.

That a bar frame is better than a plate frame, this being the opinion of people who have used both; the plate frame causing about as much trouble with breakage in Europe as bar frames do in America.

The strap binder appears to be the favorite form of tying frame jaws together, although the cast-steel box binder, with adjustable wedges, has a number of friends, on account of its simplicity and ease with which it can be handled. The toes at base of jaws should be of sufficient depth and size to give plenty of metal to anchor to, whichever binder is used.

Cases have been reported where frame breakage was directly traceable to expansion of boiler not being properly taken care of by the use of sliding shoes; these shoes, if too tightly fitted or cramped in bolting, or if not lubricated, may prove unsatisfactory. Supporting boiler by means of vertical plates, if of sufficient strength, provides a satisfactory means of taking care of expansion without imposing undue strains upon the frames.

Mechanical Editor Wanted

An Associate Editor wanted, to take charge of the Railway and Marine World's Mechanical Department, dealing with railway rolling stock, machinery, shop practice, etc. A graduate in mechanical engineering preferred.

Applicants should give full particulars of educational qualifications, mechanical experience, etc., and state age and salary expected.

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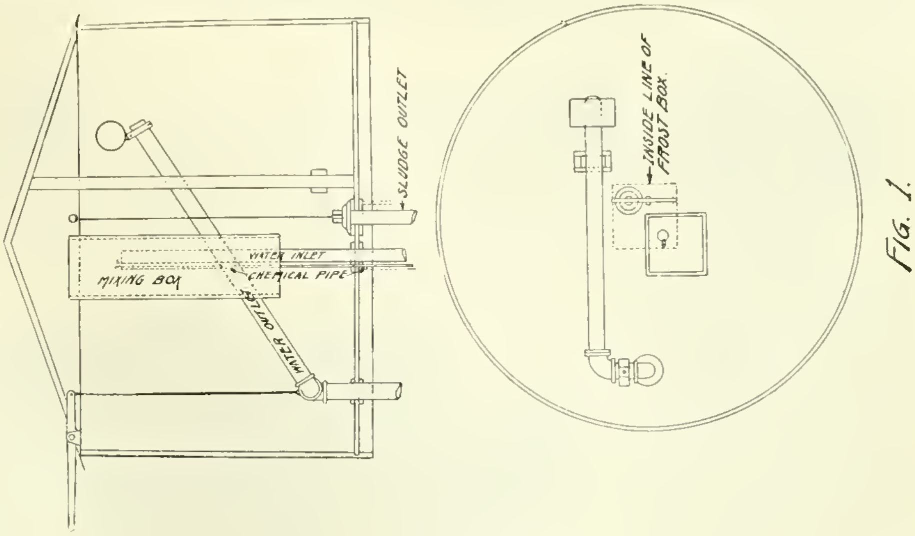
We should recommend to steel manufacturers the necessity of making a study of locomotive-frame casting, and the proper annealing of same, as a number of roads are using wrought iron, but would prefer steel if they could secure reliable castings.

As a general proposition, frame breakage does not ordinarily occur until engine has been in service two years or more, the older the engine the greater the trouble; we have come across cases, however, where they have broken earlier than this on account of flaws, poor welds, or other defects.



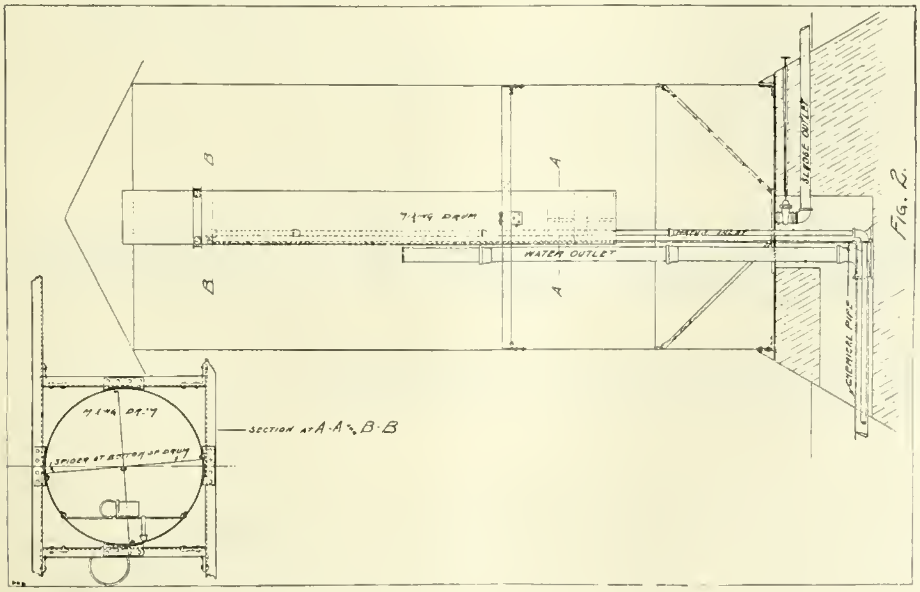
Treating Water for Locomotives. Fig. 1.

Treating Water for Locomotives.

The Master Mechanics Committee on the best method of treating water for locomotive use, when the density of traffic does not warrant water treating plants, H. E. Smith, Chemist, L.S. and M.S. Ry., Collinwood, Ohio, reported as follows:—Until within a few years, only two methods for the prevention of incrustation in steam boilers have been prominent, namely, boiler compounds and water-softening plants. The former, which include the familiar soda ash, aims to keep the incrusting substances in a soft, pulverulent condition until they can be blown or washed out of the boiler.

In locomotive service one of the difficulties connected with the use of boiler compounds is in applying them proportionally and regularly to all of the water. The plan of putting the matter in the hands of the engine crew was early found to be failure. The next step was to put the dose for a whole trip into the tender tank at the beginning of the run. This method involves a considerable and possibly harmful excess of compound at the beginning, and a corresponding deficiency near the end of the run. The obvious remedy is to transfer the base of operations from the locomotive to the wayside tank. To secure this, as well as some other advantages, separate softening plants have been adopted and have easily proved their usefulness. For small stations their use involves the difficulty of high fixed charges per unit of water treated. The small station must be able to respond to occasional heavy consumption for short periods and a softening plant having sufficient capacity for this purpose becomes expensive during normal times.

A very useful compromise between the two systems of treatment is an apparatus of simple construction which will mix the water uniformly with the proper proportion of some chemical solution which, although it will not actually remove incrusting solids, will act as



Treating Water for Locomotives. Fig. 2.

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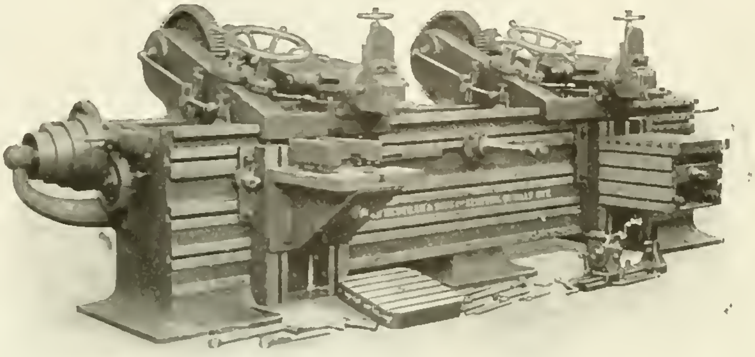

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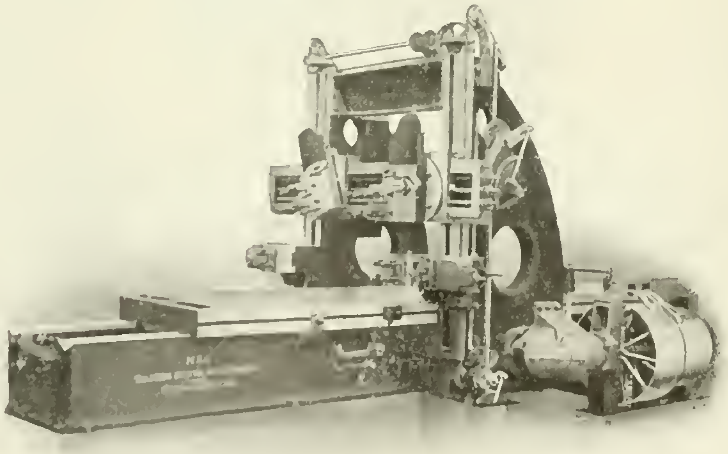

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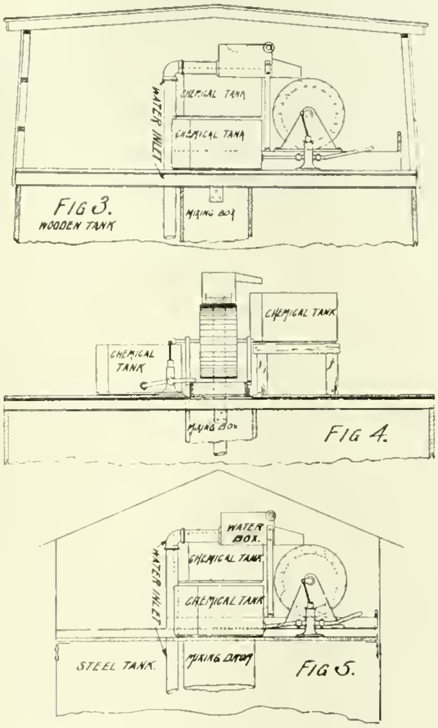
a boiler compound in keeping them in a soft condition in the boiler. If a fair storage capacity is provided, partial removal of incrusting matter may also be effected. The work of the committee indicates that few railroad officers realize the importance of this idea or the benefits to be derived from its systematic and intelligent application.

At track-trough stations soda ash (or other material) may be thrown directly into the trough, in regulated quantity, after each train passes. This crude but fairly effective method is used on one road at four stations, pending the installation of automatic devices. Much more systematic is the plan of pumping the solution with the water. This plan is used by seven roads. A small branch may be run from the water-pump suction to a tank of solution and the flow of the latter be regulated by a valve. This method has the advantage of producing a thorough mixture during the passage through the pump, but also sometimes causes deposits on the valves of the pump which interfere with their action. It is found preferable to pump the soda with a small power pump actuated by direct connection with some moving part of the water pump, thus insuring a correct proportional feed of solution. The discharge of the chemical pump should be carried to the large water tank independently of the water. In the water tank the chemical pipe should discharge close to the main water inlet in order to produce satisfactory mixture. As it is not practicable to run the small chemical delivery pipe for long distances, this system is not desirable when the tank is more than 100 feet from the pump house. When distances are greater the chemical apparatus should be separated from the pump house and transferred to a point close to the water-storage tank or to the top of the tank itself. In such cases, the chemical pump may be actuated by a positive displacement motor or water wheel through which passes all, or a definite aliquot, of the water to be treated. While such a device has long been used in full softening plants, it is not used for the simpler treatment, so far as the committee has learned, except on one road (the L.S. and M.S.). The same arrangement is suitable when water is taken from city supplies where the railway company has no water pumps.

For pumping chemical solutions, simple single-acting outside packed plunger pumps with outside check valves are much to be preferred. Plungers one to two inches in diameter and of six to 10 inches stroke are sufficient. Their attachment to any convenient moving part of a water pump is very simple. The essentials of the arrangement recommended for the usual wooden tub, when it is located near the pumping station, are shown in fig. 1. The water and chemicals mix in the central compartment, which may be merely a wooden box, and pass down and out at its bottom, rising gradually in the main part of the tank. The water is drawn off through the floating pipe and a sludge valve is also provided. Fig. 2 shows a similar arrangement for a steel tower. Owing to the larger settling space in the tower, a floating outlet is not necessary. If the water wheel or motor combination is required, it can be arranged as shown in fig. 3, 4 and 5.

The choice of suitable chemicals for the treatment of water under the conditions covered by this report is limited. It is very important to avoid the production of any sediment whatever, or else to provide both time and space in which to separate the sediment entirely. The separation of sediment in the pipes must obviously be avoided. When sediment must be avoided, as in ordinary wooden tanks when the water is used within two to four hours, soda ash, or possibly bicarbonate of soda, is the only reagent available. The latter is least apt to produce sediment. Neither reduces the total amount of incrusting matter, but both change it all to carbonate, or bicarbonates, so that the hard scale is largely avoided. This treatment has been found very beneficial on a number of roads. It is applicable to waters of moderate hardness. With very, very hard waters the amount of soda required to decompose the incrusting matter is liable to cause deposits. In this use of soda ash, as well as with soda ash placed directly in the tender tank, blowing and washing out must be done thoroughly at regular and sufficiently frequent intervals.

In the opinion of the committee the case well merits the small further elaboration of process and apparatus, sufficient to separate a considerable amount of sediment. For this purpose a steel tower, as shown, and the use of caustic soda are recommended. With correctly proportioned apparatus and proper adjustment of the soda, a water of 20 or more grains of incrusting solids, of which 25 to 50% is "permanent hardness," may be reduced to 10 grains, of which all is carbonate. In this manner a very troublesome water is reduced to one which will give very successful service, with reasonable care of boilers. So far as the committee is aware, this process is in use only on the Lake Shore and Michigan Southern, although after this report was practically complete it was learned that the Philadelphia and Reading used it some years ago.



Treating Water for Locomotives.
Figs. 3, 4 and 5.

One other reagent deserves mention, and that is barium hydrate. It has the great advantage of treating sulphates without introducing foam-producing alkali. When sulphate of lime is treated with barium hydrate, the lime ultimately finds its way to the sediment as carbonate of lime and the barium goes the same way as sulphate, insoluble in the water, which is then left entirely free from all the compounds concerned in the reaction. It should be borne in mind that barium hydrate is poisonous. The principal objection to its use is its cost. Not only is its price per pound higher than that of soda ash, but more pounds are required. It has, however, been used by a few roads on very high sulphate waters which could not be treated satisfactorily with soda. Theoretically, three pounds are required to do the work of one pound of soda ash in treating sulphates. In actual work, one road reports that five engines were treated one month with 4,290 lbs. of soda ash, costing $42.90, but, although this was all that could be used on account of foaming, the boilers were not clean. It was estimated that about twice as much, costing about $85, would have kept the boilers clean if it could have been used. For the same engines 13,000 pounds of barium hydrate, costing $390, was sufficient to keep the boilers clean. It must be borne in mind that these waters are very much worse than the average boiler water of the country.

Finally, it is urged that water purification of any kind should always be supervised by a competent chemist. The raw water should be analyzed occasionally and the chemical solutions, as well as the treated water, should be tested frequently.

Repair Equipment for Engine Houses.

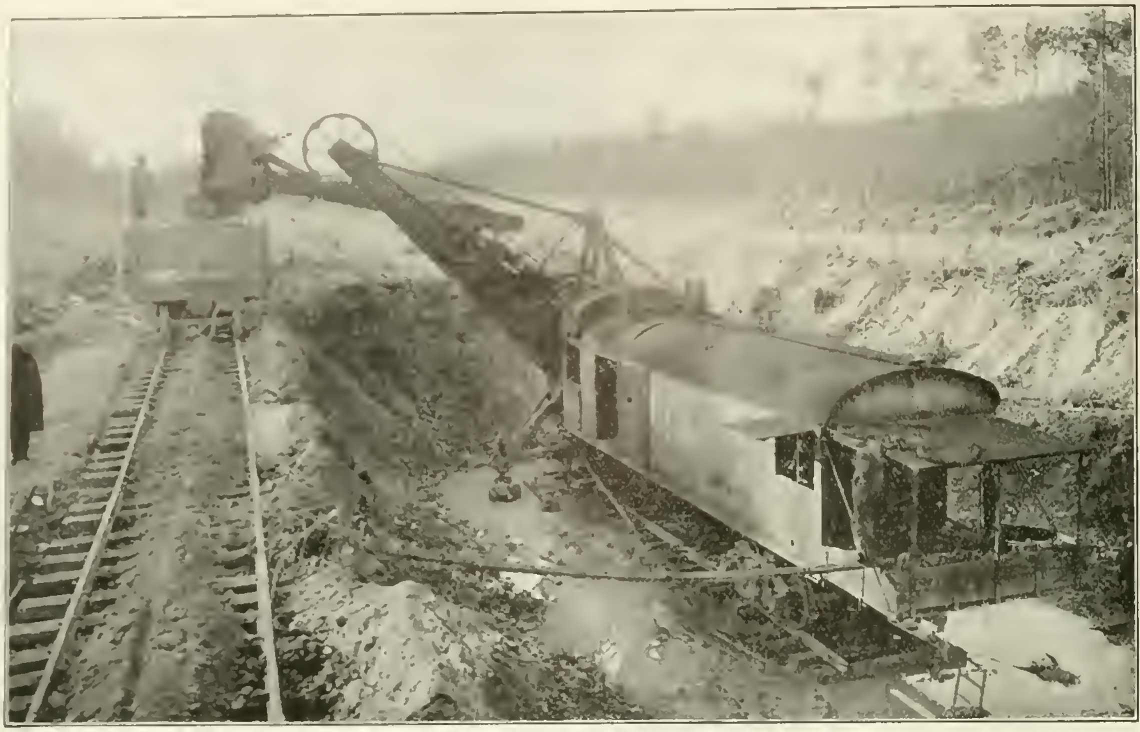
The Master Mechanics Committee, C. H. Quereau, Superintendent Electrical Equipment, New York Central Rd., New York, Chairman, reported as follows:—Your committee is impressed that this is a most important problem, worthy of careful study, and that on its correct solution efficient railroad operation depends as much as on any other single item in connection with train operation. We realize that no one solution will fit all conditions, and that each engine house should have special study. At the same time, we believe there are a few general principles which should be kept in mind in the design, personnel, equipment and management of all engine-houses.

Originally the word "roundhouse" was undoubtedly descriptive, but for a number of years it has not been. In short, there are at present few modern roundhouses which are round. Though there probably has been no confusion or uncertainty arising from the use of the word, for the sake of accuracy we venture to suggest the advisability of substituting the word "engine-house."

It seems axiomatic that locomotives should be worn out in legitimate service as soon as possible. The capital invested in a locomotive represents a certain total of earning capacity, and the sooner this total earning capacity is realized the greater will be the yearly returns on the capital invested. In other words, a locomotive should be in service, earning as large a percentage of the time, and in the engine-house or shop, spending as small a percentage of time and money, as possible. It also seems self-evident that the greater the efficiency of a locomotive, both in hauling capacity and fuel consumption, the greater the earnings of the capital invested in it, so that the conclusion that it should be kept as possible at one hundred per cent efficiency seems reasonable.

If it is a sound business proposition to wear out locomotives in service in as short a time as this can be done legitimately and to keep them as near one hundred per cent. efficiency as possible, these principles should be kept in mind in determining the extent to which repairs should be made at engine-houses, and this policy, once settled, in turn largely determines the repair equipment needed. In this connection we should not overlook the fact that any repairs made at engine-houses, more than light running repairs, increase the main shop capacity to a corresponding extent.

In order to obtain an approximate estimate of the net daily earnings of a freight locomotive, the following calcu-



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lations have been made. The gross freight earnings of a trunk line for the year 1910 were divided by 365 to get the average daily gross freight earnings. This result was divided by the total number of freight engines owned, plus nine-tenths of the switch engines owned. It was assumed the operating ratio for freight service was 60%, leaving 40% net operating income. The result was that $45 was found to be the approximate daily net operating income from each locomotive engaged in freight service. This computation assumes each freight locomotive was in service every day. This means that we could afford to invest $900 capital at 5% in engine-house repair equipment for each extra day in service we could obtain for each freight engine owned, by making the repairs at the engine-house instead of at the main shop. Expressed more concretely, it means that, if the engine-house repair equipment kept each of 100 freight engines in service two extra days a year, the extra net operating income would be 5% on a capital of $180,000. This does not necessarily mean an increased net operating income, as it may, and in the end probably would, mean a smaller capital invested in freight locomotives.

While the fixed charges at main repair shops do not appear in reports showing the cost of locomotive repairs, it is evident they enter into costs and should therefore not be ignored. With a view to determining approximately the importance of this item, the figures for a shop at which no car repairs are made, repairing about 600 engines during 1910, have been taken. The average cost of repairs per engine, including labor and material, was found to be about $1,200, so there must have been a considerable proportion of the engines which received only medium and light repairs. This plant, including land, buildings, machinery and tracks, has a book value of about $1,000,000. Assuming that 10% of this value represents the fixed charges, these amount to $100,000 a year, or slightly less than $170 per year per engine receiving repairs at that point. It it interesting to note that the fixed charges amount to between 15 and 20% of the total amount charged at this shop to engine repairs for 1910.

The cost of fixed charges for another shop, at which, with the exception of some miscellaneous work, only locomotives are repaired, amount to $234.94 per year for each engine repaired, and are 13.2% of the total value of the plant.

In all probability it will be conceded it would be a waste of time and money to run a locomotive to the main shop to have a driving-box cellar repacked or the flues cleaned. Why? Because it would involve time lost from revenue service getting the engine to, through and from the shop, reducing the yearly earnings of the engine; necessitate the use of main shop space, increasing the capital invested in shops, or reducing the main shop output; congest the shop-track movements and disarrange the shop routine, thus delaying other more important shop work. At the main shop, though the item does not appear in the statistics showing the cost of repairs, there are the shop fixed charges, including interest on the investment, repairs, taxes and insurance, a no inconsiderable item. At the engine-house the fixed charges would be very much less, as they would not include those of the engine-house proper, the tracks, turntables, ash pits, coal chutes and other facilities necessarily provided, and would cover only the comparatively small investment in the shop building and machinery provided for repair work.

There can be little room for doubt that when there is a great demand for motive power, engine-house foremen and master mechanics, rather than send engines to the main shop, though this is near at hand, will take chances, resulting in breakdowns and delays; which would not be taken if they had repair equipment of their own. In other words, with tools and men under their immediate control and responsible for results, engine-house men will, in all probability, keep the motive power in better condition, more efficient and less liable to breakdown, and take a greater pride in making repairs quickly than when repairs must be made by an independent organization.

It is, we believe, common experience that the qualifications of engine-house employes should be quite different from those of repair-shop men. The work of the repair-shop man is steady and should be accurate, thorough and first-class in every respect, with the aim that a locomotive shall remain out of the repair shop as long as possible, and there is no pressing necessity that his job be finished by a certain minute. In contrast to this, the work of the engine-house man is spasmodic; at certain hours he is extremely busy, working under high pressure, and again has little to do. His chief care is to have the engines ready for their next run and in such condition that they will make at least a round trip successfully. If he accomplishes this, he is not criticized if his work is not exactly to blue-print or standard and rather coarse. His training makes him fertile in make-shifts to "get the engines over the road" without a breakdown or delay, which the shop man would, and should, refuse to countenance.

Probably because of this difference in ideals, viewpoint and methods of the shop man and engine-house man, when an engine goes to the main shop from the engine-house to have a certain part repaired it usually happens that a considerable amount of other work is done which would not have been done at the engine-house and could just as well have waited till a general overhauling was needed. In other words, when repairs, other than general, are made at the main shop, more work is usually done than is necessary. It is very likely the further fact that the shop man's experience is not such as to educate his judgment as to what work he can with safety let go, prompts and impels him to do more than necessary. Whatever the cause, there can be little doubt as to the fact. To those lacking the experience, it no doubt seems that this practice could be stopped by the issue of proper instructions and supervision, but proper instructions do not change human nature or life-long habits, nor does a reasonable amount of supervision seem to work the miracle.

It is commonly the case at engine-houses that tools are frequently missing or inefficient for lack of repairs, resulting in considerable useless expense not only for tools, but in time lost in hunting them and exasperating delays in making repairs. We believe the remedy for this is a tool room with some one in charge whose duty should include not only the issuing of tools on checks, but as well keeping the tools in good condition and a proper supply on hand.

If a locomotive must lay in the engine-house a day for lack of the material necessary to repair it, there follows a loss of earning power which, if expressed in dollars, would pay a good interest on a considerable investment in storeroom stock. It requires no labored argument to convince a motive-power official that a storeroom in connection with an engine-house is an essential, but not all of them appreciate its relation to the earning power of the equipment for which they are responsible. It is the opinion of your committee that a reasonable business basis on which to determine the most economical amount of stock to carry at engine-houses, assuming, of course, that stock carried is only that needed for engine-house repairs, is its effect in increasing the earnings of the locomotives.

We believe there should be kept at all important engine-houses an ample supply of spare parts, such as air pumps, lubricators, injectors and bell ringers, which should be used to replace defective apparatus whenever it will take less time to exchange than to repair, and as a general proposition, that important repairs to such accessories can be made to the best advantage at the main shops, where special tools and machinist specialists are available. It seems evident that the interest on the investment in spare parts must be less than the loss in earnings resulting from not having them.

The conditions under which engine-house work is of necessity done are much dirtier and more inconvenient than in the repair shop, and the rates of pay usually not so attractive. It follows that to get and keep a desirable class of men, engine-house conditions should be made as attractive and convenient for them personally as possible, including good ventilation and heat, lockers, toilet and washroom accommodations kept in first-class condition. It seems to us particularly important to have a system of ventilation which will quickly and thoroughly carry off the steam and smoke, which are necessary in an engine-house, that work may be done more rapidly and efficiently than would otherwise be the case.

It is not an unusual policy in equipping important engine-houses to use worn-out and obsolete tools. We believe this is short-sighted, not only because a big shop is better able to find profitable use for such tools and better able to keep them in repair, but engine-house conditions warrant the best of tools. If a tool is not efficient enough for repair-shop work it will generally pay to scrap it.

We should, therefore, when studying the requirements of round-houses, determining the kind of work to prepare for and the repair equipment needed, have in mind the following points:

Locomotives should be held out of service for repairs as short a time as possible and should be kept as near 100% efficiency as possible.

The effect on earnings of time saved by repairs made at engine-houses.

The effect on engine efficiency of repairs made at engine-houses.

The smaller fixed charges for repairs made at the engine-house, compared with those at the main shop.

The effect of storeroom stocks on engine earnings.

Engine-house men should have ideals and methods quite different from those of shop men.

It is important that engine-house conditions and facilities should be attractive and convenient to get and keep good men and increase their efficiency.

These conclusions can be generalized in the statement that locomotive repairs and repair facilities at engine-houses are warranted when they will result in increased earnings either because of more or better engine service obtained from a given number of locomotives.

Engine-houses may conveniently be classified under three heads: Those at minor division terminals, or the outlying ends of branch lines, where only very light repairs are made; those at important division terminals, and not in connection with important repair shops, and those in connection with repair shops.

At outlying engine-houses we assume there would be no power-driven machines and suggest the following list of tools, the number and sizes to be determined by local requirements: Twist drills; drill sockets, taps—including machinists' steam-chest, pipe, wash-out,

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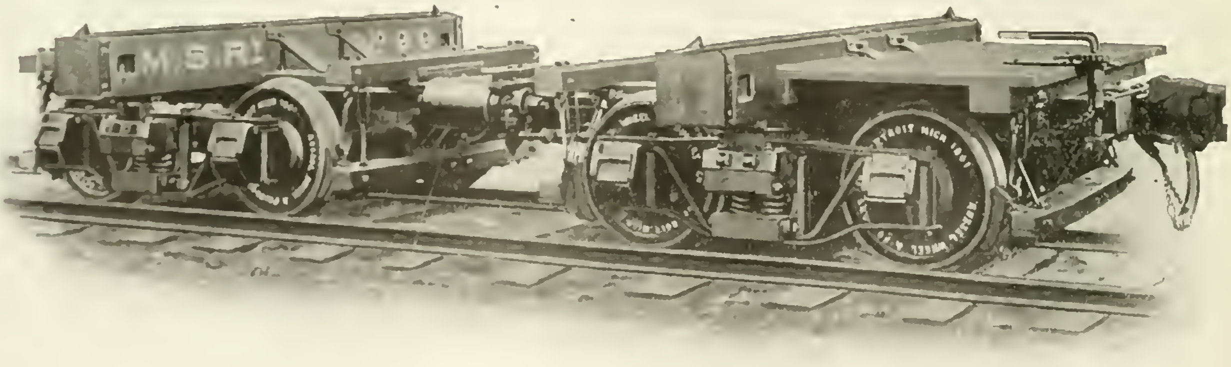

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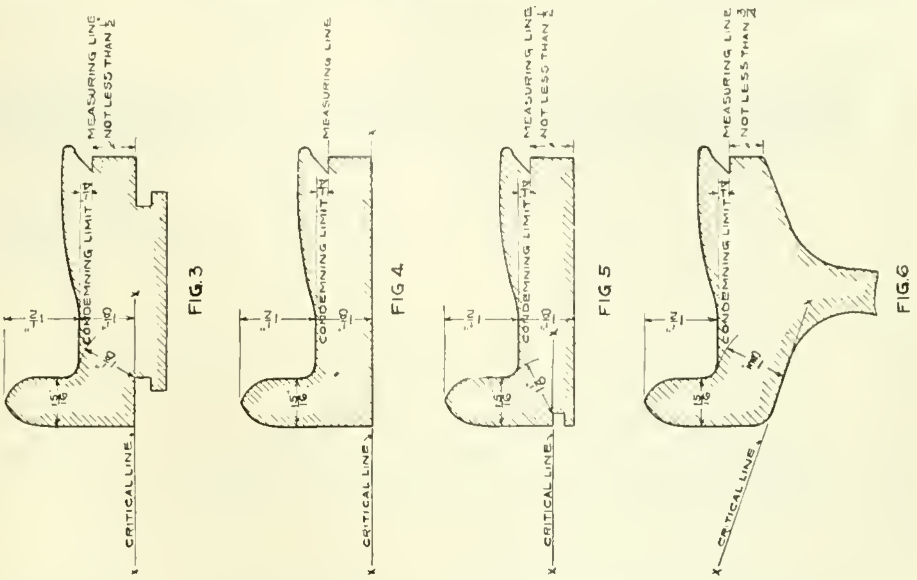
straight and taper, stay bolt; dies to correspond; pipe stock and dies; hacksaws; straight edge; flue tools—caulking, rolls, expanders, beading; pipe cutters; jacks, sledges, drifts, crowbars, saws, brace and bits; twist drills, extra long; drill chucks, ratchets and braces; surfacer plates; tinners' bench shears; reamers, rod and taper; wrenches, socket, crowfoot, hexagon.

In considering equipment for engine-houses at important division terminals not connected with repair shops, it is assumed there will be no dissent to the opinion these should be equipped with all such tools and appliances as will expedite the movement of locomotives through the house and keep them in first-class repair as far as this can be done without a backshop overhauling. It will take but little thought to convince the inquirer that the returns on capital wisely invested in such tools will make big returns when the resulting increased earnings of the capital invested in locomotives is considered, not only because of the time otherwise lost in going to, through and from the main shop, but, as well, the fact that locomotives sent to the main shop for specific repairs almost invariably receive more than these, the additional repairs not postponing the date of the final shopping and being almost inevitably made because of the training and point of view of the repair-shop forces—men and foremen—as mentioned in a preceding paragraph. Nor should it be forgotten that engine-house repairs will reduce the delays due to breakdowns and increase engine efficiency.

As local conditions vary and as conditions should largely determine facilities, it follows that your committee's recommendations can be only general. With this understanding, we submit the following suggestions. In general, we believe an engine-house should be equipped with driving and truck wheel drop pits and tools to take care of all necessary rod work, driving-boxes, ordinary valve-gear work and the replacing of flues needed between general overhaulings. In most cases it will be found that work of the nature indicated above can be done with but a very small addition to the engine-house force, because of the fact that, without this work, the men are, from the nature of the conditions idle an appreciable part of the time. In line with this, some roads have found it economical to have always at the engine-house for general repairs an engine not needing heavy boiler work.

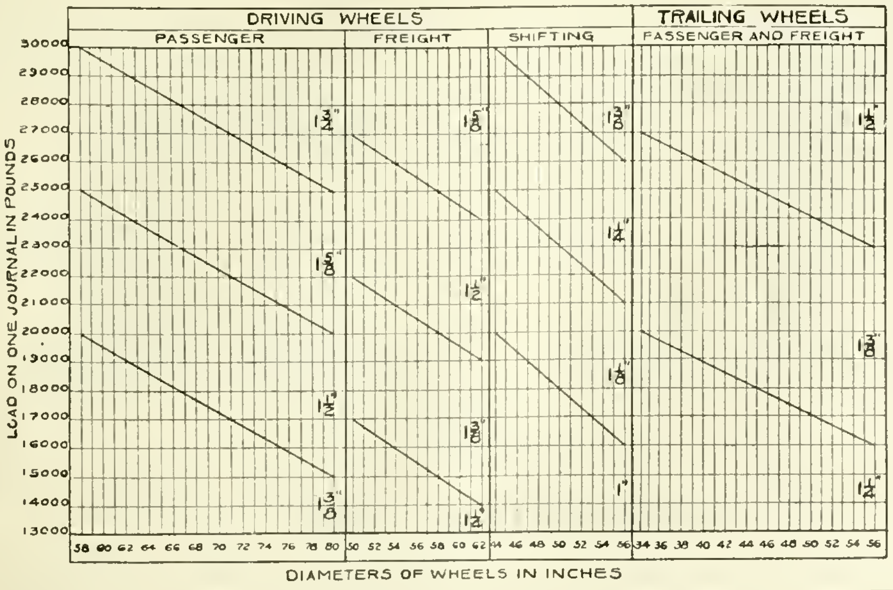


Contour of Tires. Figs. 3, 4, 5 and 6.

The list of tools suggested for outlying engine-houses, to be expanded to meet the requirements of a larger terminal: Ample storeroom stock; drop pit for driving-wheels; double blacksmith forge, face plate and tools; 72-inch boring mill; driving-wheel lathe; 38-inch tire turning-lathe; planer; slotter; sensitive drill; bolt cutter; 50-ton hydraulic press; power-driven valve-setting machine; air hammers; hot-water washout facilities; drop pit for engine truck and tender wheels; portable blacksmith forges; 36-inch boring mill; 24-inch lathe; 16-inch lathe; shaper; 36-inch vertical drill; emery grinder; pipe-bending machine; punch and shear; air compressor; air motors.

For engine-houses in connection with repair shops, the committee has not been able to agree. Several of the members feel that it is economical to depend on the main shop for considerable machine work. On the other hand, the other members believe that, except for tire turning, the equipment should be practically the same as for an independent engine-house, because of the saving of time and cost of repairs and the different training of engine-house and shop men.

ROAD LIMITS OF TIRE WEAR FOR DRIVING AND TRAILING WHEELS
VARIOUS CLASSES OF SERVICE – HELD BY SHRINKAGE ONLY.
FIG 2



Contour of Tires.

The Master Mechanics Committee on the contour of tires, W. C. A. Henry, Superintendent Motive Power, Pennsylvania Lines, Columbus, Ohio, reported as follows:—Your committee has been instructed to give consideration to the following and make recommendations:—The desirability of adopting the M.C.B. standard contour for engine truck, tender truck wheels, driving and trailing wheels, also limit of wear of tread, shop and road limit of last turning, maximum height of flange, thickness of flange and gauges. As the present standard contour for cast-iron wheels of the American Railway Master Mechanics' Association is identical with the 1909 standard of the Master Car Builders' Association, we are assuming that our instructions as to contour refer to steel and steel-tired wheels only.

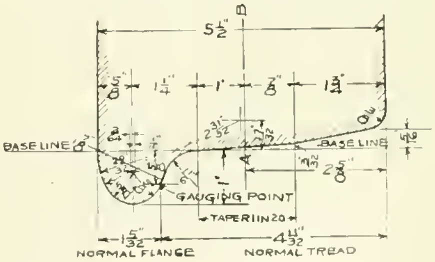


FIG 1

Replies to our circular of inquiry indicate that the M.C.B. 1909 contour is being very generally used for engine-truck and tender-truck wheels. Some roads have already adopted this contour for flanged driving-wheel tires as well. We feel that this contour is desirable for all flanged wheels under locomotives and tenders for the same reason that it is desirable for car wheels, in addition to which is the feature of uniformity.

The present A.R.M.M.A. standards call for six widths of flanged tires, and five widths of plain tires, as follows:—

	In.	In.	In.	In.	In.	In
Flanged tires	5	5 1/4	5 1/2	5 3/4	6	6 1/4
Plain tires	6	6 1/4	6 1/2	6 3/4	7	

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Replies from the manufacturers of steel tires indicate that of the flanged tires manufactured by them, there are practically but two widths, namely, 5½ and 5¾ inches, the large majority being the former. In the case of plain tires the prevailing widths manufactured are 6, 6½ and 7½ inches, there being little demand for the 6¼ and 6¾ inch widths. It is the opinion of your committee that one standard for cast-iron and one for steel and steel-tired flanged wheels, namely, the M.C.B. 1909 standards, and three widths of the present A.R.M.M.A. contour for plain tires will meet all requirements and be to the advantage of all concerned, due to the fewer number of standards. Fig. 1 shows the contour which we recommend for steel and steel-tired wheels.

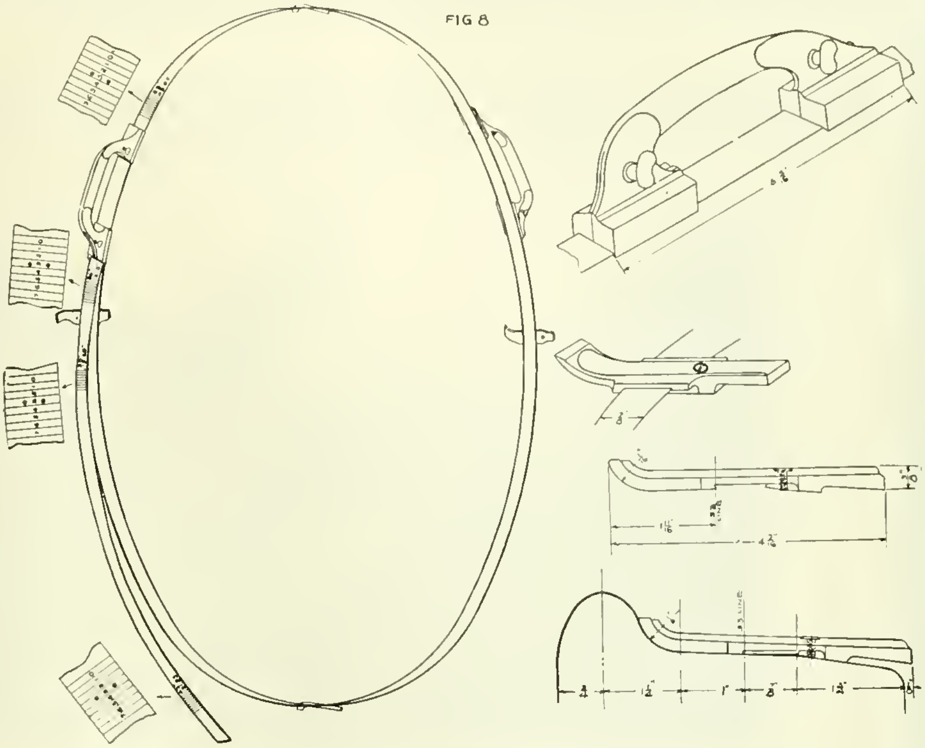
The prevailing limit of wear of tread or channeling for all wheels under locomotives and tenders is ¼ inch for locomotives in road service, and 5-16 inch for locomotives in shifting service, which we feel is good practice.

In investigating the subject of limits of wear of driving-wheel tires we have found the greatest variation. After full consideration, it does not seem possible, or advisable, to establish a minimum road limit to be followed by all roads. Where long, steep grades necessitate heavy braking, or severe weather conditions result in frozen roadbed for long periods of time, tires cannot be worn to the same degree of thinness as where these conditions do not prevail. Also, the use of retaining rings, which practice, however, is not universal, has a bearing on tire thickness. After consideration of all the data available, we feel that the limits prescribed on the chart submitted as a portion of our recommendations will be suitable for roads not having severe grades, or extremely cold weather, and not using retaining rings. Where these conditions prevail, or retaining devices are used, such deviations will have to be made as experience indicates are desirable.

The prevailing practice is to establish the shop limit of thickness of tires ¼ inch above the road limit. This limit is strictly one of economy and not safety, and will vary with the facilities for doing the work. We, therefore, hesitate to recommend a definite shop limit.

The M.C.B. limit for thickness of tire or rim for steel and steel-tired wheels is being generally followed in the case of engine truck and tender truck wheels with satisfactory results, and your committee recommends the same limits be adopted. See figs. 3, 4, 5 and 6.

The M.C.B. Association has already adopted a maximum height for flanges, of 1½ inches. This was considered the maximum height flange that would not, in service, damage track bolts, filler blocks, etc. There is no reason why this maximum height should be deviated from.



Contour of Tires. Fig. 8.

The question of gauges is one in which there is practically no uniformity, each road apparently having gotten up a gauge to suit its individual views. We are submitting recommendations for a shop or round-house gauge on which can be read direct the important dimensions, namely, channeling of tire, height of flange, and thickness of tire.

It has been suggested that the number of brackets on standard wheel circumference measure be increased from three to four, and the length of the brackets increased so as to project ⅛ inch beyond the rim when brackets are in proper position. The present method of graduating the circumference measure does not provide a definite boundary for each tape size, as the tape sizes are indicated by lines.

It is, therefore, recommended that instead of defining tape sizes by lines they be defined by spaces. Your committee is of the opinion that these changes in the size and number of brackets, as well the markings of the circumference measure, all of which are shown in fig. 8, are desirable. As a matter of information, we wish to add that these same changes are among the recommendations of the standing committee on car wheels to be made to the M.C.B. Association at the 1911 meeting.

We recommend the M.C.B. 1909 contour as shown in fig. 1 herewith, for all flanges, steel or steel-tired wheels, as follows:—(a), engine truck; (b), tender truck; (c), driving wheels; (d), trailing wheels.

Plain tires to be of three widths, namely, 6, 6½ and 7 ins., the contour to be the same as the present standards; the widths of 6¼ and 6¾ ins. to be eliminated.

Limit of wear of tread or channeling to be as follows:—¼ in. for all locomotive and tender wheels in road service; 5-16 in. for all locomotive and tender wheels in shifting service.

Road limit for driving and trailing wheels to be as specified in chart, fig. 2.

Road limit for steel and steel-tired wheels for engine and tender trucks to be as per figs. 3, 4, 5 and 6, which is the 1909 recommended practice of the M.C.B. Association.

Maximum flange height to be 1½ inches.

Gauge to be as per fig. 7.

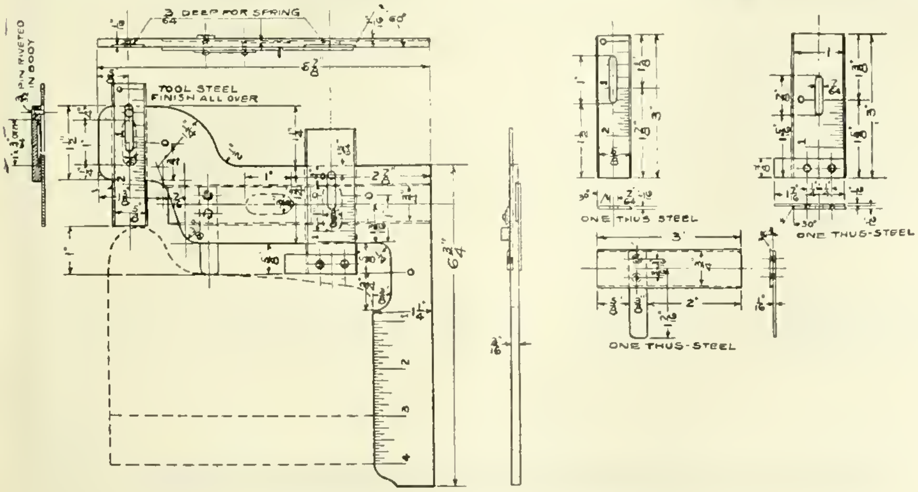
Wheel circumference measure to be modified, as per fig. 8.

Lubrication of Locomotive Cylinders.

The Master Mechanics' Committee, C. H. Rae, General Master Mechanic, L. & N.R., Louisville, Ky., Chairman, reported as follows:—

Your committee on the subject, "Lubrication of Locomotive Cylinders by up-to-date sight-feed lubricators, which operate by condensation of steam, adjustable feed, etc.; also to investigate the subject of mechanical lubricators," respectfully submits as follows:

Questions submitted to members:



Contour of Tires. Fig. 7. Tire Gauge.

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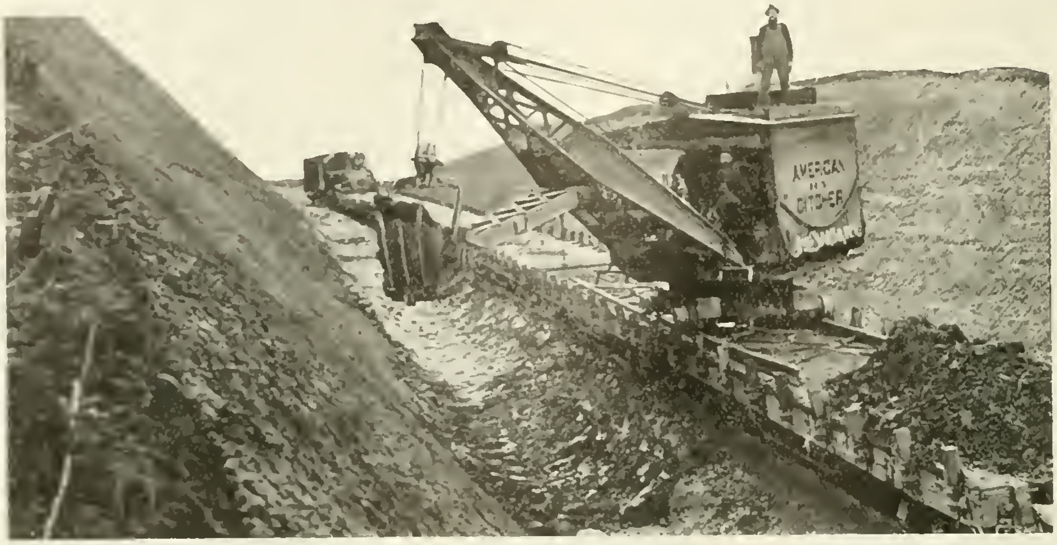

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1. Have you experienced difficulty in lubricating modern passenger and freight locomotives, with steam pressures from 180 to 230 lbs., with the up-to-date lubricators which operate by condensation of steam, adjustable feed, etc., and, if so, state experience and causes for same?

2. What recent improvements have been made in the hydrostatic-feed lubricators, to add to their efficiency and economical operation? Give explanation, experience and results.

3. If familiar with any device, independent of the hydrostatic-feed lubricators as furnished by the manufacturers, which increases their efficiency or economical use, give description, principle of operation, etc.

4. For the lubrication of valves and cylinders on modern locomotives, state your objections, if any, to the up-to-date hydrostatic-feed lubricator.

5. What types of mechanically operated lubricators have you used? State method of application, principle of operation, control and regulation of feed, location of device on the locomotive, with experience and results.

6. For the lubrication of modern locomotives, valves and cylinders, state your objections, if any, to the mechanically operated lubricator.

7. Are you familiar with any method, or device, for admitting the oil into the steam before it reaches the saddle casting? If so, state details, experience and results.

8. Have you had any experience with the oil-delivery pipe attached to deliver the oil into the steam-way in the saddle casting, instead of at the steam chest or valve chamber? State results.

9. What has been your experience in the lubrication of locomotive cylinders where superheated steam has been used? In this connection, state the degrees of temperature acquired, if hydrostatic or mechanically operated lubricators were used, and the results from both, where both have been used.

10. Do you consider it necessary to lubricate cylinders of locomotives using superheated steam, independently of the valves, using any type of lubricator?

11. What is your experience with the lubrication of cylinders on Mallet compound locomotives, using superheated steam with the hydrostatic-feed lubricator? With the mechanically operated lubricator?

12. Do you consider it necessary to lubricate the valves and cylinders on the high and low pressure cylinders of Mallet compound locomotive (by lubricators of whatever type) piped independently to each valve chamber and cylinder?

The replies to question 1 were universal in expression, that there is no serious difficulty now experienced in lubricating modern passenger and freight locomotives with the "up-to-date" lubricators of the hydrostatic-feed type.

Several of the members, in reply to question 2, have referred to a recent improvement in the hydrostatic lubricator, whereby it is made possible to close or shut off feeds without interference with the feed-valve adjustments. This is an economical feature, but of such recent date that no comparative data have been submitted as to the results obtained.

The replies to question 3 were limited. One member replies as follows: "The automatic steam-chest choke plugs, which feed against a constant boiler pressure in the oil pipe, and not against a pressure that fluctuates with pressure in steam chest, will result in a high degree of efficiency in the lubricator."

All replies to question 4 indicated there were no objections.

The replies to questions 5 and 6 embody the same general information, but were limited in number.

a. "Have used several types of mechanically operated forced-feed lubricators. Three of those experimented with were driven from a moving part of the engine. This was unsatisfactory, since the feed is required that does not vary with the speed of the engine. More oil is required per minute while the engine is worked hard at low speeds than when running fast with light throttle. To overcome this we used some forced-feed lubricators with independent air motor. None of them, however, have been satisfactory. It is difficult to apply to the filling holes screens that are fine enough to keep out dirt, without restricting the speed at which the oil can be put in, and the enginemen pull them out. The consequence is that the plungers wear rapidly, and after a time the feed becomes irregular. They are troublesome to maintain, and under conditions specified, in answer to question 1, gave no better results than the hydrostatic lubricator.

b. "We have experimented with two or three makes of mechanical-feed lubricators, but have been unsuccessful in getting as good results as we do with the hydrostatic-feed lubricators. The trouble with the mechanical-feed lubricator seems to be due to the difference in temperature; in warm weather, or during the warm part of the day, they would feed sufficient oil, but in cold weather, or at night when the weather is colder, they do not feed as well as when it is warmer."

c. "We have used two mechanical lubricating devices, which received their motion from a connection made to the valve stem and oil chamber, and regulating devices were located in the cab. Our test record shows that after considerable experimenting the device operated fairly well, but after a time gave considerable trouble and was finally removed on account of not giving satisfactory results. Mechanical means are objectionable, in that the device is so complex, and consists of so many parts, it is difficult to keep joints from leaking. To be properly installed, all pipes must be kept constantly filled and under pressure, with return valves at distributing points. On account of mechanical movements, parts will wear, and it will be more expensive to maintain, and in making repairs more oil is lost than with hydrostatic lubricators. Devices of this sort do not appear to have as yet been perfected to such an extent as to make them thoroughly reliable."

d. "Have used a force-feed lubricator with pipe connections to all driving boxes and to steam chest. Operated by mechanism deriving its motion from connection to Walschaert link. Lubricator located in the cab. While reducing friction on journal bearings, and delivering oil to steam chest, I do not consider it entirely satisfactory, for the reason that there is nothing to indicate that the pumps are working properly and delivering the oil until the valves become dry."

e. "Our objections to mechanically operated lubricators is that they are necessarily more complicated than the hydrostatic lubricator, without showing any beneficial results."

f. "Have tried some, but have not obtained satisfactory results."

g. "We have in the past used on some of our two-cylinder compound engines mechanically operated lubricators. Our objection to it was the rapid wear of the parts, leakages and annoyances."

h. "Using displacement plunger force feed. Secured in suitable location in cab, and operated by a series of rods and bell cranks, which are connected, either to eccentric blades and independent eccentric on rear, or other convenient axle, or by reducing-arm or back crank pin. Device subject to varying control, and fed by increasing or decreasing stroke of plungers by means of adjustment thumbnut.

"Results as to economy and distribution very satisfactory. Slight trouble experienced in experimental stage, due to method of operating lubricator."

There was but one reply to question 7, citing experience which is herewith submitted: "Present method in use with mechanically operated lubricator is to tap direct through dome into steam pipe, or throttle box. This method has proven to be superior to the old method of admitting to steam chest direct."

In this connection, and pertinent to the question, a member refers to a test: "Delivering the oil from the right side of the lubricator into the left cylinder, passing it through the smoke box, and from the left side of lubricator into the right cylinder in the same manner. The gases in the front end superheating the oil, and evaporating the water of condensation, putting the oil into the cylinders superheated."

The substance of the replies to question 8 from those who have had experience was in accord with the report from a member who has tried this method extensively: "On slide-valve engines consider results distinctly superior; on piston-valve engines reports vary, but general experience is that better results are obtained by putting oil into the steam passage."

Questions 9 and 10 have been considered jointly by the members. In the information submitted, the important features of this phase of the subject are well expressed in the quotation, as follows:

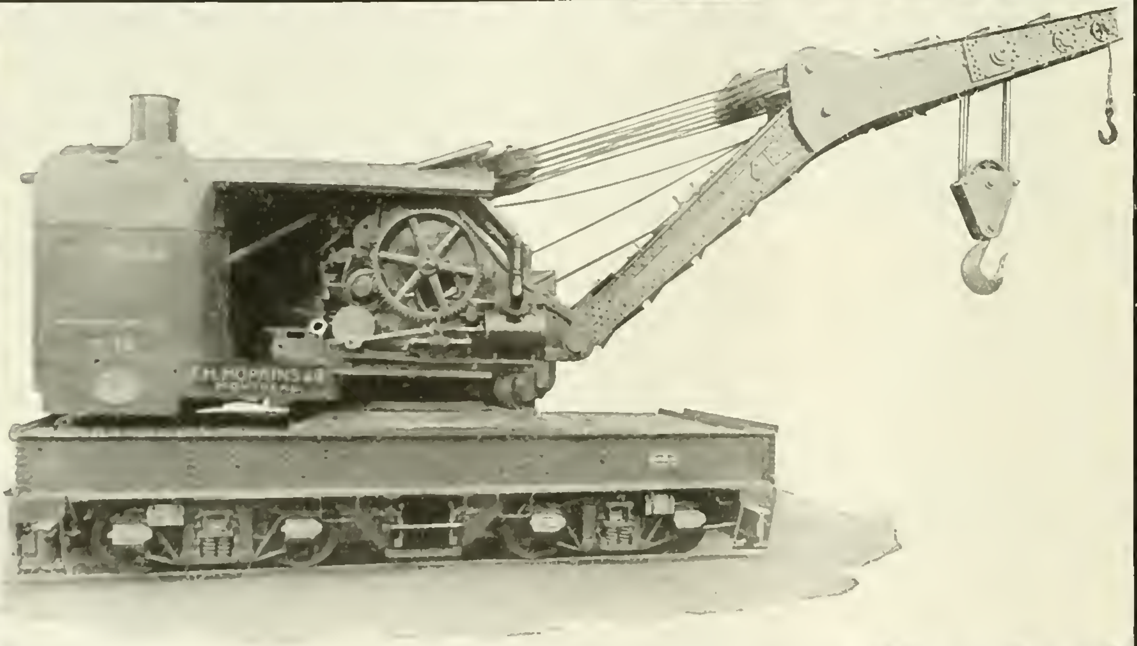
a. "Superheat varies from 550 to 580 degrees. Our regular practice is to use one feed pipe to valve chest, applying it to go to each end of valve in centre of the valve bushing. This lubricates valve very well, but it is questionable whether delivering oil to steam passage is not preferable. We also use one feed to each side of cylinder, at top in centre. This is not used unless required. When working with full throttle and long cut-offs, over considerable distances, find cylinder feed necessary. There is no difficulty whatever in obtaining satisfactory lubrication in superheater engines with hydrostatic lubricators, on account of difference of pressure between steam chest and boiler, previously mentioned. In fact, there is considerably less difficulty than on engines using saturated steam. In spite of this the piston-ring wear is far more rapid."

b. "On our superheaters we carry 170 lbs. boiler pressure; the maximum degree of superheat is 225. On a number of superheater engines we introduced oil both at the steam cavity and into the cylinder direct; found the latter connection unnecessary. The only trouble which we had with superheater engines was to get our men to use the drifting valve when the engine was shut off. If this is not done, have experienced trouble with the bushings cutting out, but on districts where the drifting valve is put on we are having very good success."

All replies to question 11 pertain to the satisfactory use of the hydrostatic lubricator. No information furnished concerning use of mechanically operated lubricators on Mallet compound locomotives using superheated steam.

Replies to question 12 were at variance as to the location of the oil pipes, but it was the consensus of opinion that piping to the high-pressure valves and cylinders only was insufficient for satisfactory lubrication.

The subject of lubrication of locomotive cylinders, though a familiar one, requires frequent consideration, to the end that the best possible results may be attained. The conditions of service are constantly changing; areas and steam pressure are increasing, and with the introduction of superheated steam and the Mallet compound locomotives, new problems, all tending toward an advanced standard of efficiency, while the demand of the hour is a decreased cost per unit of service.



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The experience of your committee, supplemented by the information received from the members of the Association, warrants the assertion that these is no serious difficulty now experienced with the use of that device.

The recent addition of a stop-feed feature is an improvement, rather tending to economical operation than to efficiency, and it behooves the manufacturers of this device to keep pace with, or in advance of, the constantly increasing demands.

The information obtained from the members, and cited in the foregoing, confirms the experience and opinion of your committee, that a properly constructed hydrostatic lubricator meets the locomotive requirements better than a mechanically operated lubricator, for the several reasons:

Familiarity with care and operation by the different classes of labor whose duties are in connection with its use.

Simplicity of design and substantial in construction; the operating parts being better protected from disarrangement or breakage.

A more accurate regulation of the amount of oil applied to the valves and cylinders under the varying conditions of service performed by the locomotive at different speeds and points of cut-off.

Because of less complication in construction and attachments, a corresponding less expense of maintenance.

The more general custom of delivering the oil to the steam chest or valve chamber is open to question, and there has been some very conclusive evidence submitted favoring the delivery of the oil into the steam at a point where it may become highly attenuated and intermingled with the steam.

The presumed effect of extreme temperatures, due to high pressure and superheat upon the oil, has been an objection to delivering the oil in the steam before it reaches the cylinder saddle. Information has been furnished and confirmed by the experience of some of the members, that the efficiency of a properly compounded mineral cylinder oil is not seriously impaired when protected by the steam. As the reports on the particular feature of the subject are indefinite, your committee recommends further consideration and experimentation.

The information obtained from the members who have had the most general and extended experience with locomotives using superheated steam confirms the experience and opinion of your committee, i.e., that the same reason advanced for the endorsement of the hydrostatic-feed lubricator on locomotives using saturated steam apply to locomotives using superheated steam.

The information submitted and quoted in the replies, pertaining to the proper location and number of oil pipes on superheated locomotives, is of much value. The experience thus far is not sufficiently conclusive to justify a decisive recommendation at this time. We would, however, particularly recommend that liberal openings be given to drifting valves, and attention to their proper manipulation, that the temperature of the cylinders may be promptly reduced within the lubricating possibilities of the oil when exposed to the atmosphere.

The problem of satisfactorily lubricating the Mallet compound locomotive is still in process of solution. At present it seems essential to pipe independently to the high and low pressure cylinders. however, your committee has been advised that there has been some experience, with satisfactory results by eliminating the pipes to the low-pressure valves and cylinder, substituting an auxiliary oil pipe to the receiver with the high-pressure steam connection. This carries sufficient oil over to the low-pressure cylinders to insure good service.

Increased efficiency and reduced expense of operation confronts the mechanical departments of our railways to a greater extent than ever before.

The final and most important recommendation of your committee is a continued live interest in the lubrication of locomotive cylinders."

Piston Rods and Cross Heads.

The Master Mechanics Committee on formulæ for diameter of piston rods and size of cross heads of locomotives, J. A. McRae, Mechanical Engineer, Michigan Central Rd., Detroit, Mich., reports as follows:—We have obtained data from a number of the largest railways and from locomotive builders. We find several different formulæ and designs in use which are giving satisfaction, therefore representative groups of the data obtained are presented, instead of recommending only one set of formulæ for each part.

GROUP I.—PISTON RODS.—Let

P equal area of piston × boiler pressure.

S equal fibre stress.

A equal least area of piston rod through key-way.

Allowable working fibre stress in tension, 9,500 lbs. per square inch for steel.

Then (1)

$$A = \frac{P}{S}$$

Piston rods to have enlarged fit in piston and in crosshead; ends to be approximately ¼ inch greater in diameter than body of rod.

CROSSHEAD KEY.—Allowable working fibre stress, 17,000 lbs. per square inch for spring steel.

The diameter of body of piston rods, based on 9,500 lbs. fibre stress in tension at least area through key-way, with nominal diameter of cylinder and full boiler pressure for simple engines, are shown in Table I. The sizes vary by even ¼ inches.

TABLE I.—DIAMETER OF BODY FOR PISTON RODS.

Cylinder Diameter.	Boiler Pressure.				
	180	190	200	210	220
16"	2¾"	2¾"	3 "		
16½"—17"	2¾"	3 "	3 "		
17½"—18"	3¼"	3¼"	3¼"	3¼"	
18½"—19"	3¼"	3¼"	3½"	3½"	
19½"—20"	3½"	3½"	3½"	3½"	
20½" 21"	3¾"	3¾"	3¾"	3¾"	3¾"
21½"—22"	3¾"	3¾"	4 "	4 "	4 "
22½ ..	4 "	4 "	4 "	4 "	4 "
—23"	4 "	4 "	4	4 "	4¼"
23½"—24"	4¼"	4¼"	4¼"	4½"	4½"
24½"—25"	4¼"	4¼"	4½"	4½"	4½"
25½"	4¼"	4½"	4½"	4½"	.....

The dimensions of piston-rod end for piston rods with body diameter as shown in table I. are given in table II. and fig. 1.

The dimensions of the crosshead end are given in table III. and fig. II.

CROSSHEADS.—The formulæ for figuring crossheads to be used with the above designs of piston rods were not obtained, but drawings of the crossheads were furnished. A standard formula in terms of the diameter of the rod could not be derived to cover all the sizes. The dimensions of the crosshead hubs for cast-steel crossheads of the "alligator" type are given in table IV. and fig. 3, and will probably answer in lieu of formula.

The limiting bearing pressure for crosshead pins is 4,800 lbs. per square inch. The bearing area of crosshead shoes, designed to be used with the above, are: Top shoes, 7 by 24 inches, and bottom shoes, 5½ by 24 inches, for piston rods 3¼ inches, 3½ inches and 3¾ inches diameter; top shoe, 8 by 24 inches, and bottom shoe, 6 by 24 inches, for piston rods 4¼ inches and 4½ inches diameter.

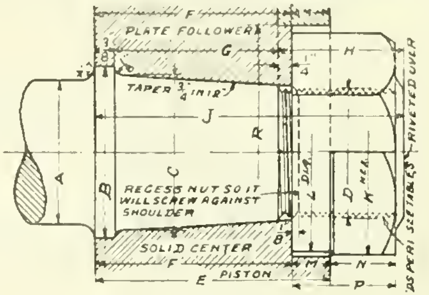

FIG 1

TABLE II

DIMENSIONS FOR PISTON END OF PISTON ROD.

A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S
2¾	3¼	3	2½	4½	3¾	3⅛	2⅜	5⅞	3⅞	3¾	¾	1¼	2	4¾	8
3	3½	3¼	2¾	4½	3¾	3⅛	2⅜	5⅞	4¼	4⅛	¾	1¼	2	5¼	8
3¼	3¾	3½	3	5½	4¾	4⅛	2⅜	6⅞	4⅝	4½	¾	1¼	2	5¾	8
3½	4	3¾	3¼	5½	4½	3⅞	2⅞	7⅛	5	4⅞	1	1½	2½	6	6
3½	4	3¾	3¼	6½	5½	4⅞	2⅞	8⅛	5	4⅞	1	1½	2½	6	6
3¾	4¼	4	3½	6½	5½	4⅞	2⅞	8⅛	5⅜	5¼	1	1½	2½	6½	6
4	4½	4¼	3¾	6½	5½	4⅞	2⅞	8⅛	5¾	5⅝	1	1½	2½	6⅞	6
4	4½	4¼	3¾	7	6	5⅜	2⅞	8⅝	5¾	5⅝	1	1½	2½	6⅞	6
4¼	4¾	4½	4	7	6	5⅜	3⅜	9⅛	6⅛	6	1	2	3	7¼	6
4½	5	4¾	4¼	7	6	5⅜	3⅜	9⅛	6½	6⅜	1	2	3	7¾	6

GROUP II.—PISTON RODS.—Let

P equal pressure per square inch on piston.

D equal diameter of cylinder in inches.

d equal diameter of piston rod.

l equal length of rod between piston-rod centre and the centre of the crosshead pin.

f equal allowable working compressive stress.

r equal radius of gyration of rod.

Then

$$(1)\ f \text{ equals } P\frac{D^2}{d^2}$$

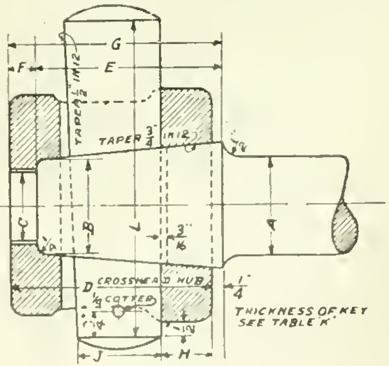

FIG 2

TABLE III

DIMENSIONS FOR CROSSHEAD END OF PISTON ROD.

A	B	C	D	E	F	G	H	J	K	L
2¾	2⅝	1 15/16	5¾	5¼	¾	6	1½	2⅜	⅝	9
3	2⅞	1 15/16	5¾	5¼	¾	6	1½	2⅜	⅝	9
3¼	3⅛	2 7/16	6½	6	¾	6¾	1¾	2⅝	¾	9
3½	3⅜	2 7/16	6½	6	¾	6¾	1¾	2⅝	¾	9
3¾	3⅝	2 15/16	7	6½	¾	7¼	1¾	3	¾	10½
4	3⅞	2 15/16	7	6½	¾	7¼	1¾	3	⅞	10½
4¼	4⅛	3 7/16	7½	7	¾	7¾	2	3¼	1	11½
4½	4⅜	3 [illegible]	7½	7	¾	7¾	2	3¼	1	11½

TO THE USERS OF

VANADIUM STEEL

Vanadium as a commercial metal is but a few years old, but in these few years it has revolutionized the possibilities of steel along many lines. The time has been too short, however, to enable all makers and all users of Vanadium Steel to arrive at uniform results; differences in the process of manufacture and variations in the methods of heat treatment have produced a diversity of results. Another cause for this diversity has been the opinion that Vanadium acts simply as a scavenger, and that steel in which no Vanadium is found on analysis may have been purified by just enough Vanadium to remove oxides and nitrides.

As the largest manufacturers of Vanadium Alloys in the world, and in possession of carefully verified data on all points concerning the proper way to make Vanadium Alloys, the correct processes of adding them to metals, and the methods of subsequent heat treatment, we feel obliged to call the attention of users of Vanadium Alloys and Vanadized metals to these important points:—

1. Alloys of Vanadium must be very carefully made in order to insure freedom from harmful ingredients and to secure a suitable melting point. All products of the American Vanadium Company are rigorously controlled during their manufacture; they are guaranteed correct in analysis and free from impurities known to be injurious in the metal for which they are designed.

2. Metals that are sold as Vanadized metals *must contain Vanadium on analysis*, otherwise the advantages contributed by residual Vanadium cannot be expected.

3. Vanadium Steels respond readily to heat treatment. Properly made and properly heat treated, Vanadium Steels in their various types surpass every other known steel for similar purposes.

4. While the methods of adding Vanadium to the various metals and combinations of metals are simple and easily followed, the user must realize that these methods must be exactly observed, and that a departure from the rules determined scientifically will necessarily produce wide variations in the properties of the finished product.

5. If you fail to get superior results from metals supposed to contain Vanadium, send us small samples for chemical analysis and physical examination. Complete reports will be made free with full instructions for heat treatment. State where the material was purchased, how it was treated, where it was to be used and any other essential details to enable us to communicate with you fully.

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(2) d equals $D\sqrt{\frac{P}{d}}$

(3) P equals $\frac{d^2 f}{D^2}$

Under repeated alternate strains allow the compressive stresses given in table V. (From Pencoyd experiments.)

TABLE V.

$\frac{1}{r}$	$\frac{4^1}{d}$	Steel (70,000 lbs.)	
20	13,360	70	6,520
30	9,540	80	5,940
40	8,380	90	5,300
50	7,760	100	4,680
60	7,120	110	4,220

CROSSHEADS.—The formulæ for cast-steel crosshead hubs used in connection with the above piston rods are shown in diagram fig. 4.

The allowable working fibre stresses are as follows:—

Rod at key-way.....12,500 lbs. per sq. in.

Key = $\frac{d}{4}$ bearing value..40,000 lbs. per sq. in.

Key = 1.4d shear ...13,400 lbs. per sq. in.

Hub diameter = 1.6d..28,000 lbs. per sq. in.

X = .6d shear hub.12,000 lbs. per sq. in.

Y = .5d shear rod.. 9,400 lbs. per sq. in.

GROUP III.—PISTON RODS.—The following formulæ for piston rods are expressed in terms of the diameter of rod at root of thread on piston end. Let

P = area of piston × boiler pressure.
A = area of piston rod at root of thread.
d = minimum diameter of piston rod at root of thread.
S = working fibre stress equals 10,000 lbs. per square inch.

Then

(1) $A = \frac{S}{P} = \frac{P}{10,000}$

(2) $d = \sqrt{\frac{A}{.7854}}$

Width of key to be less than d × 1.275.

The dimension for the piston rod in terms of diameter at root of thread on piston end is shown in fig. 5.

The centre part of crosshead fit is reduced 1-32-inch diameter so as to insure having bearing at ends of fit only.

CROSSHEADS. — The crossheads used with the above piston rods have following dimensions of hubs:—

$\frac{2}{d}$ = distance from end of hub to key-way

Piston pressure × .00003 = thickness of metal in outer end of crosshead hub for cast steel.

Bearing area in crosshead for crosshead pin = piston pressure divided by 12,000.

The three groups of formulæ are presented as representative of the data obtained.

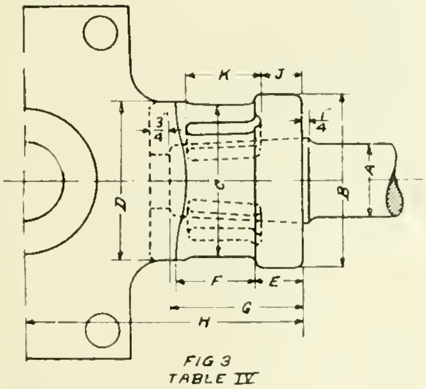

FIG 3
TABLE IV

DIA OF ROD A	B	C	D	E	F	G	H	J	K
2 3/4" 3"	6 1/2"	5 3/4"	6"	1 3/4"	3"	5"	10 1/2"	1 1/2"	2 13/16"
3 1/4" 3 1/2"	7 1/4"	6 1/2	7"	2"	3 1/4	5 3/4"	12"	1 3/4"	3 1/8"
3 3/4" 4"	8"	7"	7 1/2"	2"	3 3/4"	6 1/4"	13"	1 3/4"	3 1/2
4 1/4" 4 1/2"	9"	8"	8 1/2"	2 1/4"	3 3/4"	6 3/4"	14"	2"	3 3/4"

◆

Rules for Loading Material.

The Master Car Builders' Committee, A. Kearney, Asst. Supt. Motive Power, N. & W. R., Roanoke, Na., reported as follows:

Your committee begs to report it has no recommendations for changes in the present rules for loading material to present to this convention, except to correct some errors, for the most part typographical, that were made in the last issue of the rules. This conclusion has been reached as the result of the few subjects for change that have been presented during the current year, and more especially in order to give every one handling the rules more time and better opportunity to make up their minds what changes are really necessary.

First of all, we would direct your attention to rule 26 of the 1910 revision of the rules for loading material. In the 1910 issue rule 26 provides for the exclusive use of metal spacing blocks. Probably everybody will recall the discussion of this point on the floor of the convention last year, and the action taken at that time, to eliminate that modification requiring metal blocks exclusively. It was decided then to continue the use of rule 26 in its old form, that is, making the use of metal or wooden blocks optional. It was a mistake allowing rule 26 to go into the new issue of the rules in its modified form. The rule should read: "The cars must be jacked apart by placing one jack on each side of the coupler, separating the cars until the couplers are pulled out to the fullest extent, inserting hardwood or metal blocks (latter preferred) to completely fill the space between the horns of coupler and end of sill, and coupler release-rod chain disconnected, as shown in figs. 2 and 3."

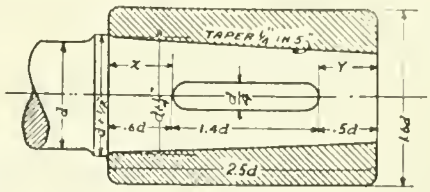

FIG. 4
Piston Rods and Cross Heads.

There is one subject or group of rules, however, we have been asked to consider, and they are the rules governing the loading of rolled material of small sectional area, rules 98 to 103, inclusive. The suggestion has been made that there seems to be the necessity for distinction in the use of centre binders on loads of flexible material, pointing out those loads requiring centre binders and those which do not. In fact, it has been intimated that it might be more advisable to confine the use of centre binders only to the loading of small angles, channels and I-beams, and possibly setting a limit for sizes of this material which would require centre binders. While we are free to confess we have not been adverse to securing conclusive information on this subject, it would seem, in the absence of same, that in the practical handling of such loads we have not had sufficient experience to definitely specify the size of material to which centre binders should or should not be applied. Hence, it is the opinion of your committee, that for the coming year, definitely specifying the application of centre binders to flexible loads is a question on which our experience is too limited to distinguish, and for that reason the rules governing the handling of this material remain unchanged in this respect. As a matter of information, inasmuch as the question has already arisen, and is one in which we are all interested, we would earnestly request the members of this Association to advise us during the coming year, what, based upon their experience, they would recommend for limits of size and shape of parts for twin or triple loads of flexible material which would require centre binders. There is one suggestion, however, to more clearly bring out the grouping of the rules governing the loading of material of small sectional area, by inserting the subheading, "Single loads," before the rules governing single loads, and the subheading, "Twin or triple loads," before the rules governing loads on two or more cars. This would seem to make the entire group of rules a little clearer, and as this is always advisable, and it does not in any way change the last issue, we have made use of the suggestions as follows: The subheading, "Single loads," comes immediately below the general heading and takes care of rules 98, 98-A and 99, while the subheading, "Twin or triple loads," comes immediately before rule 100, which is the first one in this series or group which refers to double loading. Such an arrangement certainly tends to clarify the ideas of some who interpret the general heading of rules governing the loading of rolled material of small sectional area as wrongly placed between rules 97 and 98, and think it should come between rule 99 and 100. It, however, remains a fact that rules 98 to 99, inclusive, cover the loading of the same kind of material on single cars as is spoken of in rules 100 to 103, inclusive, on two or more cars.

Again, it has been suggested that possibly rule No. 121, governing the loading of cylindrical boiler shells and tanks, be studied with a view of reducing the height of side blocking to a minimum consistent with safety. To do this, we feel, would require more information than our experience and advice from the various roads at the present time afford; therefore, we will have to let the rule remain unchanged for the present, and any modification will depend upon such advice and experience in handling that the various railroads may submit.

The only remaining topic we would call to your attention is the correction of several typographical errors in the last issue of the rules. They appeared principally in the rules for handling pipe, chiefly with respect to the cuts showing a greater number of strands of wire binders than is called for by the last revision, and viewing them as typographical errors, your committee has taken it upon itself to ask the Secretary of the Association to make such changes when it becomes necessary to print additional copies of the book of rules.

Before concluding, your committee feels constrained to again point out a disadvantage under which it is oftentimes laboring in its endeavor to put the rules for loading material in the best

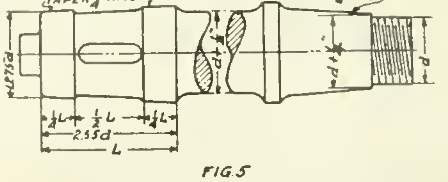

FIG. 5
Piston Rods and Cross Heads.

AUTOMATIC SCREW MACHINE

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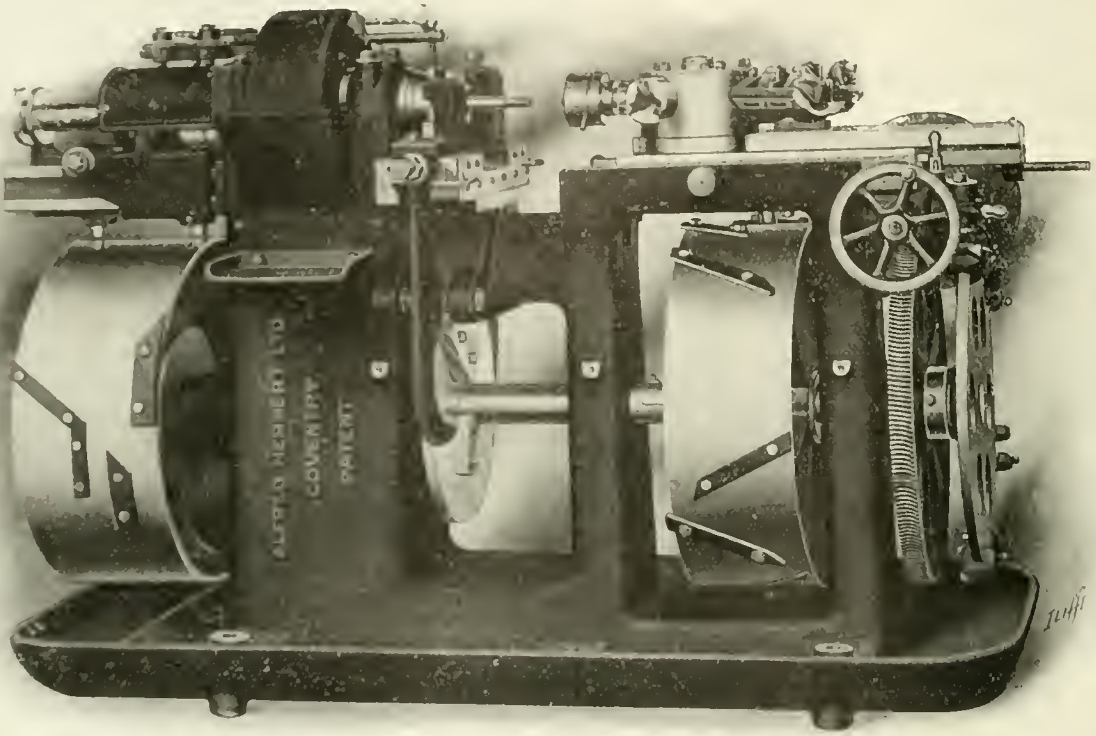
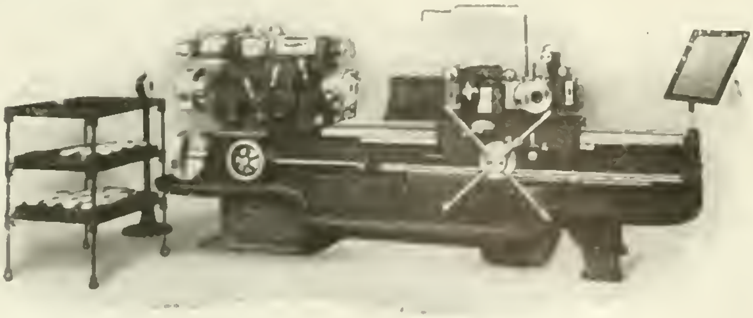


These machines are made in 11 different sizes, dealing with bars from ¾ to 3½, and are amongst the new machines installed in the Intercolonial Railway Shops at Moncton, N.B. They are also installed in the C.P.R. Angus Shops, C.P.R. Shops, Winnipeg, Canadian Northern Shops, Winnipeg, Transcontinental Shops, Winnipeg, and other factories.

The main frame is a rigid hollow casting which carries all the working parts of the machine.



Capstan Lathes, Hexagon Turret Lathes, and Combination Turret Lathes, manufactured in practically all sizes and to take bars from 9-16 in. to 5¾ in. These machines are especially suitable for locomotive building and repair shops, and are in use all over the world.

The 1911 design incorporates many new and valuable features which greatly increase the quantity and quality of the work produced. Descriptive matter free upon request

We also carry a complete line of machine tools of every description and can give prompt shipment on any class of machinery required.

We also carry a complete line of HIGH SPEED STEEL and steel for all purposes. Likewise a special HIGH SPEED TWISTED DRILL, which is made from special registered section steel of new composition, which we guarantee to give equal if not better results than any drill on the market to-day Enquiries solicited.

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and most desirable shape for all concerned. This matter was brought to your attention at the last convention, but it is of such primary importance and presents so many possibilities for stimulating and increasing the efficiency of the rules, that we are sure it will do no harm to once more direct your attention to it; we refer to the great possibility for increasing the efficiency of the rules, if the committee were kept informed of practices made use of to meet local requirements in loading. It is reasonable to suppose that physical conditions and requirements bring up problems locally which are met by excellent suggestions for changes in the rules. Some may be of minor importance, while again others are of considerable moment. These oftentimes valuable remedies seldom reach us, hence we refer to the disadvantage, because the committee, less posted, perhaps, in some local situations, is endeavoring to make general and specific rules for the guidance of all.

Occasionally the Secretary will forward your committee a communication—sometimes for the interpretation of the rules covering a particular point, and again for the method of loading a particular commodity—but we are not reaping the benefit of the many good ideas arising in handling commodities under the local conditions, which knowledge would greatly tend to increase the efficiency of the committee. we are only endeavoring to bring about a plan by which your committee can derive the benefit of the broader experience, so that the rules will be still further increased in their efficiency and integrity.

◆

Prices of Labor and Material for Steel Cars.

The Master Car Builders Committee, F. H. Clark, General Superintendent Motive Power, C.B. and Q.R., Chicago, Chairman, reported as follows:—

Your special committee has considered the subject on prices for labor and material, in connection with all-steel and composite cars for the M.C.B. Rules of Interchange, and at this time we do not think it advisable to make any radical changes in the way of submitting prices for repairs to individual parts, on account of it being impracticable to designate the extent of damage to the individual part on the various classes of cars, and establish a stipulated amount to make necessary repairs, for the reason that there are various parts of cars slightly damaged, which do not interfere with the safety for service or impair the strength of the car. On this account, we considered, where it is found necessary to make extensive repairs, the rules as now recommended to be changed on the rivet basis, hourly labor charges and material prices will cover all requirements in making necessary repairs to this class of equipment for the present. In considering this subject, it was found that the parts of steel cars not included on the rivet basis are already covered by the present rules established for repairs to wooden-car equipment and which will govern.

The recommendations of the committee are as follows:—

Eliminate all present rules on pg. 58 of the 1910 Code of Rules with reference to repairs to steel cars and substitute the following:—

"All rivets ½-inch diameter or over, 12c. net per rivet, which covers removal and replacing of rivets, including removal, fitting, punching or drilling holes when applying patches or splicing and replacing damaged parts, not to include straightening.

"All rivets ¼-inch diameter and less than ½-inch diameter, 7c. net per rivet, which covers removal and replacing of rivets, including removing, fitting, punching or drilling holes when applying patches or splicing and replacing damaged parts, not to include straightening.

"Straightening or repairing parts removed from damaged car, 60c. per 100 lbs.

"Straightening or repairing parts in place on damaged car; also any part that requires straightening, repairing or renewing, not included on rivet basis, 24c. per hour."

Paragraph showing steel-scrap credits to be eliminated from rule 111, on pg. 58; also rule 107, on pg. 51, to be eliminated, and charges and scrap credits shown in rule 104, on pg. 51, change to read as follows:—

	Charge.	Credit.
"Steel, plate and structural, per pound	.03	.00½
"Steel, pressed and flanged, per pound	.04½	.00½"

In making repairs to cars on a rivet basis, the cost of removing and replacing fixtures not secured by rivets, but necessarily removed in order to repair or renew adjacent defective parts, should be in addition to the rivet basis; rules covering wood-car repairs to govern.

Paint applied, one-quarter-hour labor to be allowed per pound of paint applied and on the basis of rule 105.

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Refrigerator Cars.

The Master Car Builders Committee, M. K. Barnum, General Superintendent of Motive Power, Illinois Central Rd., Chicago, Chairman, reported as follows:—This committee was instructed to investigate and report on three separate questions, as follows:—(1) The uniform height of refrigerator cars from the rail to the floor. (2) Adoption of standard drip cup for refrigerators. (3) Relatively small ice tanks.

(1) Uniform Height of Cars.—Our investigation of this subject shows that a large majority of the refrigerators built within the last 10 years or more have the height of floor varying between 48 and 50 ins. above the rail, but the Santa Fe Refrigerator Dispatch has some 6,000 cars with floors approximately 46½ ins. above the rail. We have not been able to learn of any cars which have the floor at 42 ins. above the rail. as stated in the Railroad Refrigerator Service Association circular 84, dated June 26, 1909.

We also find that all freight-house platforms of the largest roads and packing-houses vary in height from 42 to 46 ins. above the rail, and understand that the American Railway Engineering and Maintenance of Way Association has not yet adopted any standard height for freight-house platforms; we therefore suggest that the Master Car Builders' Association adopt a minimum of 48 ins. as the recommended practice for refrigerator-car floors. and that the matter be taken up with the American Railway Engineering and Maintenance of Way Association with the view of having them adopt 46 ins. as the maximum height of freight-house platforms, as we believe that this will make ample allowance between the bottom of refrigerator doors and top of platforms, so as to avoid trouble about opening the doors at freight houses.

(2) Standard Drip Cup.—In circular no. 73 the Railroad Refrigerator Service Association specifies the following requirements for an ideal drip cup:—(A) It must keep the lower end of drain pipe submerged in water when tanks contain ice during summer or winter. (B) It must prevent water in drip cup from freezing in winter when cars are iced without salt. (C) It must prevent cold air from entering car in winter when cars are not iced. Your committee has not yet been able to find any drip cup which will meet all of these requirements, which now seem impossible to meet in full, but the committee will continue to investigate the subject and make supplementary report at the convention.

(3) Relatively Small Ice Tanks.—Refrigerator cars may be divided into two general classes: (1) Fresh meat cars. (2) Fruit and dairy cars. (1) The best and most modern refrigerators are used for shipping fresh meats, and these are provided with ice tanks which experience has proven to be amply large. Fresh meat cars use crushed ice and salt, and a total capacity of 5,000 lbs. per car has been found ample for all ordinary service conditions; the committee, therefore, recommends that tanks of 5,000 lbs. ice capacity be adopted as the minimum for such cars.

(2) For fruit and dairy refrigerators a minimum of 3,000 lbs. per tank, or 6,000 lbs. per car, is recommended. Our investigation leads us to believe that the complaints mentioned by the Railroad Refrigerator Service Association have been caused by old cars that had ice tanks much smaller than the present practice, which are rapidly disappearing from service, and we believe tanks of the size above recommended are amply large to protect shipments under all ordinary conditions.

The Traffic Department will be the first to object to encroaching any further than necessary on the loading space of the car, and there seems to be no present necessity for increasing the outside length of the car beyond about 40 feet, the present size of the largest refrigerator.

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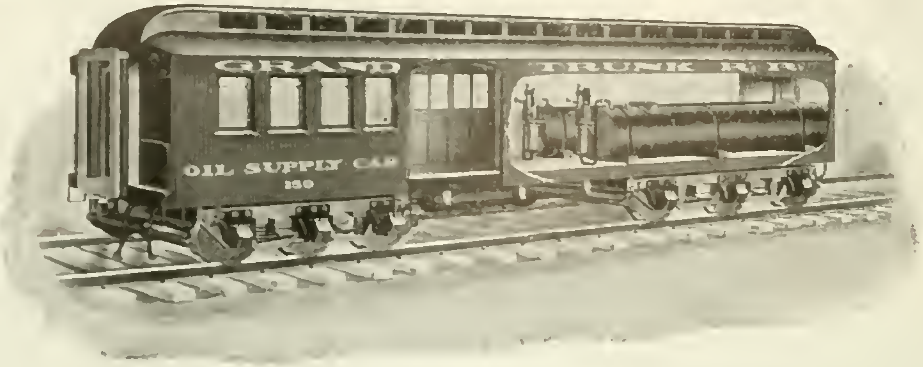
Flange Lubrication.

The Master Mechanics' Committee on flange lubrication, M. H. Haig, Mechanical Engineer, Atchison, Topeka and Santa Fe Ry., chairman, reported as follows:

It has been the purpose of your committee to obtain sufficient information to determine, (1) to what extent trouble from flange wear is experienced, (2) the lubricants and means of applying them which are in use, and (3) the effectiveness of lubrication in overcoming flange wear and its attendant evils. A circular of inquiry was issued and the committee's report is based upon the replies received from motive-power officials of about 30 railroads representing widely different grade, curvature and weather conditions of operation. The committee, therefore, feels justified in looking upon a synopsis of these replies as indicative of the flange-wear situation and, in general, the effectiveness of lubrication.

Among the detailed replies to the committee's circular, two only indicate that the officials represented are not having trouble in their territory from flange wear. In addition, five replies state that lubricators are being used or experimented with, which indicates trouble from this source. Eight answers on the other hand state that the railroads represented have no lubricators in use, and, unfortunately, no statements are made as to flange wear conditions. Among these are the Erie, in the east, and the Great Northern, in the west, both of which pass through a mountainous territory, and, therefore, have a large number of curves to contend with. The Erie, however, is investigating with a view to adopting flange lubrication, a fact which would indicate that it is experiencing some trouble due to flange wear.

The Lake Shore & Michigan Southern Ry. reports having no trouble with road engines, but in some yards the wear on driving-wheel flanges of six and 10 wheel switch engines becomes a very serious matter. The Santa Fe has had the same



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experience with six-wheel switch engines where a large percentage of the total mileage is made on curved track.

The railroads reporting flange wear are shown in table I., together with maximum curvature and grade conditions and the locomotive types most affected. This table presents a review of the flange-wear situation as complete as the data at hand will permit. It will be noticed that with one exception the curvature reaches a maximum of six degrees or more. It would seem, however, that the mileage of curved track relative to total mileage would produce more effect on flanges than the degree of curvature alone. There are a number of other conditions affecting flange wear; among them are length of rigid wheel base, speed, lateral movement and tire spacing, and the degree of stiffness of engine truck.

Table II presents a list of railroads reporting, the locomotive types employed on these railroads and the locomotive types having greatest flange wear. The locomotive types reported in service on each railroad are designated by crosses (X), marked in the lines opposite the initials of the railroad and in the columns headed by the locomotive types.

Pacific in passenger service and consolidation in freight service are the types on which flange wear is most prevalent. However, where types are employed with longer wheel base than the consolidation, these are reported as being subject to greatest flange wear. In general, if other conditions are equal, it is the type with longest rigid wheel base on which flange wear is greatest. There are some notable exceptions to this rule in passenger service. One division of the Pennsylvania Rd. with engines of the Pacific type in service reports greatest flange wear on those of the Atlantic type. This is also the case on the eastern lines of the Santa Fe. While there is no statement to this effect, this condition may be due to the Atlantic type operating on a section of the road more severe on flanges because of excessive curvature.

The figures covering metal loss have been presented according to different standards and it is, therefore, difficult to compare them. In some instances, the loss has been measured in radial thickness of tires, in others by weight per turning, and in still other cases by the value of metal turned off. Where stated in radial thickness, the amount varies between ¼ and ¾-in. Loss in weight is stated as varying between 55 and 1,150 lbs. per engine per turning, depending upon the number of wheels and the extent of flange wear. The loss of metal expressed in terms of money value for engines of various types is given as follows: Four-wheel switch, $45; six-wheel switch, $50; standard, $50; ten-wheel, $50; consolidation, $60; mallet, $90.

The total mileage obtained during the life of a set of tires appears to be the most satisfactory measure of tire service. On this measure as a basis, the estimate presented in table III. has been prepared to show the loss due to turning tires on account of flange wear, compared with the total mileage during the life of tires when turned for tread wear. It represents the service obtained from Atlantic type locomotives operating on the Missouri Division of the Santa Fe. The mileage between tire turnings is computed from the average mileage per locomotive per month and the time between turnings; the average mileage per locomotive per month was obtained from records of 20 locomotives over a period of eight months. Before lubricators were applied, these locomotives averaged 18,600 miles between tire turnings before reaching the limit of 6 in. vertical flange wear. Since the adoption of flange lubrication, the same locomotives average 60,400 miles between tire turnings for tread wear. Figs. 1 and 2 graphically illustrate the method of arriving at the aggregate loss given in table III. In fig. 2 is shown the condition of tires with 5-16-in. tread wear after making 60,400 miles. To facilitate proper turning, ⅛-in. is usually removed in the lathe. The total reduction in radial thickness between successive tire turnings will, therefore, amount to 7-16-in. Fig. 1 illustrates the condition of tires when the locomotive is shopped because of sharp flanges after making only 18,600 miles.

TABLE II. LOCOMOTIVE TYPES IN SERVICE AND TYPES HAVING GREATEST FLANGE WEAR

Railroad.	Types In Service.											Greatest Flange Wear.						
	4-4-0.	4-4-2.	4-6-0.	4-6-2	2-6-2.	2-6-0.	2-8-0.	2-8-2.	2-10-0. 2-10-2.	Switch.	Mallet.	4-4-2.	4-6-0.	4-6-2.	2-8-0.	2-10-2.	Switch.	Mallet
C. R. I. & P.			×	×			×								×			
C. P.R.—Lines West	×		×	×			×								×			
E. P. & S. W.			×	×	×		×		×									
S. P.—Salt Lake Division				×		×	×			×				×				
Santa Fe—Coast Lines																×		
Santa Fe—New Mexico Division				×			×		×					×				
Santa Fe—South West Lines	×	×	×		×	×						×						
Santa Fe—Gulf Lines	×		×	×			×							×	×			
Santa Fe—East Lines	×	×	×	×	×					×		×						
C. & S.—Narrow Gauge						×												
P. R. R.	×	×		×		×	×					×			×			
P. R. R. West Penn. Division	×	×	×	×	×	×	×							×			×	
*Vandalia	×	×	×	×		×	×			×								
B. & L. E.			×			×	×			×					×			
H. V.						×	×											
D. & H.															×			×
L. S. & M. S.					All	Types											×	
W. P. T.	×						×			×	×							
I. C.	×	×	×	×			×			×							×	
A. B. & A.			×					×		×							×	
T. R. R. Ass'n. of St. Louis									×								×	

*Very little difference in flange wear observed on types in service.

TABLE I.—RAILROADS REPORTING FLANGE WEAR ON LOCOMOTIVE DRIVING WHEELS

Railroad	Curvature	Grade	Types most Effected	Mileage Between Turnings	
				For Flange Wear	Estimated Proper
C.R.I. & P.	6°	1%	2-8-0	40,000	90,000
C.P.R.—Lines West	10	Max.—5% Much mil'ge, 2.2%	2-8-0	*	96,000 to 120,000
E.P. & S.W.	7½°, 12, 16, 33	1%, 3%, 5.7%		*	
S.P.—Sacramento Div.	8° and 10				
Santa Fe—Coast Lines	10°	Max.—3% 25 miles—2.2%	2-10-2	†	
Santa Fe—N.Mex. Div.	6, 8°, 10°, 14	1.4% to 3.7%	4-6-2	2-10-2—18,000 to 20,000 4-6-2—25,000 to 30,000	35,000 to 40,000. 75,000 to 100,000
Santa Fe—S.West Lines	6°	.5%	4-4-2	4-4-2—10,000 to 15,000 2-6-2—25,000	75,000 50,000
Santa Fe—Gulf Lines	6°	1% to 1¼%	4-6-2 2-8-0	60,000	75,000 to 80,000
Santa Fe—East Lines	6°, 7°-30.′	.8%	4-4-2 0-6-0	18,600	60,000 to 70,000
C. & S. Narrow Gauge	35°	4%	2-6-0	40,000	
P.R.R.	10′ to 6°	.606%	4-4-2 2-8-0	Pass. 75,000 Frt—35,000	75,000 35,000
P.R.R. West Penn.Dv.		1% to 1.85%	4-6-2 0-6-0		
Vandalia	3	.9%	All types same	40,000	70,000 to 80,000
B. & L.E.	4° to 22°	.17% to 1.1%	2-8-0	* 28,000	28,000
H.V.			All types same	30,000 to 35,000	60,000
D. & H.	2° to 14°	1.75%	2-8-0 Mallett	40,000	40,000
L S.& M.S.-Yd.Engines	10, 12°, 17°, 20	Light	0-6-0 0-10-0	50,000 to 20,000 Average—15,000	32,000 to 60,000
W.P.T.	5°, 11°, 25°	1% to 1.45%	Mallett	*	
I. C.	Main Line—6° Yard—32° to 50°	1¼%	0-6-0	Pass.—90,000 Freight—60,000 Switch—25,000	120,000 80,000 250,000
A.B. & A.	6°	1%	4-6-0 0-6-0	14,000 to 15,000	40,000 to 45,000
T.RR. Ass'n of St. Louis			Switch	4,000 to 55,000	50,000

*Tread wear mileage is obtained between shopping by shifting tires from one pair of wheels to another thus providing new flanges at the point of severest wear.

†Tread wear mileage has been obtained between shoppings since the application of lubricators.

Two railroads report very little flange wear. Five railroads report flange lubricators in use; no other data. Eight railroads report no flange lubricators in use; no other data.

TABLE III.—LOSS OF TIRE MILEAGE DUE TO EXCESSIVE FLANGE WEAR.

4-4-2 Type, operating on Missouri Division, A. T. & S.F. Ry.:

Mileage between turnings—Flange wear (⅞″ to 1″ vertical)	18,600
Mileage between turnings—Tread wear (5/16″ maximum)	60,400
Flange Worn: Metal removed to build up standard flange	⅜″
Flange Worn: Tread wear (rate 5/16″ per 60,400 mi.)	3/32″
Total reduction in radial thickness between turnings	15/32″
Tread Worn: Metal removed (To facilitate turning)	⅛″
Tread Worn: Tread wear	5/16″
Total reduction in radial thickness between turnings	7/16″

Flange Worn Tires

Thickness of Tire	Average Mileage
New, 3½″	
After first turning, 3½″	18,600
After second turning, 2 9/16″	18,600
After third turning, 2 3/32″	18,600
Scrap	18,600
Estimated Total	74,400

Tread Worn Tires

Thickness of Tire	Average Mileage
New, 3½″	
After first turning, 3 1/16″	60,400
After second turning, 2⅝″	60,400
After third turning, 2 3/16″	60,400
Scrap	60,400
Estimated total	241,600

Total loss of mileage during life of tires 167,200

Loss per cent- "-69-"

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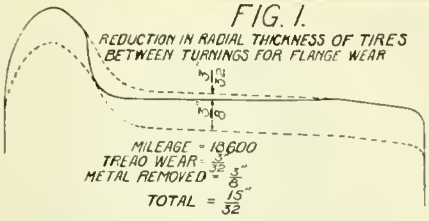
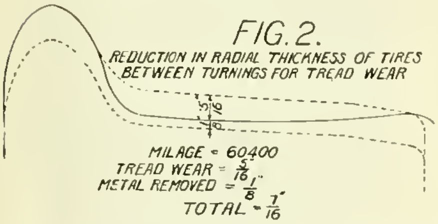
FIG. 1.



REDUCTION IN RADIAL THICKNESS OF TIRES BETWEEN TURNINGS FOR FLANGE WEAR

FIG. 2.



REDUCTION IN RADIAL THICKNESS OF TIRES BETWEEN TURNINGS FOR TREAD WEAR

That this estimate may be conservative, a very liberal curve has been assumed at the throat of the worn flange. In order to reproduce the standard tire contour it is necessary to turn off ⅜-in. of metal from the tread. The total reduction in radial thickness between tire turnings is 15-32-in., which is 1-32-in. greater than the total shown in fig. 2. Assuming a minimum thickness at the last turning of 2 inches, the difference in total mileage during the life of tires under the two sets of conditions is 167,200, a loss in tire service of 69 per cent. due to flange wear.

TABLE VI-A.

Estimated saving by use of driver flange lubricators on forward drivers of mountain engines, Southern Pacific:

Total mileage of 10 selected engines before application of flange lubricators; from Jan. 1, 1906, to date of application	629,703
Total cost of tire attention, from Jan. 1, 1906, to date of application of flange lubricators	$6,108.00
Cost of tire attention per mile run, before application of flange lubricators	$.0097
Number of times tires were changed from Jan. 1, 1906, to date of application of lubricators, including tire turning	71
Average mileage per change of tire, before application of lubricators	8,869
Total actual mileage of 10 selected engines since application of flange lubricators	421,513
Average mileage per change of tire since application of flange lubricators	42,151
Cost of tire attention per mile run after application of flange lubricators	$.002041
Per cent. of increase in mileage per change of tire	375
Per cent. of decrease in cost of tire attention per mile run	79

SIXTY CONSOLIDATION ENGINES.

	Before application.	After application.
Average mileage per engine per month	2491	2635
Total mileage per year	2,062,548	2,181,780
Cost per mile run	$.0097	$.002041
Total cost of tire attention one year's service	$20,006.72	$4,453.01

The loss of revenue and the expense of turning and changing tires when locomotives are taken out of service because of worn flanges is shown by table IV. The experience of several different railroads is given and the data presented are as complete as it has been possible to obtain. In some instances, where flange wear is excessive, when the front pair of tires becomes badly flange worn, it is removed and exchanged with another pair from the same locomotive. On locomotives with four pairs of drivers, two shifts may be made. But under severe conditions, it is impossible by this means alone to keep locomotives in service until the tires become tread worn. In table VI.-A, showing the estimated saving due to the use of flange lubricators on the Southern Pacific, the average mileage per change of tires necessitated by flange wear is given as 8,869. The practice was to make two shifts of tires before turning. Computed on this basis, the mileage between successive turnings for flange wear is only 26,607, while tread-wear mileage obtained since the application of lubricators is 42,151.

Since the increasing prevalence of flange wear has been forcing it to the attention of motive-power officials, many methods of lubrication have been applied in the effort to overcome this evil. Fourteen different forms of lubricators are now in use or have been tried by the railroads reporting to the committee. These may be grouped according to the kind of lubricant used into the following classes: (1) crude oil; (2) engine and car oil; (3) solid lubricant; (4) water; (5) exhaust steam.

There are four types of lubricators designed to use asphaltum base crude oil. These are the Chicago, the Southern Pacific, the Canadian Pacific and the Rock Island. Where no other name is known that of the railroad upon which the lubricator has been developed is used.

TABLE IV.—LOSS OF REVENUE AND COST OF LABOR DUE TO FLANGE WEAR

Railroad	Time Out of Service when Shopped for Sharp Flanges	Loss of Revenue		Labor Charges			
		Per Day	Per Shopping	To Change Tires.		To Turn Tires‡	
C.R.I. & P	2 days	$20.00	$40.00	4-6-2. 2-8-0.	$15.00 20.00	4-6-2. 2-8-0.	$7.00 8.00
C.P.R.—Lines West				*	8.00	2-8-0.	3.00
E.P. & S.W						2-8-0. 4-6-2.	4.20 3.15
S.P.—Salt Lake Div.	**			2-8-0.	15.00	2-8-0.	4.00
Santa Fe—Coast Lines.				4-6-2.	2.97	2-10-2	2.25
Santa Fe—S.West Lines	48 hours	$50.00	$100.00	4-4-2. 2-6-2.	5.00 7.50	4-4-2. 2-6-2.	3.60 54.00
Santa Fe—Gulf Lines.	4 days			4-6-2. 2-8-0.	50.00 50.00	4-6-2. 2-8-0.	350.00 400.00
Santa Fe—East Lines.	5 hours	$10.00 to $25.00		4-4-2.	3.00		
P.R.R.	18 to 20 hours.	$39.00	About $30.00	4-6-2. 4-8-0.	30.92 20.86	4-6-2. 3-8-0.	33.77 21.64
P.R.R.—W. Penn. Div.	24 hours up	$2.50 per hour	$60.00 up	2-6-2. 2-8-0.	28.05 26.66		
Vandalia	2 or 3 days.			4-6-2. 2-8-0.	6.30-19.80 8.40†	4-6-2. 3-8-0.	6.40 6.72
B. & L.E.	To turn—60 hrs To change—12 hrs.	$25.00	$62.00 $12.00	4-6-0. 2-8-0.	13.32 18.00 to 20.00	4-6-0. 2-8-0.	4.10 5.20
H.V.	6 days		$66.00				
D. & H	24 hours	Varies.		4-6-2. 2-8-0.		4-6-2. 2-8-0.	$2.10 to $2.70 2.80 to 3.60
L.S. & M.S	Shop—10 hrs R. House—2 d's	Capital charges only.		-006-.	6.00	0-6-0.	12.00
W.P.T	10 days	$11.00	$110.00	Mallett	90.00	Mallet	90.00
I.C.	24 hours	$10.00 to $15.00	$10.00 to $15.00	0-6-0. 2-8-0. 4-6-2.	15.50 24.00 30.00	2-8-0. 4-6-2.	2.92 2.88
A.B. & A.	5 or 6 days	‡$82.00	$4.40 to $4.92.	4-6-0. 0-6-0.	11.40 13.68		10.00
T.R.R. Ass'n of St. Louis	2 or 3 days			0-6-0	13.80	0-6-0.	4.80

*Two pairs of tires exchanged. † $19.80 for 4-6-2 type with retaining rings. ‡ Based on gross earning capacity.

** No engines shopped because of sharp flanges.

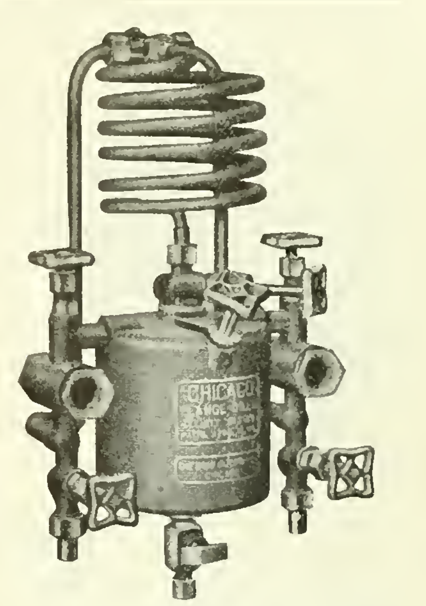


Fig. 3. Hydrostatic Flange Oiler.

The Chicago flange oiler is designed to meet the requirements of the Elliott system of lubrication, which embodies a sight-feed oiler located on the back boiler head and a delivery pipe on each side of the engine leading to the flange nozzles. The oiler is similar in general appearance and principle of operation to the sight-feed valve-chamber lubricators in general use in America and is illustrated in figs. 3 and 4. The manufacturers recommend that the nozzles be located 15 ins. above the rail, 2 ins. from the flange toward the outside of the tire and close in toward the tread. (See fig. 5.) Where two pairs of nozzles are used, each delivery pipe is branched through a T pipe connection. Where more than two pairs are used either two two-feed oilers or one four-feed oiler should be provided. The manufacturer's practice is to apply one pair of nozzles in front of forward driving wheels on road engines; one pair in front of forward drivers and one pair back of rear drivers on switch engines; on Mallet engines in road service, one pair in front of forward drivers on both engines, and in pusher service one pair in front of forward drivers of both engines and a third pair back of rear drivers on high-pressure engine.

The Wabash Pittsburg Terminal Ry. applies nozzles to all drivers on standard type; to front and main drivers on ten-wheel type; to front and back drivers on consolidation type; to main and back drivers on six-wheel switch engines; and to front and back drivers of both engines on the Mallet type. A few consolidation engine trucks are also equipped.

The Lake Shore and Michigan Southern Ry. applies lubricator nozzles to all drivers on switch engines. The practice adopted by the Santa Fe is to apply nozzles to the rear of forward drivers where trouble is experienced from frozen sand pipes with nozzles placed in front of the drivers.

The lubricator illustrated in fig. 6 has been developed by the Southern Pacific Co. after experiments covering the use of a number of other methods of delivering oil to the flanges. This device consists of a steam-jacketed receptacle holding about 1½ pints of crude oil, which is fed by gravity through a needle valve into the ½ in. delivery pipe. A clamp bracket gripping the pipe just below the oil cup secures the oiler to the engine frame in front of the forward drivers. Loosely sliding upon the delivery pipe is a piece of one-inch pipe over the lower end of which is slipped a short section of one-inch rubber hose. The projecting end of the hose is shaped to fit the throat of the flange and acts as a shoe to distribute the oil. A weight rigidly attached to the upper end of the one-inch pipe holds the shoe against the flange at all times. The oil-cup jacket is supplied

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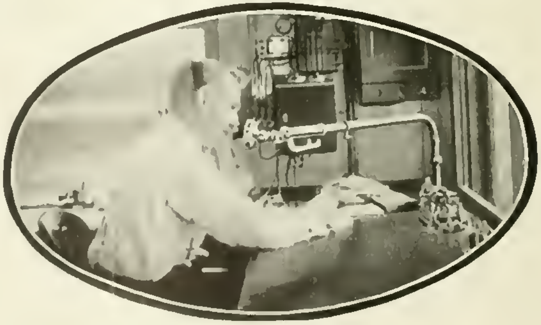

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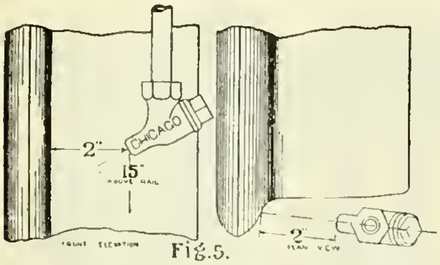

Fig. 5.

Hydrostatic Oiler. Application of Flange Nozzles.

with steam from the air-pump exhaust pipe, which serves to keep the oil in a fluid state during cold weather. The drip from the jacket runs along the delivery tube tending to prevent congealing of the oil before reaching the flange.

The Canadian Pacific Ry. having tried hard grease and engine oil without success is about to try crude oil in the lubricator shown in fig. 7. This is similar to the Southern Pacific type in principle. Oil is fed through a regulating valve from the cup to the feed pipe and flange shoe, which consists of a piece of rubber hose. Steam from the air-pump exhaust pipe passing through a coil placed within the oil cup maintains the oil in a fluid state.

The Chicago, Rock Island & Pacific Ry. is using a lubricator shown in fig. 8 on two Pacific type locomotives. The oil receptacle stands upon the running board over the right cylinder. Exhaust steam passes through a pipe leading from the exhaust cavity in the cylinder casting to the oil cup. The accumulation of condensation in the oil cup lifts the lubricant into the delivery pipe, exhaust steam carrying it to the flange. The flow of oil is controlled by the engineer through a globe valve operated by a rod extending back to the cab. A check valve placed in the pipe leading from the cylinder exhaust cavity prevents a back flow of oil through this pipe.

There are two lubricators in use employing lubricant in solid forms: the Collins and the Turnbull. The Collins is illustrated in figs. 9, 10 and 11. A bracket attached to the frame supports the lubricator in position before the driver. The angle of the lubricator is adjustable to suit conditions imposed by the location of the bracket, on which it is laterally adjustable. The angle should be as nearly as possible twenty-five degrees from a line parallel to the axle and it should be placed on the horizontal centre line of the wheel. The location recommended by the manufacturers is shown in fig. 9. The lubricator itself is a tube of rectangular cross-section through which slides the lubricator block of hard grease. Below this tube is a spring-feeding device designed to keep the lubricator block pressed against the flange. Pressure from a coil spring acts through a dog engaged in one of a series of notches on the under side of the lubricator block. As the lubricant becomes worn, the spring is recompressed by means of a downward projecting trigger D, shown in fig. 10. At the same time the dog is moved back into engagement with the next notch in the lubricator block. This periodical readjustment is the only attention required to operate the lubricator.

The Turnbull lubricator embodies the same principle, spring pressure holding a cake of hard grease against the flange. The committee is informed by the manufacturer that this device is no longer marketed and a more detailed description will, therefore, be unnecessary.

Great economy in the use of lubricant is claimed for hard-grease lubricators. When the flange has become once coated there is no further deposit of lubricant until this coating is removed by contact with the rail.

The feed is automatically regulated to suit the varying needs of the flanges. On the Colorado & Southern Ry., however, it has been found that the grease used in the Turnbull lubricator absolutely loses its merit in either wet or cold weather and its use has been abandoned. On the Canadian Pacific western lines, hard-grease lubrication has been found unsatisfactory. The committee is unable to state what type of lubricator was used.

Several methods of delivering engine and car oil to the flange have been tried. The simplest is a piece of pipe or hose secured to the frame in front of the driver in such a manner as to cause the lower end to bear against the flange. The pipe or hose is filled with oil-saturated waste, which acts as a swab more oil being supplied from time to time. This type is sometimes varied by providing a graduated feed-oil cup to supply oil to the swab. Although this simple device has proved beneficial, it has usually been abandoned for some more efficient method of lubrication. Where the waste comes in contact with the tire, if packed hard, it will glaze and cease to be effective. If loosely packed, it will be drawn out and lost.

Crude oil is being used in this manner on the Illinois Central Ry. A piece of 2-in. tube is flattened at one end and shaped to the contour of the flange. It is clamped to a hinge bracket so that the weight of the pipe itself tends to keep it in contact with the flange. The tube is packed with waste saturated with fuel oil. The shape of the opening at the flange is such that the waste will not be in contact with the tire. This device is being used to a limited extent on Pacific type engines with very little apparent benefit. It is not reliable in cold weather.

The Canadian Pacific has experimented with a siphon lubricator using engine oil, but this has proved inefficient and has been abandoned for the fuel-oil lubricator shown in fig. 7.

Another simple device has been applied to six-wheel switch engines in the Chicago yard of the Santa Fe. This is shown in detail in fig. 12 and applied to engines in fig. 13. It is simply a block of wood resting up the tire and grooved to fit the flange. A waste-filled cavity contains engine oil which feeds through a ⅜-in. hole to the flange. The block is loosely anchored, as shown in fig 13, and is usually applied to forward and back drivers.

The Chicago, Rock Island & Pacific Ry. has 10 Pacific and three consolidation locomotives arranged with piping to carry water from the tank to nozzles spraying against the leading drivers. This means of lubrication is of very limited service. The pipes run horizontally along the engine frames and cause trouble by freezing during winter weather.

The Pennsylvania Rd. has made use of exhaust steam from the air pump in the manner shown in fig. 14, with what success we are not informed.

Of the lubricators described, all are in very limited use except those using crude oil. Table V. shows the extent of application of each lubricator named. It will be noted that every railroad is using crude oil—some exclusively.

TABLE V.—SHOWING TYPES OF LUBRICATORS AND EXTENT OF APPLICATION.

Types	Roads Specifying in Use.	Remarks
All types	21	
All types using crude oil	21	
Chicago	18	
Southern Pacific	2	
Rock Island	1	
Canadian Pacific	1	
Waste filled iron pipe — Crude oil	1	Not extensively.
Swab—Engine or car oil	3	Two have abandoned this type.
Siphon—Engine or car oil	1	Has been abandoned
Wood Block—Engine oil	1	
Turnbull	3	Two have abandoned this type.
Collins	2	
Hard grease (‡)	1	Has been abandoned
Exhaust steam—air pump	1	
Water from tank	1	
Water from injector delivery	1	Has been abandoned

‡ Type not specified.

Flange lubrication on the Santa Fe has been developed to its present state after experiments covering the use of most of the simple devices, such as swabs of oil-saturated waste, water jets operated from the injectors and the block type shown in figs. 12 and 13. These have all proved to be in some manner unsatisfactory. In using the simple swab difficulty was found to keep it against the flange and the waste was frequently lost. When forced against the wheel with sufficient pressure to insure constant contact the pipe was rapidly worn away, sufficient heat often being generated to ignite the waste. The water jet caused clogging of the sand pipes. Water and engine oil have both proved too light to satisfactorily resist

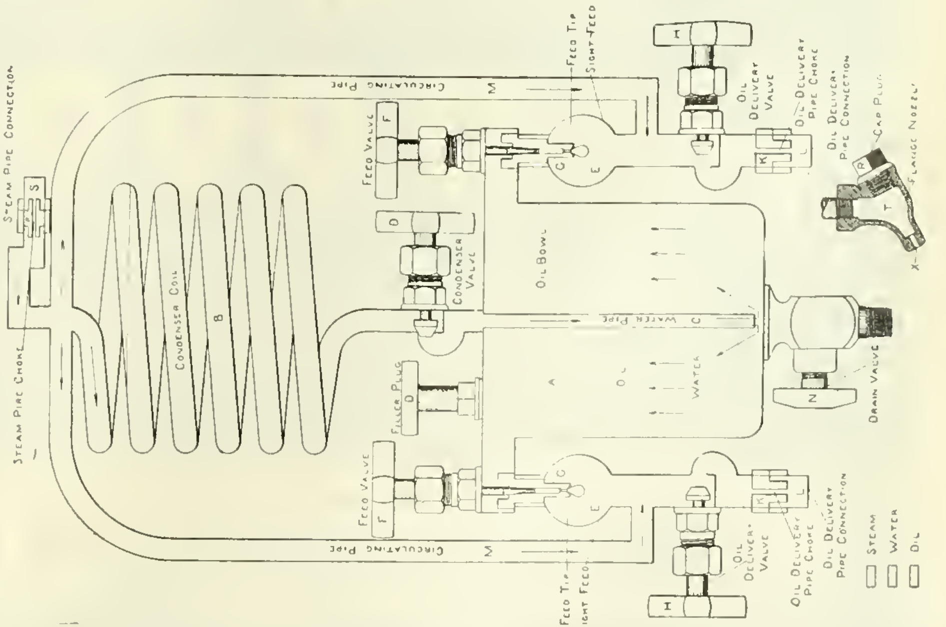

Fig. 4. Hydrostatic Flange Oiler, Diagrammatic View.

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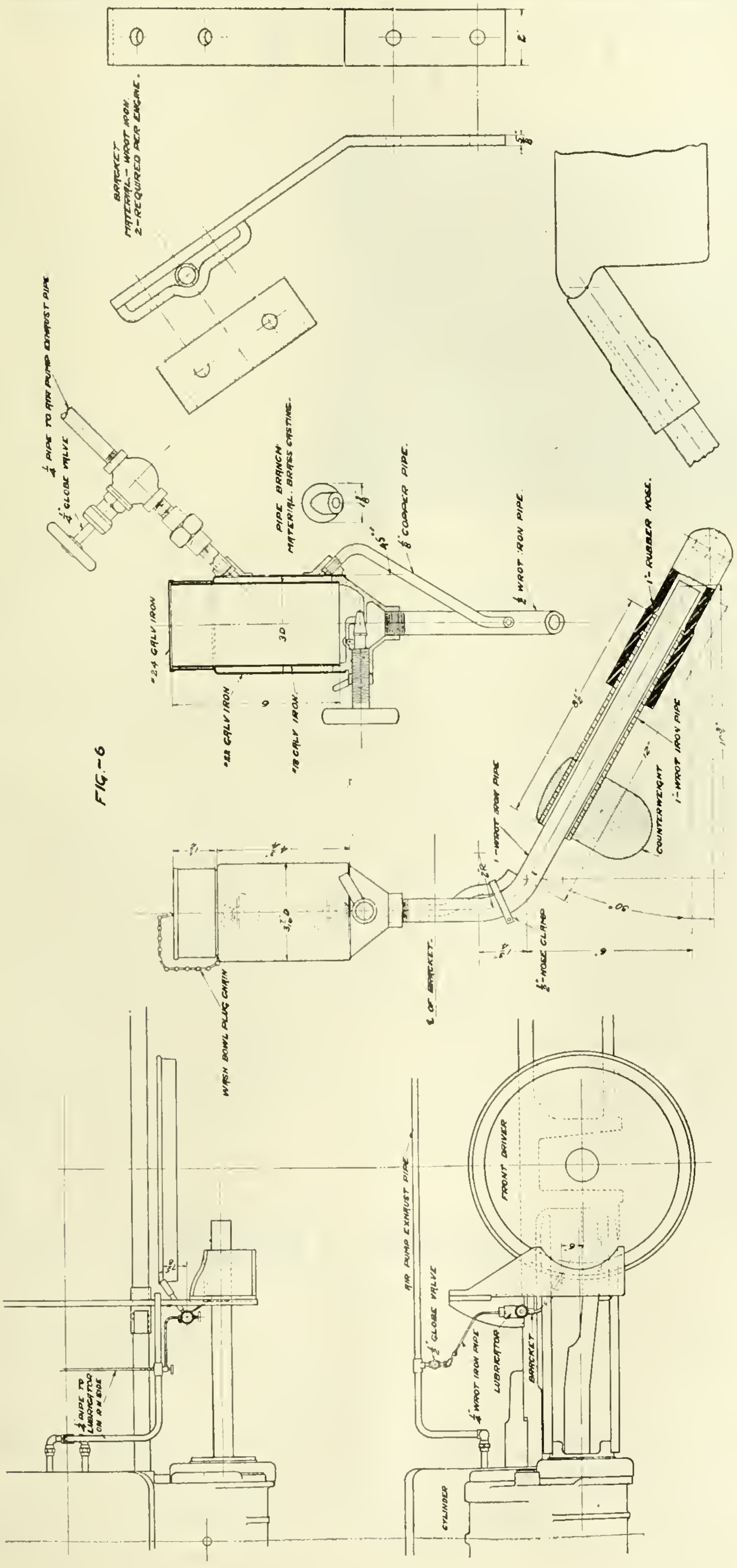
BRACKET
MATERIAL- WROT IRON.
2-REQUIRED PER ENGINE.
1/4 PIPE TO AIR PUMP EXHAUST PIPE
1/4 GLOBE VALVE
PIPE BRANCH
MATERIAL BRASS CASTING.
1/8 COPPER PIPE
1/4 WROT IRON PIPE
1" RUBBER HOSE.
#24 GALV IRON
#22 GALV IRON
#18 GALV IRON
FIG.-6
WASH BOWL PLUG CHAIN
1-WROT IRON PIPE
COUNTERWEIGHT
1-WROT IRON PIPE
℄ OF BRACKET.
1 1/2-HOSE CLAMP
AIR PUMP EXHAUST PIPE
1/4 GLOBE VALVE
1/4 WROT IRON PIPE
LUBRICATOR
BRACKET
FRONT DRIVER
CYLINDER
1/4 PIPE TO LUBRICATOR ON R.H. SIDE

Fig. 6. Flange Oiler, Southern Pacific Co.

the action of centrifugal force, being thrown away from the throat of the flange before reaching the rail. It has been found that the wood block lubricator spreads oil over the tire tread and, consequently, tends to cause slipping of the drivers.

Crude oil is now in general use for flange lubrication on the Santa Fe. Oil from the Kansas field has not been found heavy enough to properly adhere to the flange, but that from Bakersfield, California, which is now used, has proved very satisfactory.

Experience indicates that the delivery of a proper lubricant to the flange will reduce the wear of both flange and rail. The committee's information is confined largely to the results obtained by lubrication with crude oil. California crude oil contains a high percentage of petroleum asphalt. When delivered to the rail by the driving-wheel flange, it forms a thin coating of paste on the inside of the ball of the rail which does not run or spread over the top. When all engines on a division are equipped with lubricators the rails on the outside of curves will become thus coated, and friction will be reduced on all wheels passing over the track. The resulting reduction in flange wear is noticeable on both passenger and freight car wheels, but data are available for locomotive driving wheels and tender truck wheels only. It necessarily follows that train resistance is much reduced on curves.

Reference has already been made to the losses due to flange wear in tables III. and IV. The record of Atlantic type locomotives referred to in table III. is a good illustration of the service of flange lubrication. These locomotives operating on the Santa Fe Ry. averaged four months with a mileage of 18,600 between tire turning due to worn flanges. The division to which they were assigned includes a large amount of curved track and to increase the mileage between tire-turning flange lubricators were applied. Since their adoption, tires on the same locomotives remain in service about 13 months, when it becomes necessary to turn them because of tread wear. During this period, the engines will average a total service of 60,400 miles. It must be added, however, that at about the time lubricators were applied, a grade revision commenced and the curvature has since been reduced on the division over which these engines were operated. But this was not completed soon enough to have any marked effect in the saving which was immediately apparent after applying lubrication.

The block lubricator previously described (figs. 12 and 13) applied to six-wheel switch engines has extended the period between turning for flange wear in some cases from two months to one year.

On the New Mexico Division, a 65-mile section, of which has 288 curves of 6, 8 and 10 degrees, it was found impossible to keep engines of the Santa Fe type in service for more than 18,000 to 20,000 miles. After one of these locomotives had made this mileage flanges were so badly worn that it was necessary to remove all wheels and turn the tires or shift them from one pair of wheels to another. At the present time with lubricators applied they are making as high as 35,000 to 40,000 miles between shoppings, with no evidence of flange cutting. On Pacific type locomotives operating through the same territory the difference is even greater. The mileage formerly obtained was about 25,000 to 30,000, which has been increased to 75,000 to 100,000 miles, with flanges still in good condition. The performance of lubricators has been closely watched in this territory. There are instances where lubrication has not entirely stopped flange wear because of the difficulty experienced in getting en-

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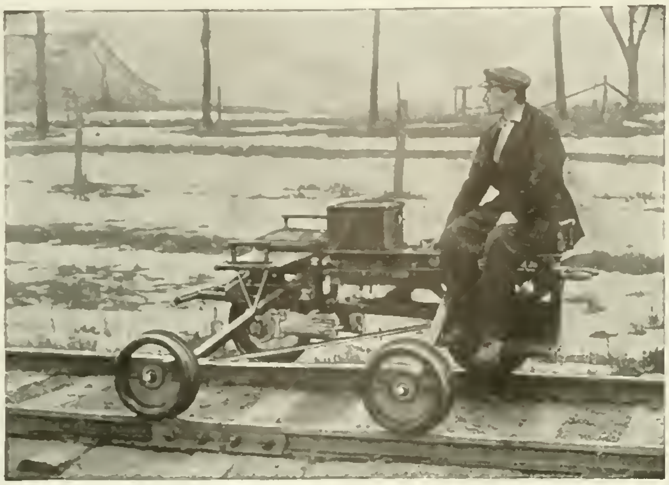

No. 28 Fairbanks Morse Gasoline Motor Car

SPECIFICATIONS

Gauge	Any gauge 24 inches and over.
Wheel Base	3 feet 10 inches.
Length of Car over all	7 feet 0 inches.
Width, without Guide Arms,	26 inches.
Wheels	17 inch wood centre and 14 inch wood centre guide wheels.
Axles	Rear Axle 1⅛ inches. Front Axle 1½ inches.
Axle Boxes	Rear Boxes are malleable iron with oil cellar. Front Boxes are full brasses and oiled by engine lubricating system, as well as grease cups for emergency use.
Frame	All pressed steel and steel guide arms.
Power	Two cylinder, 3¼ x 4 inches, two cycle air cooled engine, one cylinder direct connected to front axle on each side. Cranks entirely enclosed. Engine develops about 4 H.P.
Lubrication	Engine is entirely lubricated by oil mixed with the gasoline and reaches the engine with the gasoline, passing through the carburetor.
Control	Spark and Throttle are controlled by levers on the seat and the throttle lever also operates a switch and cylinder relief cocks.
Brake	On front and rear wheels. Can be operated from either front or rear seat.
Seating Capacity	Three persons.
Tank	Gasoline tank holds about 2¼ gallons, which operates the car about 80 miles.
Speed	Runs either way up to 30 miles per hour.
Weight	About 400 lbs.

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Track Tools, Car Movers, Wheelbarrows
Trucks of Every Description
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The Wells Oil Light
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TABLE VII. RECORD OF WEAR OF FLANGES IN CONNECTION WITH TEST OF CHICAGO FLANGE OILERS.

N. & W. RY.

Engine	In Service From	In Service To	Mileage	Wear of Flanges. Max.	Wear of Flanges. Min.	Wear of Flanges. Average	Average Wear per 10,000 Miles
Equipped with Flange Oilers—Engines							
1004	6-29-09	11-11-10	49,256	R-1 .36″	L-1 .04″	.170″	.034
1005	7-17-09	8-29-10	43,634	L-1 .27″	R-1 .07″	.156″	.036″
1006	8-6-0-9	8-22-10	38,938	L-1 .22″	R-1 .02″	.126″	.032″
Average of engines						.155″	.034″
Not Equipped with Flange Oilers—Engines.							
1000	8-4-09	8-12-10	36,725	R-4 .30″	L-3 .00″	.148″	.040″
1007	7-23-09	8-11-10	40,251	R-1 .27″	L-3 .03″	.143″	.035″
1009	9-15-09	8-18-10	35,628	L-4 .11″	R,3 .02″	.066″	.018″
Average of engines						.151″	.031″
Tank Steel Wheels Behind Engines with Oilers.							
1004				R-1 .51″	L-2 .02″	.2207″	.042″
1005				L-3 .42″	R-3 .03″	.17″	.039″
Average of both						.196″	.041″
Tank Steel Wheels Behind Engines without Oilers.							
1000				R-3 .31″	R-4 .00″	.10″	.054″
1009				L-3 .17″	R-4 .00″	.20″	.028″
Average of both						.150″	.041″

OIL

Engine	Used Gal.	Price, Gal.	Cost per 10,000 Miles
1004	42	$0.25	$2.15
1005	40	.25	2.29
1006	48	.25	3.08

gineers to give the lubricators proper attention.

There are no data on the Santa Fe to show the exact increase in the life of rails on curves effected by the flange oilers. On the New Mexico Division, with 100% of the locomotives equipped, it has been estimated that there has been an increase of about two months in the life of rails, that previously required changing about every 13 months. This is an increased life of 15%. In territories where no figures are available, it is, however, the opinion of all officials that the flange oilers have materially decreased rail wear.

The Southern Pacific has gathered data showing the saving in tire attention effected on consolidation locomotives in mountain service, which is presented in table VI-B. The average mileage per change of tires has been increased from 8,869 to 42,151, the cost of tire attention being thereby decreased 79%. The miles per change of tender-truck wheels has been decreased in still greater proportion. From 3,517 before the adoption of lubrication it has been extended to 18,837, with a decrease in cost of tire attention of 81.45%. Fig. 15 shows how completely flange wear has been overcome. Referring to the diagrams there presented, dotted lines show standard M.C.B. tire contour and full lines show contour of worn tire. In exhibits 2 and 4 is shown the metal which must be removed to bring tires back to the standard. In no case is it necessary to remove extra metal from the tread in order to build up the flange.

The effect on wear of rails on curves has been no less marked. Where rails on 8 and 10° curves would last only about eight or 10 months, conservative figures place the life since general application of flange oilers at about three years. In figs. 16 and 17 is graphically presented the reduction in rail wear effected on two 8° and two 10° curves.

It is a fact that any device not directly necessary to the operation of the locomotive must perform its function with very noticeable results before winning the approval of the engineer. Flange lubricators on the Southern Pacific have become a necessary part of the locomotive equipment in mountain territory. When not working properly engineers complain seriously until they are repaired. Locomotives ride easier and smoother around curves without the tendency to climb the rail which is evident when flanges run without lubrication.

TABLE VI-B.—TENDER TRUCK WHEELS.

Saving effected by use of driver flange lubricators on forward drivers of mountain engines, Southern Pacific:

Total mileage of 10 selected engines before application of flange lubricators, from Jan. 1, 1909, to date of application	629,703
Number of pairs of tender truck wheels changed from Jan. 1, 1909, to date of application of flange lubricators.	148
Mileage per change of tender truck wheels	3,517
Estimated cost to change one pair of tender truck wheels	$15.55
Cost of tender truck wheel tire attention per mile run	.00442
Number of pairs of tender truck wheels changed from date of application of flange lubricators to Dec. 31, 1908.	9
Total mileage of engines from date of application of flange lubricators to Dec. 31, 1908	169,529
Miles run per change of tender truck wheels	18,837
Per cent. of increase in mileage per change of tender truck wheels	435.59
Cost of tender truck wheel tire attention per mile run	.00082
Per cent. of decrease in cost of tire attention	81.45

SIXTY CONSOLIDATION ENGINES.

	Before application.	After application.
Average mileage per month per engine	2,491	2,559
Estimated total mileage per year	2,062,548	2,118,852
Cost per mile run	$.0042	$.00082
Estimated total cost of tire attention one year service	$9,116.46	$1,737.46

On the Wabash Pittsburg Terminal Ry. before the application of lubricators the average time between shopping for sharp flanges was eight months. A 10-wheel freight engine, working on a section having maximum curvature of 11° 28 minutes, would not run three months before developing flange wear to such an extent that tires had to be turned. Since applying the lubricator this engine working on the same section of the road was out 20 months before shopping, when tires were turned for tread wear. Since the application to all locomotives there has been no occasion to turn tires for flange wear. It has stopped almost entirely on wheels to which the oil is delivered, and oiling the drivers materially decreases the wear on engine-truck wheel flanges. In some cases, oil has been applied to the trucks where wear was unusually excessive. Mallet locomotives showed some signs of cutting the front flanges on the low pressure engine. By plugging the nozzles leading to the back drivers on this engine and delivering the same amount of oil that was previously used on both pairs to the front wheels, the cutting has been reduced and it has been found that the other wheels are sufficiently oiled. In addition to the direct benefit to the locomotive, there has been a decrease in the wear of switch points and rails on curves, as well as a decrease in the number of derailments. Flange wear has also been reduced on tender truck wheels.

The Atlanta, Birmingham and Atlantic Ry. has got as high as 50,000 miles out of locomotives that ran only 13,000 to 15,000 miles before lubrication was adopted. The average length of service for switch engines without lubricators was three or four months at 12 hours a day. Fig. 18 shows the conditions of flanges on a switch engine that ran 14 months, three months of this time at 24 hours per day, after applying the lubricator. At the time the record was taken this engine was still in ser-

TABLE VIII.—EFFECT OF FLANGE LUBRICATION.

Railroad	Flange Wear Stopped	Tires Run Till Tread Wears	Miles or Time in Service: Before Lubrication	Miles or Time in Service: After Lubrication	No. Engines Equipped
C. R. I. & P.	Much reduced.	Yes	One 2-6-0 3 or 4 months	Pass. Engine. 12 months	24
B. & L. E.	Much reduced	Yes	14260	23514	2
S. P.—Sacramento Div.	Yes	Yes	See Table V.		....
S. P.—Salt Lake Div.	Much reduced.	*			49
A. B. & A.	Yes	Yes	Road—13,000 to 15,000 Switch—3 to 4 months	50,000 14 months	25
C. & S.—Narrow Gauge	Yes	Yes	6 months	General repairs, 12 months	4
W. P. T.	Yes	Yes	3 months	General repairs, 20 months	24
L. S. & M. S.—Yard Engines	Yes	Yes	Some Instances. 6 weeks	6 months	15
H. V.	Yes	Yes	0-6-0 type. 8,000	34,000	2
D. & H.	Yes	Yes	† 4 months	8 months	20
Santa Fe—Coast Lines	Yes	Yes	½ Tread wear life	Full life	240
Santa Fe—N. Mex. Div.	Yes	Yes	Pass.—25,000 to 30,000 Fr't.—18,000 to 20,000	75.000 to 100,000 35,000 to 40,000	
Sacta Fe—East. Lines	Yes	Yes	4-4-2 type. 18,600	60,400	120
Santa Fe—Gulf Lines	Reduced	No	60,000	75,000 to 80,000	30
Santa Fe—So. West. Lines.	Reduced	Not always	10,000 to 25,000	50.000 to 75,000. Same cases 100,000	....
T. R. R. Ass'n of St. Louis	Reduced	No	About 6 months	About 8 months	2
M. Ry. of St. Louis	Reduced	Application too recent to determine.			4
E. P. & S. W.	Reduced	Application too recent to determine.			40
P. R. R.—West Penn. Div.	No	No			13
N. & W.	No	See Table VI. and Figure 19.			4
I. C.	No	Experience limited.			Few
C. P. R.	Hard grease and engine oil unsuccessful.				Few

*Tires were turned for tread wear before lubricators were applied.

†Data apply to engines in pusher service. Increased life partly due to distribution of wear produced by turning the engines.

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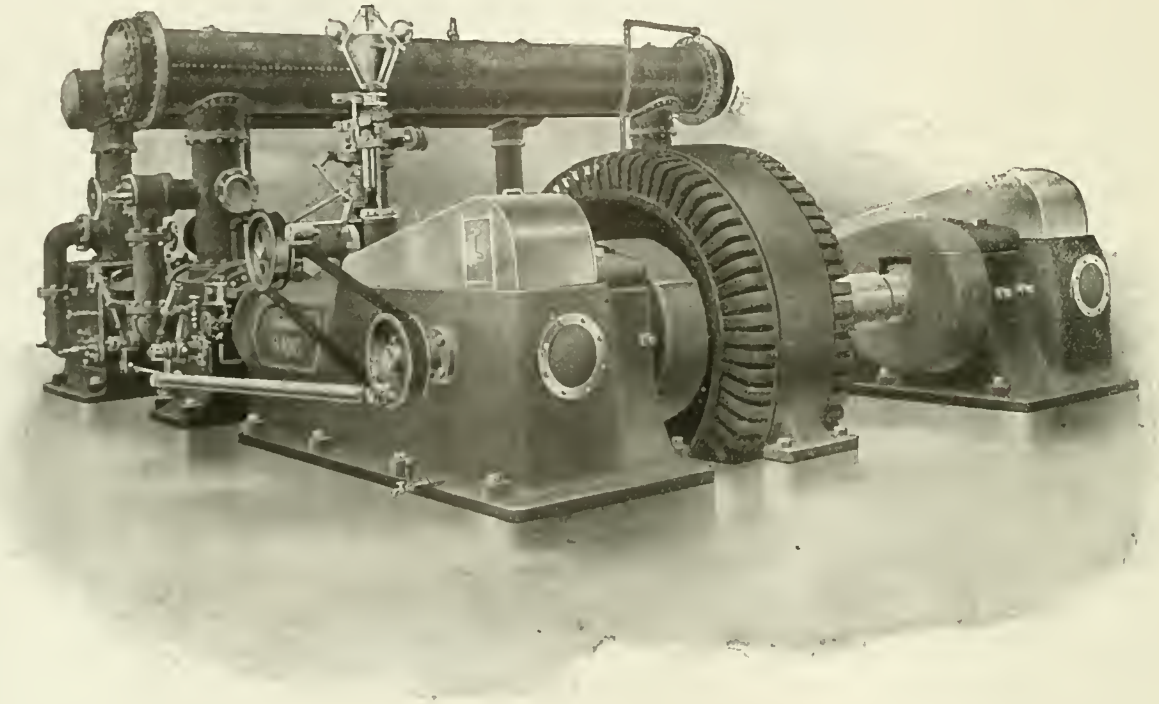

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FIG-8.

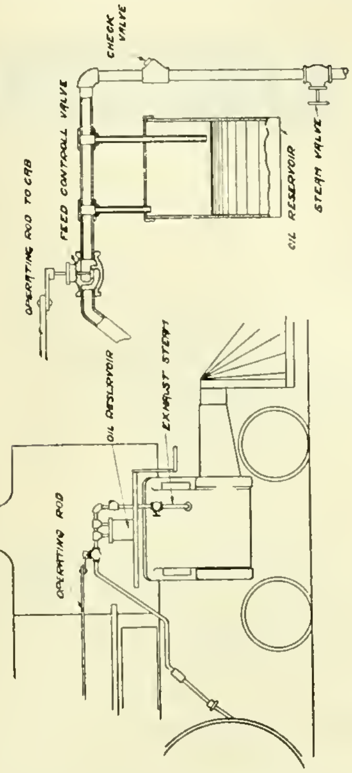

Fig. 8. Flange Oiler, C.R.I. & P. Ry.

vice. Another individual case on this road shows forcibly the effect of lubrication. A 10-wheel locomotive, weighing 130,000 lbs. on drivers, in making 18,958 miles, had cut the front flanges very badly. Owing to the rush of work it was necessary to keep the engine in service if possible. A lubricator was applied and the engine again placed in service. After making 34,495 additional miles, the flanges showed no further wear. The tires were shifted and the engine again put into service. The condition of the front tires at the time the lubricator was applied and at the time tires were shifted is shown in fig. 19. The Elliott system is in use on this railroad. The cost of oil has been about 3c. per 100 engine miles.

The Norfolk and Western equipped four consolidation locomotives with lubricators and compared them in service with three others of the same type. The data obtained are presented in table VII., which shows for each engine, the wheel having maximum wear, the wheel having minimum wear and the average for all wheels, which is reduced to wear per 10,000 miles for the purpose of comparison. The average wear per 10,000 miles averaged for the three locomotives without lubricators is slightly less than the same quantity shown for three engines with lubricators.

Fig. 20 shows the method used to measure the degree of flange wear, the contour being obtained by a recording device. The diagrams there shown on front tires from engine 1,009, with a mileage of 35,628 without flange oiler, indicate that flange wear was not excessive in the territory where these locomotives were working.

A service test of a yard engine was made on the Kansas City Terminal Ry. The yard where this engine worked is so located that the front and back flanges on the left side of the engine became worn to such an extent that the engine began to climb the rail after being in service about three months. It was then necessary to change tires. The engine equipped with a flange oiler was put in service with a new set of tires, and remained in service under these conditions over 13 months, when it was shopped for other repairs. The flanges were still in good condition. The results obtained were made possible by the careful attention the lubricator is reported to have received from the engineer.

The foregoing instances indicate the service of flange lubrication under some of the worst conditions affecting flange wear reported to the committee. Further data are presented in table VIII. Opposite the initials of the railroad reporting is indicated the benefit derived from flange lubrication.

Master Mechanics Association.

The American Railway Master Mechanics Association met at Atlantic City June 14, 15 and 16. The President, C. E. Fuller, Assist. General Manager Union Pacific Rd., in his opening address, covered a wide field, including legislation respecting safety appliances, the necessity of adopting standards of practices, the importance of publicity to inform the public of the great advances in railway mechanical work and of the fact that of all the enterprises of the country no other approaches the railways in systematic and persistent study of efficiency and economy. He urged that the association should have as part of its recommended practices, mechanical plans for large and small terminals, units embodying the best practices, so that if conditions are such that these plans in their entirety are not feasible or practical it would be possible to take therefrom the best available features under which shop layouts can be designed. Many railways do not employ large expensive engineering forces and such plans would be of infinite value to them. In referring to apprentices, he said:—"A very pertinent subject in connection with the matter of increased efficiency, to my mind, is the education of our apprentices, in fact of all our employes. By what better method can we hope to increase our efficiency than by setting a high standard for the young men we are educating, from whom we must be able to draw our foremen and shop managers? Progress has been made by some of the individual lines not only in the way of educating apprentices, but also giving other employees similar advantages by instituting plans of broad scope with educational bureaus open to all employes. It is my opinion that in line with these ef-

FIG. 7.

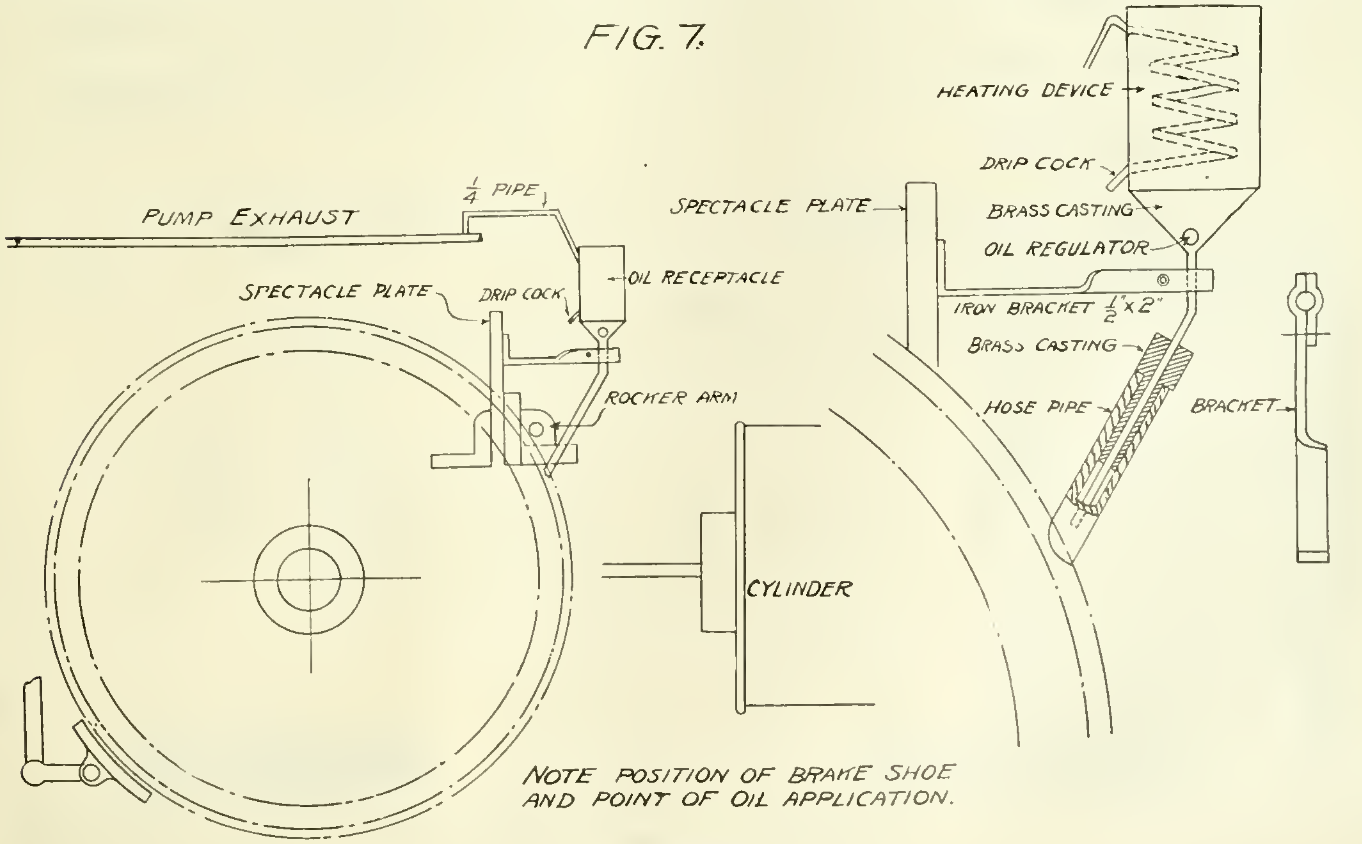

Fig. 7. Flange Oiler, Canadian Pacific Railway.

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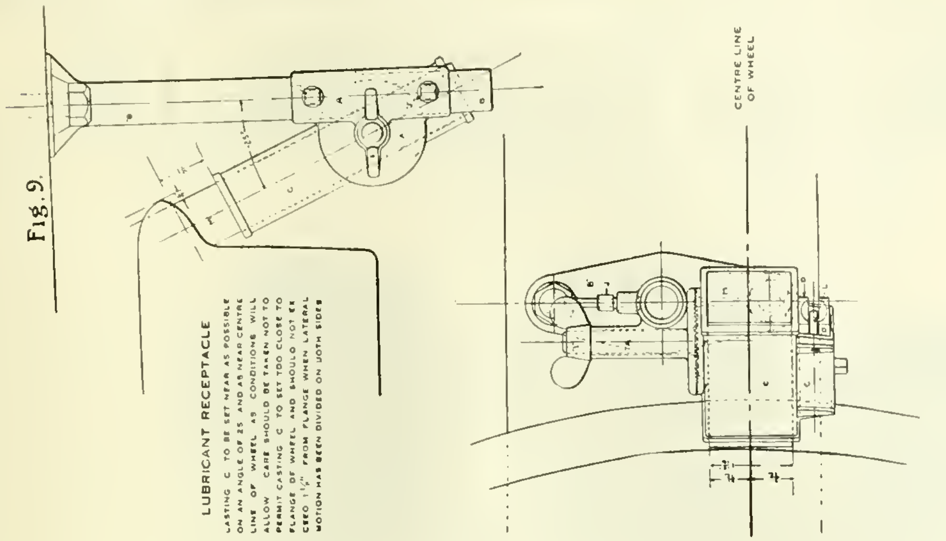
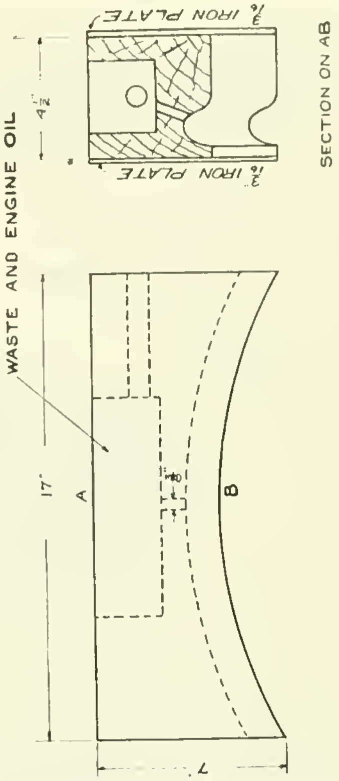
Fig. 9.


CENTRE LINE OF WHEEL
LUBRICANT RECEPTACLE
CASTING C TO BE SET NEAR AS POSSIBLE ON AN ANGLE OF 25 AND AS NEAR CENTRE LINE OF WHEEL AS CONDITIONS WILL ALLOW CARE SHOULD BE TAKEN NOT TO PERMIT CASTING C TO SET TOO CLOSE TO FLANGE OF WHEEL AND SHOULD NOT EXCEED 1 1/2" FROM FLANGE WHEN LATERAL MOTION HAS BEEN DIVIDED ON BOTH SIDES
C

Flange Lubrication, Fig. 9. Hard Grease Flange Lubricator.

Fig. 12.



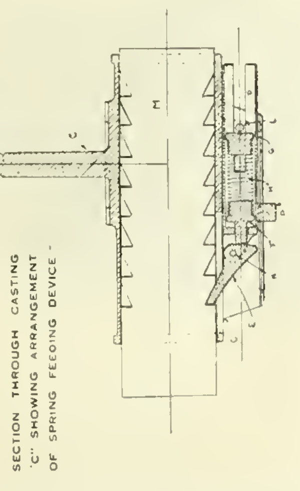
Flange Lubrication, Fig. 12. Simple Flange Lubricator, using engine oil.

forts our association should adopt a recommended apprentice system for apprentices to the various trades as well as for the technical graduates, commonly called 'special apprentices.'"

The reports of the various committees most of which are given in the earlier pages of this issue, were presented and discussed.

A number of members disagreed quite emphatically with the report of the committee on the diameter of piston rods and the size of crossheads. The title of the report required only formulae and tables giving proportions for such parts and those presented were found acceptable, but the designs for the piston rod fit in the crosshead was generally discredited. The breakage of piston rods is often due to the severe stress produced by driving in the key, and for this reason a nut fastening for the piston to the crosshead found considerable favor. But the chief objection to the design presented is the combination of end butting fit and taper fit which experience has shown is not good practice. If the rod has an end butting fit into the crosshead, the taper fit will soon become loose. There is a loss in the area of the bearing of the taper fit when the butting fit is used. It is best, therefore, to use such a taper that the rod can have a full bearing in the crosshead and to place no dependence upon the butting fit at the end of the piston rod or a shoulder fillet at the front end of the crosshead.

Fig. 10.


SECTION THROUGH CASTING 'C' SHOWING ARRANGEMENT OF SPRING FEEDING DEVICE
C
H

Flange Lubrictation. Hard Grease Flange Lubricator. Section Showing Spring Feeding Device.

DISCUSSION BY CANADIAN OFFICIALS.

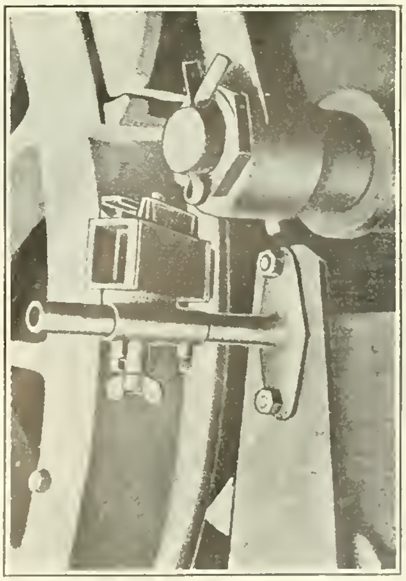
J. Christopher, Master Mechanic, Toronto, Hamilton & Buffalo Ry., asked the experience of those using mechanical stokers, as to the front end filling up, as compared with hand firing, and whether it was necessary to clean out the front end more frequently.

T. O. Secrest, C.N.O. and T. P. Ry., replied: We have been using the stoker for the past 14 months, and at first we did experience that trouble. We have had no trouble along that line lately. We have not had any occasion to inspect engines on account of the filling up or on account of coal being drawn through the tubes, and we have watched that matter pretty closely, thinking that perhaps the coal might bank up around superheated pipes.

J. Christopher, Master Mechanic, Toronto, Hamilton & Buffalo Ry., in the discussion on the best construction of locomotive frames, said:— It would appear that the question of the quality of the steel is the chief point. It occurred to me it would be a good idea for them to determine the radius of the gillets at the pedestals and consider those points, in making their recommendations, as well as the quality.

R. Patterson, Master Mechanic, G.T.R., Stratford, Ont., in the discussion on main and side rods, said:— We have had a great deal of experience in forged fluted rods for low power locomotives. We did that altogether in our Stratford shops, but since we adopted the heavy power we went back to fluting the rod by machinery. We had a great deal of trouble with fluted rods breaking, and we substituted the rectangular rod. Rods will break no matter whether rectangular or fluted if they are not kept up, but not nearly to the same extent as the fluted rod will.

J. Christopher, Master Mechanic, Toronto, Hamilton & Buffalo Ry., in the discussion on treating water without plants, said:—I have had a great deal of experience with bad water on our road. In dry seasons of the year the water analyzes as high as 70% sulphur and we have found that we were creating sulphuric acid in our boilers. I had difficulty in convincing the management of the road of the necessity of treating this water. We used a compound. This was dumped in the tank, and it was good for all the water in the tanks over a stretch of 180 miles or more. The only proper way to treat bad feed water is to treat it and then discharge it in the tank. We find that we have to vary our treatment of this water as close as 48 hours. Therefore, it is quite necessary that the operator shall have full knowledge of the variations that are taking place in the water that is flowing into these stations. In some of the creeks I have found as high as 20 streams of sulphur water. Through the wet season with soda and hydrates of lime we reduced that as much as 80%, and then we have to run it up again, in the dry season. We have had cracked flues on our consolidation engines every trip, but since the treatment of this water in this way, we only touch up the flues at every wash-out, which is about once in two weeks. The life of the fire-box is prolonged to the extent that the fire-box work alone will pay for the tank in a year. The operation of the tank is conducted at very little expense. We have a wheel connected with the discharge pipe and a



Flange Lubrication, Fig. 11. Hard Grease Lubricator in service position on front driver of locomotive.

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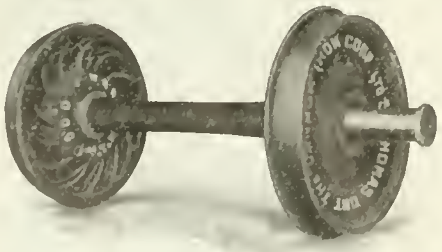
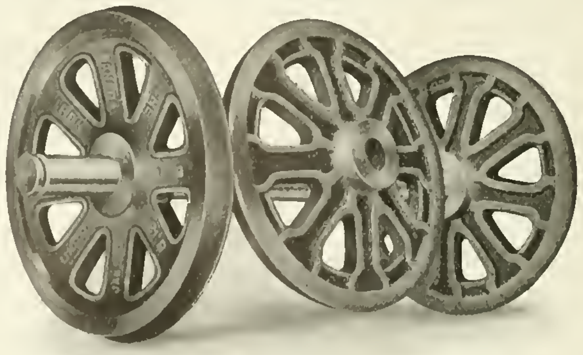




Reinforced Spoke Pattern Wheels.

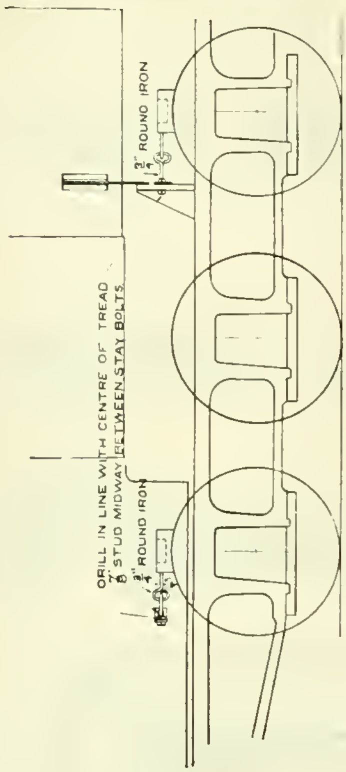
WORKS AT

HAMILTON, Ont.
MIDLAND, Ont.
DRUMMONDVILLE, P.Q.
ST. THOMAS, Ont.

THREE RIVERS, P.Q.
LONDONDERRY, N.S.
BATHURST, N.B.

FORT WILLIAM, Ont.
RADNOR, P.Q.
TORBROOK, N.S.

Fig. 13.



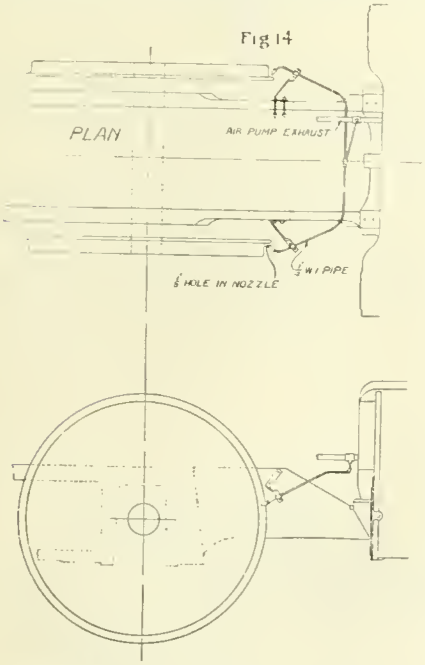
½" ROUND IRON
DRILL IN LINE WITH CENTRE OF TREAD
⅝ STUD MIDWAY BETWEEN STAY BOLTS.
½" ROUND IRON

Flange Lubrication, Fig. 13. Lobricator used in Fig. 12, applied to driving wheel flanges.

current of water flowing through this discharge pipe operates a wheel which provides power for the agitator, and also at the same time drives a pump for throwing the chemical into the top of the high tank. After we began to treat our water we had great difficulty with the foaming. We got our chemist after the difficulty, and he analyzed the water, but could not seem to understand why it foamed. Many of the engine crews supplied castor oil themselves to save them annoyance and trouble in getting up heavy grades.

H. H. **VAUGHAN**, Assistant to the Vice President, Canadian Pacific Railway, in discussing Prof. Benjamin's paper on superheated steam, said:—Those of you who have patiently listened to what I have said about superheating in the last few years must realize that this paper is quite a gratification to me. It explains very clearly several points that are experienced with superheated locomotives which we were induced to bring forward, but which we were unable to substantiate without any actual scientific experiments. For instance, one or two years ago I ventured to state that in my opinion it was a waste of money and time to worry about equipping locomotives with superheaters that only gave a superheat of 40 to 80 degrees. At that time such cost was advocated with the hope that trying the system in that way would avoid some condensation and that results would be very nearly as good as they would be with high superheat. Prof. Benjamin's paper shows us very distinctly how our experience was obtained, in practical service along these lines. The saving from low superheat is so small as not to make it worth while to maintain the apparatus. You will remember that I stated that our feeling was that until we got up to 150 to 160 deg., we hardly began to realize the benefits of superheating. From what I have heard in the last few months of the successful results obtained with locomotives equipped with still higher degrees of superheat, I think we would have gained very much more if we had followed the practice of the Schmidt people and got a really high superheat.

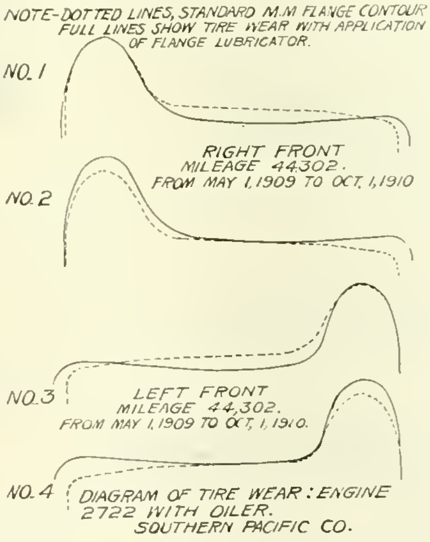
Fig 14



PLAN
AIR PUMP EXHAUST
¾ W.I. PIPE
⅛ HOLE IN NOZZLE

Flange Lubrication, Fig. 14. Flange lubrication by means of exhaust steam from the air pump.

FIG. 15



NOTE-DOTTED LINES, STANDARD M.M. FLANGE CONTOUR
FULL LINES SHOW TIRE WEAR WITH APPLICATION OF FLANGE LUBRICATOR.
NO. 1
RIGHT FRONT
MILEAGE 44302.
FROM MAY 1, 1909 TO OCT. 1, 1910
NO. 2
NO. 3
LEFT FRONT
MILEAGE 44,302.
FROM MAY 1, 1909 TO OCT. 1, 1910.
NO. 4
DIAGRAM OF TIRE WEAR: ENGINE 2722 WITH OILER.
SOUTHERN PACIFIC CO.

Flange Lubrication. Diagram of tire wear, locomotive 2722 with oiler, Southern Pacific Co.

A very interesting thing that strikes me in a cursory examination of this paper is a comparison of the diagrams. Fig. 7 shows how we obtain more and more economy as the superheat goes up. There is the explanation of the increased capacity that we get in actual surface upon superheater engines. We have always found that the harder you work them the more superheat you get, and the greater the saving, so that, while perhaps your coal figures will only show a 15 to 20% saving, yet, taking all the coal used, when you are working the engine hardest, you are getting the most saving per horse power. That is an increased advantage that we have always found in superheaters, and, while it has been frequently referred to, it has never been so clearly shown as in this paper.

Another thing, the last paper presented covering the results at Purdue University two years ago tried to make an explanation as to where we shall find greater economy in service than the results at Purdue indicated. The amount of superheat we were using was about 180 to 190 deg. There is quite a considerable drop in coal consumption between the amount of superheat obtained on the Cole locomotive at Schenectady and the one we were using, and it fairly well accounts for the results which we told you about.

I do not think that superheating needs any more advocacy on the part of the C.P.R. We think it is doing very well, and we have not changed our policy, except that we are going to follow the example set in the United States and equip our engines so that we will obtain a higher degree of superheat than has been obtained in the past.

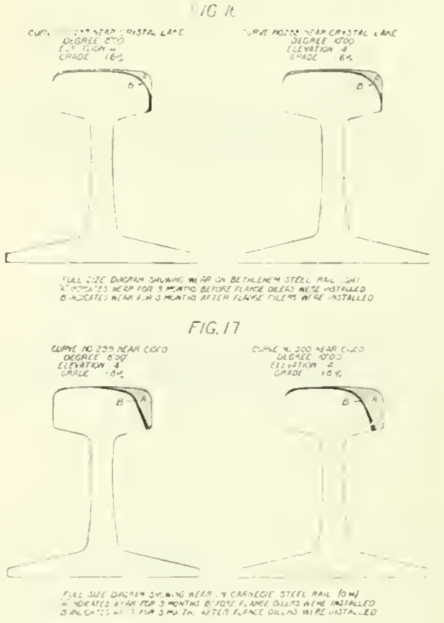
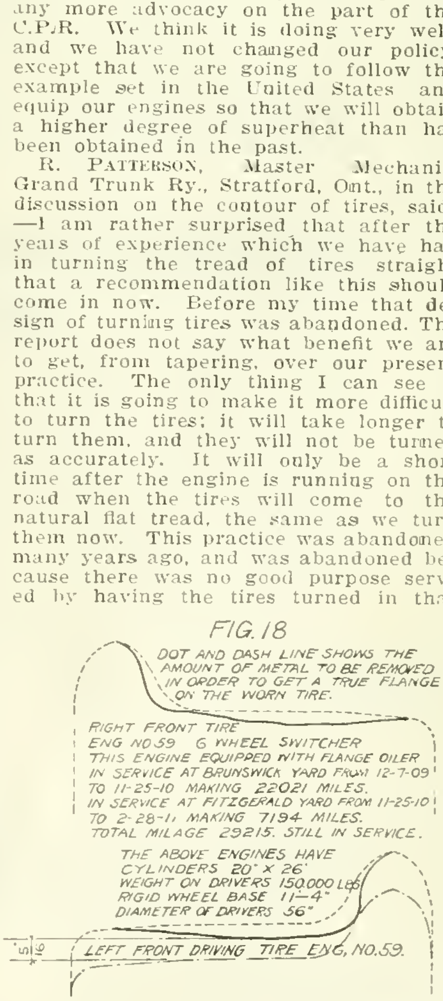


FIG 16
CURVE NEAR CRYSTAL LAKE
DEGREE 8°00
ELEVATION
GRADE 16%
CURVE NO 222 NEAR CRYSTAL LAKE
DEGREE 10°00
ELEVATION 4
GRADE .6%
B
A
FULL SIZE DIAGRAM SHOWING WEAR ON BETHLEHEM STEEL RAIL
"A" INDICATES WEAR FOR 3 MONTHS BEFORE FLANGE OILERS WERE INSTALLED
B INDICATES WEAR FOR 3 MONTHS AFTER FLANGE OILERS WERE INSTALLED
FIG. 17
CURVE NO 299 NEAR CISCO
DEGREE 8°00
ELEVATION 4
GRADE 16%
CURVE NO 300 NEAR CISCO
DEGREE 10°00
ELEVATION 2
GRADE 16%
B
A
FULL SIZE DIAGRAM SHOWING WEAR ON CARNEGIE STEEL RAIL (O.H.)
"A" INDICATES WEAR FOR 3 MONTHS BEFORE FLANGE OILERS WERE INSTALLED
B INDICATES WEAR FOR 3 MONTHS AFTER FLANGE OILERS WERE INSTALLED

Flange Lubrication. Figs. 16 and 17.

R. **PATTERSON**, Master Mechanic, Grand Trunk Ry., Stratford, Ont., in the discussion on the contour of tires, said:—I am rather surprised that after the years of experience which we have had in turning the tread of tires straight that a recommendation like this should come in now. Before my time that design of turning tires was abandoned. The report does not say what benefit we are to get, from tapering, over our present practice. The only thing I can see is that it is going to make it more difficult to turn the tires; it will take longer to turn them, and they will not be turned as accurately. It will only be a short time after the engine is running on the road when the tires will come to the natural flat tread, the same as we turn them now. This practice was abandoned many years ago, and was abandoned because there was no good purpose served by having the tires turned in that

FIG. 18



DOT AND DASH LINE SHOWS THE AMOUNT OF METAL TO BE REMOVED IN ORDER TO GET A TRUE FLANGE ON THE WORN TIRE.
RIGHT FRONT TIRE
ENG NO 59 6 WHEEL SWITCHER
THIS ENGINE EQUIPPED WITH FLANGE OILER
IN SERVICE AT BRUNSWICK YARD FROM 12-7-09 TO 11-25-10 MAKING 22021 MILES.
IN SERVICE AT FITZGERALD YARD FROM 11-25-10 TO 2-28-11 MAKING 7194 MILES.
TOTAL MILAGE 29215. STILL IN SERVICE.
THE ABOVE ENGINES HAVE
CYLINDERS 20" x 26"
WEIGHT ON DRIVERS 150,000 LBS
RIGID WHEEL BASE 11'—4"
DIAMETER OF DRIVERS 56"
LEFT FRONT DRIVING TIRE ENG. NO. 59.

TRACING MADE FROM PLASTER CASTS TAKEN FROM TIRES

Flange Lubrication, Fig. 18.

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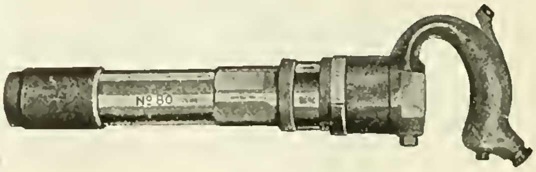

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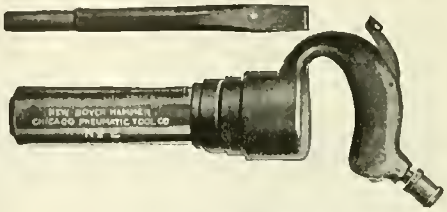

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manner, and I would like to know why we should go back to this practice now.

The following officers were elected:—President, H. T. Bentley, Chicago and North Western Ry.; First Vice President, D. F. Crawford, Pennsylvania Lines; Second Vice President, T. Rumney, Erie Rd.; Third Vice President, D. R. McBain, Lake Shore and Michigan Southern Rd.; Treasurer, Angus Sinclair, Executive Committee, C. A. Selly (C.N.L. & P.), E. W. Pratt (C. and N.W.), and J. F. Walsh (C. and O.).

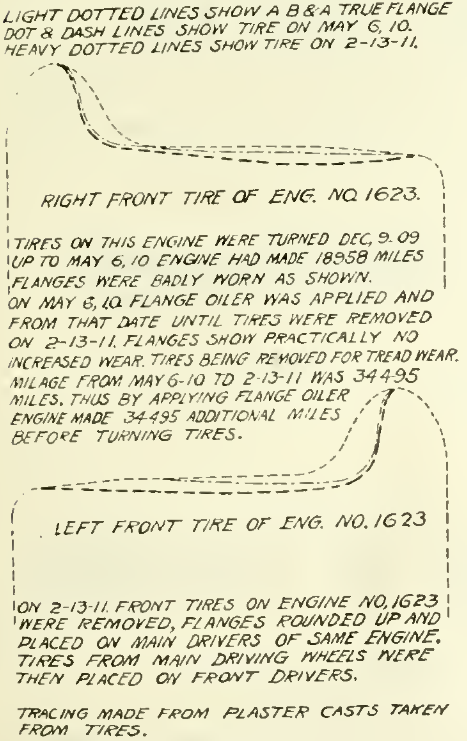
Master Car Builders' Association.

The Master Car Builders Association met at Atlantic City, June 19, 20 and 21. The President, T. H. Curtis, Supt. Mach., Louisville and Nashville Rd., in his opening address, referred to the following among other important matters:—

M.C.B. Standard Coupler.—A common standard in railway equipment, which is being interchanged, is a necessity—it is the need of today. To further profit by a common standard for equipment it is earnestly recommended that the Association speedily adopt a standard M.C.B. car coupler, and that this coupler must be standard in all of its parts, and every railway to use it only. The day of experimenting with car couplers is past, the state of the art has reached its maturity. A common standard for a car coupler will reduce the great number of repair parts that are now required to be kept in stock all over the country for repairs to the great number of different styles of the M.C.B. car coupler, which is now a standard only in its contour lines. In brief, the M.C.B. coupler of today is standard in service, but interchangeable only as a whole, as the various makes are widely different in details of construction. To facilitate the prompt movement of traffic and also raise the standard of efficiency and reduce the cost of operation, a standard M.C.B. coupler is a very present need. This subject of a standard car coupler was earnestly recommended by one of my worthy predecessors in his address to our Association.

Car Wheels.—The day for small or light capacity freight train cars, as well as passenger equipment cars, is about past. So-called heavy or large capacity cars are now being built extensively, and some have been in operation for a long time. In some cases the strains and stresses are possibly exceeding the limits of safety for certain kinds of material that have been heretofore commonly used. As a citation I will mention car wheels. The steel car wheel is now considered by some large railway companies to be a necessity. I will not comment on the steel car wheel or on the different kinds or makes and their mission in railway equipment of today, but will say that the time is at hand when something should be done by this Association in prescribing and requiring that under all heavy capacity cars an efficient and suitable car wheel must be used. The common cast iron car wheel of a grade used under light cars with good results needs to be materially increased in its strength and stability if it is to be used in service under heavy capacity cars of today.

FIG. 19.


LIGHT DOTTED LINES SHOW A B & A TRUE FLANGE
DOT & DASH LINES SHOW TIRE ON MAY 6, 10.
HEAVY DOTTED LINES SHOW TIRE ON 2-13-11.
RIGHT FRONT TIRE OF ENG. NO. 1623.
TIRES ON THIS ENGINE WERE TURNED DEC, 9-09 UP TO MAY 6, 10 ENGINE HAD MADE 18958 MILES FLANGES WERE BADLY WORN AS SHOWN.
ON MAY 6, 10 FLANGE OILER WAS APPLIED AND FROM THAT DATE UNTIL TIRES WERE REMOVED ON 2-13-11. FLANGES SHOW PRACTICALLY NO INCREASED WEAR. TIRES BEING REMOVED FOR TREAD WEAR. MILAGE FROM MAY 6-10 TO 2-13-11 WAS 34495 MILES. THUS BY APPLYING FLANGE OILER ENGINE MADE 34495 ADDITIONAL MILES BEFORE TURNING TIRES.
LEFT FRONT TIRE OF ENG. NO. 1623
ON 2-13-11. FRONT TIRES ON ENGINE NO. 1623 WERE REMOVED, FLANGES ROUNDED UP AND PLACED ON MAIN DRIVERS OF SAME ENGINE. TIRES FROM MAIN DRIVING WHEELS WERE THEN PLACED ON FRONT DRIVERS.
TRACING MADE FROM PLASTER CASTS TAKEN FROM TIRES.

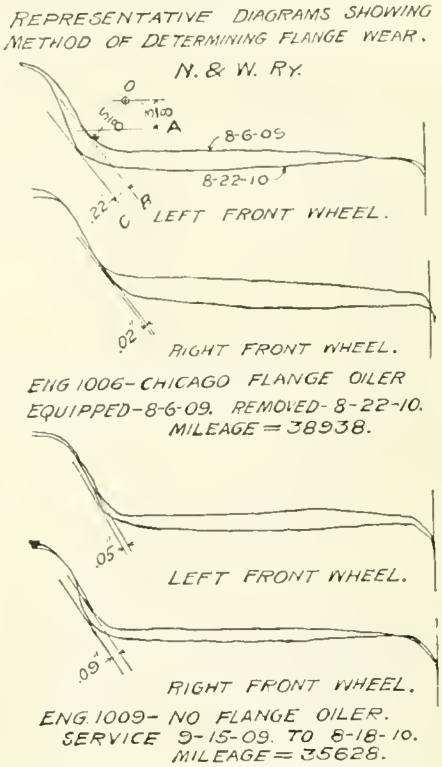
Flange Lubrication, Fig. 19.

Brake Shoes.—The increase in capacity of cars has necessarily increased the light weight of the car, and therefore made necessary the increase of the pressure on the brake shoe. For safety alone all brake shoes should have some kind of a wrought-iron or steel binding member constructed in the brake shoe to prevent the dropping of a piece of the brake shoe on the track should the shoe crack or break and a portion of the shoe fall to the roadbed. The all cast-iron brake shoe does break in pieces in service. It should be replaced by a modern up-to-date brake shoe, thereby increasing the safety of train operation, and I know it will not increase the cost of operation. This change to a modern brake shoe will effect economy and increased efficiency.

Brake Beam Safety Hangers.—For safety all brake beams should have efficient safety hangers, and these safety hangers or their equivalent should be required on all cars offered in interchange. The best design of brake hangers will break once in a while, and there should be a close second hanger or safety device to prevent the brake beam from falling on the track. When a brake beam falls on the track while the car is in motion the results are more or less disastrous.

Air Brake Hose.—Some contentions have arisen during the past two years or so regarding M.C.B. standard air brake hose, incident to the enforcement of the rule requiring the use of standard 1⅜ in. air brake hose properly labeled. After the adoption of the specification and label, the day for complying with the standard was set forward on three different occasions, and it was not until Sept. 1, 1910, that it became obligatory to have the standard hose on cars offered in interchange. As it was not until about three years after the adoption of the specification and label as a standard that it was obligatory to equip cars with this hose, or, in other words, as three years' time had been allowed in which to properly equip cars with suitable hose, the officers of our Association did not feel that it would impose any sudden hardship upon the railways. However, it was a great surprise to many to learn, after having become better acquainted with the situation, that many of the roads had paid little or no attention to the purchase of hose as required by the Master Car Builders' Association. Some of the roads were placed to a large expense to apply the proper hose, which could have been obviated by buying the standard M.C.B. hose. Since Sept. 1, 1910, practically all cars have been equipped with the standard hose, and this subject may now be considered as closed, but it is hoped that all will learn the lesson of the necessity for complying with the M.C.B. standards and avoid a recurrence of unnecessary expense due to deviating from the standards, even though the deviation may be slight.

FIG. 20


REPRESENTATIVE DIAGRAMS SHOWING METHOD OF DETERMINING FLANGE WEAR.
N. & W. RY.
O
5/8
3/100
A
8-6-09
8-22-10
.22"
B
C
LEFT FRONT WHEEL.
.02"
RIGHT FRONT WHEEL.
ENG 1006-CHICAGO FLANGE OILER EQUIPPED-8-6-09. REMOVED-8-22-10. MILEAGE = 38938.
.05"
LEFT FRONT WHEEL.
.09"
RIGHT FRONT WHEEL.
ENG. 1009- NO FLANGE OILER. SERVICE 9-15-09. TO 8-18-10. MILEAGE = 35628.

Flange Lubrication, Fig. 20.

LIMITING HEIGHT OF BOX CARS.

H. H. Vaughan, Assistant to the Vice President, Canadian Pacific Ry., brought up this question, which was discussed as follows:—

I wish to make a request that this association establish a standard or limiting the height for the running board of a standard dimension box car. I will put it in the form of a motion and move that the matter be referred to the committee on standards for its consideration. The standards of this association prescribe a height for the eaves of a box car with standard inside dimensions, but do not prescribe any standard height for the running board. The matter has been brought before the Canadian Railway Commission in connection with bridge and tunnel clearance, and, at the meeting at which it was presented to them, the question arose that this association had never established any standard height for the running board of box cars. I understand that the matter is to a certain extent already in the hands of the American Railway Association, but at the same time I see no objection to the committee on standards corresponding with that association and ascertaining if it would be satisfactory to them for us to take this matter up.

R. L. Kleine (Penna.): We now have a specified height for brake shaft—that is, 14 ft. 2 in., if I am not mistaken—and the safety appliance law requires 14-in. clearance underneath the brake wheel, and that would practically make the maximum height of the running board 13 ft. 10 in., according to present standards.

H. H. Vaughan: There is practically no difficulty, and I think I am correct in saying that almost no cars today exceed a height of 13 ft. 6 in., and the difference between that and 13 ft. 10 in. is worth having, as a matter of saving, if we can get it.

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C. A. Schroyer (C. and N.W.): I think it is unnecessary that a committee should be appointed on that subject, because we are limited in the height of our cars by the brake wheel We must have a clearance between the brake wheel and top of the running board, and we can go to within these limits, so that a committee appointed on that subject would not be able to accomplish anything more than is now accomplished by the limits prescribed

C. A. Seley (C.R.I. & P.): I think what Mr. Vaughan seeks is merely a statement in the standards of the height, no matter how derived. I think that is within the province of the committee on standards to take that up and include it in their report.

R. L. Kleine: Do I understand, Mr. Vaughan, that it is the maximum height of running board that you want fixed, or is it a uniform height?

H. H. Vaughan: I think we should fix a maximum height in the standards. The height of the brake wheel does not affect this, It is the height of a man standing on the running board that we are after. In Canada there is a movement to fix the height of bridges at 22 ft. and we think they should be 20 ft., as we assume that we are not going to have brakemen who will be over 6½ ft. tall, standing on a running board 13½ ft. in height, so that everything we can get out of that is in value in grade crossing work if they are going to insist on clearances enough for a man to stand on top of an ordinary car

When the reports of the committee on rules for loading material came up for discussion, J. J. Tatum. B. and O. Rd., pointed out that under rule 26, as it formerly read, it was optional to use either metal or wood spacing blocks. This year the report reads "inserting hardwood or metal blocks (latter preferred." etc. He moved that the rule be the same as formerly, making it optional to use metal or wooden spacing blocks. The motion carried.

The report on coupler and draft equipment evoked a long discussion, which resulted in the committee being instructed to design an M.C.B. coupler and present it to the next convention, the committee being authorized to employ a mechanical engineer or such other assistance as they may deem best.

It was decided to submit to letter ballot the reports of the committees on coupler and draft equipment car wheels and code of tests.

The following officers were elected:—President, A. Stewart, Southern Rd.; First Vice President, D. F. Crawford, Pennsylvania Rd.; Second Vice President, C. E. Fuller, Union Pacific Rd.; Third Vice President, M. K. Barnum, Illinois Central Rd.; Executive Committee, F. W. Brasier, N.Y.C and H.R.R.; C. A. Schroyer, C. and N.W. Ry.; A. Kearney, N. and W.R.

Atlantic City Convention Notes.

The Railway Supply Manufacturers' Association, at its annual meeting at Atlantic City, June 17, elected B. E. D. Stafford, Flannery Bolt Co., Pittsburg, Pa., as President, and S. G. Allen, Franklin Railway Supply Co., New York, as Vice President. The bylaws were amended by adding Canada to district one, which hitherto consisted of the New England States only.

W. McWood, ex-Superintendent Car Department, G.T.R., who was President of the Master Car Builders' Association in 1888, 1889 and 1890, and who presided over its conventions at Alexandra Bay, Saratoga and Old Point Comfort, received a most enthusiastic greeting at the Association's recent convention at Atlantic City, when he was introduced as the oldest living ex-president.

W. E. Fowler, ex-Master Car Builder, C.P.R., and a past president of the Master Car Builders' Association, sent the following letter, which was read at the Association's recent convention at Atlantic City:—"For the first time in many years I shall not be at the convention. Continued bad health has compelled me to make my residence in California, where I hope to partially regain my health at least. This is a beautiful section of the country. There is everything here to please the eye, but I wish I could be at Atlantic City with you. I wish the Association at its convention all possible success."

Both conventions were preceeded on the opening day of each by a grand march of the members, and the ladies accompanying them, from the headquarters hotel to the convention room on the pier. Band concerts were given daily in the entrance hall of the pier. There was an afternoon concert and an afternoon monologue entertainment at the Brighton Casino; one evening was devoted to a large bridge and euchre party, and another to a vaudeville performance. The usual baseball game, East vs. West, was played, and there were two receptions and two balls, under the auspices of the two associations.

Among those in attendance from Canada were:—E. N. Bender, General Purchasing Agent; H. H. Vaughan, Assistant to the Vice President; L. R. Johnson, Assistant Superintendent Motive Power; F. B. Zercher, Superintendent Angus shops; H. Osborne, Superintendent Angus locomotive shops; G. I. Evans, Mechanical Engineer; C. Kyle, General Master Mechanic; H. G. Reid, J. H. Mills, A. W. Horsey, Master Mechanics; A. Plow, Mechanical Inspector; S. O. Robins, Chief Draughtsman Car Shops, Canadian Pacific Ry.; Robt. Patterson, Master Mechanic; Jno. Hendry, J. L. Hodgson and T. A. Treleaven, Master Car Builders; Jas. Powell, Chief Draughtsman, Grand Trunk Ry.; A. L. Graburn, Mechanical Engineer, Canadian Northern Ry.; G. R. Joughins, Superintendent Motive Power, Intercolonial Ry.; M. Goodrich, Master Mechanic, Ottawa and New York Ry.; G. Collins, General Manager, Central Ontario Ry.; J. Christopher, Master Mechanic, Toronto, Hamilton and Buffalo Ry.; W. McWood, ex-Superintendent Car Department, Grand Trunk Ry.; W. Mills, Master Car Builder, Algoma Central and Hudson Bay Ry.; Victor Curry, W. I. Atwood, Canadian Car and Foundry Co.; Arthur Allen, of the Holden Co., Thomas Arnold, of Taylor and Arnold, Ltd.; Wallace H. Noble, Anchor Packing Co. of Canada; Acton Burrows, Managing Director Railway and Marine World.

The Exhibits at Atlantic City.

A large portion of the space on Young's Million Dollar Pier was devoted to exhibits of railway supplies machinery, etc., there being about 260 exhibitors, occupying about 75,000 square feet of space. Among the principal exhibitors were the following::—

American Brake Shoe and Foundry Co., Mahwah, N.J.—Locomotive driver brake shoes, flanged brake shoes for steel tired and rolled steel wheels unflanged brake shoes for cast iron wheels, combination driver brake heads and reinforcing parts which go with these shoes.

American Locomotive Co., New York —Reception booth, with photographs of locomotives.

American Vanadium Co., Pittsburg Pa.—Vanadium ores and alloys, vanadium steels, both wrought and cast; and vanadium cast iron; specimens of vanadium steel and iron; locomotive parts such as side rods, piston rods, crank pins, axles, frames, springs, tires, wheels, tubes, safe ends, cylinders, bushings and piston rings; vanadium steel and iron automobile parts, such as crankshafts, gears, axles, frames, springs, steering arms, cylinders, etc.; vanadium machinery steels; vanadium high speed tool steels; a large vanadium cast steel yoke, tested by the government, several of which are to be used on the Panama canal.

Anchor Packing Co., Philadelphia, Pa. —Fibre packing and mechanical rubber goods, tauril sheet packing, throttle and air pump packing.

Baldwin Locomotive Works, Philadelphia, Pa.—Jointly occupying space nine with the Standard Steel Works Co., as office for pier headquarters.

Besly and Co., Charles H., Chicago, Ill.—New Besly pattern makers' disc grinder, helmet spiral circles, temper taps, oil and babbitt.

Bowser and Co., Inc., S. F., Ft. Wayne, Ind., and Toronto.—Oil storage systems complete long distance self-measuring pumps, power pumps, automatic registering oil meters, filtering systems for lubricating oils, oil storage tanks of all sizes and shapes, with pumps for handling and measuring all kinds of lubricating, paint and other oils, including gasolene, etc., suitable for storehouses, machine and paint shops, round houses, engine rooms, signal towers, automobile garages.

Buffalo Brake Beam Co., New York, and Brantford, Ont.—Brake beams for all classes of cars, locomotives and electric equipment, meeting M.C.B. standards and railway companies' requirements.

Chicago Railway Equipment Co., Chicago.—Brake beams of the "P.C." creco "E.L." creco, diamond special, diamond, national hollow, sterlingworth, ninety six; Monarch and special types monitor bolsters, creco roller side bearings, brake slack adjuster, journal box and lid; automatically adjustable brake heads, removable leg brake head; creco sliding third point brake beam support.

Commercial Acetylene Co., New York. — Acetylene car lighting equipment, acetylene locomotive headlight equipment, acetylene signal equipment, acetylene marine signal with sun valve, acetylene tanks for welding, tank cut open showing asbestos packing.

Consolidated Car Heating Co., Albany, N.Y.—Steam traps, end valves, inlet valves, thermostatic control of steam heat, steam couplers, electric heaters.

Dearborn Drug and Chemical Works, Chicago, Ill.—Booth arranged in the form of a very artistic lodge and garden.

Detroit Lubricator Co., Detroit, Mich.—No. 22 3-feed lubricator, no. 22 3-feed lubricator (sectional), no. 32 4-feed lubricator, no. 42 5-feed lubricator, no. 52 6-feed lubricator, no. 62 7-feed lubricator, no. 0 1-feed lubricator, no. 5 2-feed lubricator, no. 7 2-feed lubricator, no. 11 2-feed lubricator, Detroit transfer filler, 1-feed, 2-feed and 4-feed air cylinder lubricators, Detroit air pump lubricator, Detroit emergency valve, automatic steam chest plugs, boiler valve, guide cup, rod cup, Detroit force feed oilers.

Edison Storage Battery Co., Orange, N.J.—Storage batteries for car lighting, signaling and ignition. Details of manufacture of batteries fully shown.

Fairbanks, Morse and Co., Chicago.—One no. 28 all-steel gasoline motor car for one, two or three passengers, two-cycle two-cylinder direct connecting engine, one no. 26 section gasoline motor car with two-cycle two-cylinder gasoline engine. Track jacks, ball bearing jack and hydraulic jacks

Flannery Bolt Co., Pittsburg Pa.—Tate flexible staybolts, radial and crown staybolts, Tate installation tools for applying the Tate bolt, staybolt tests

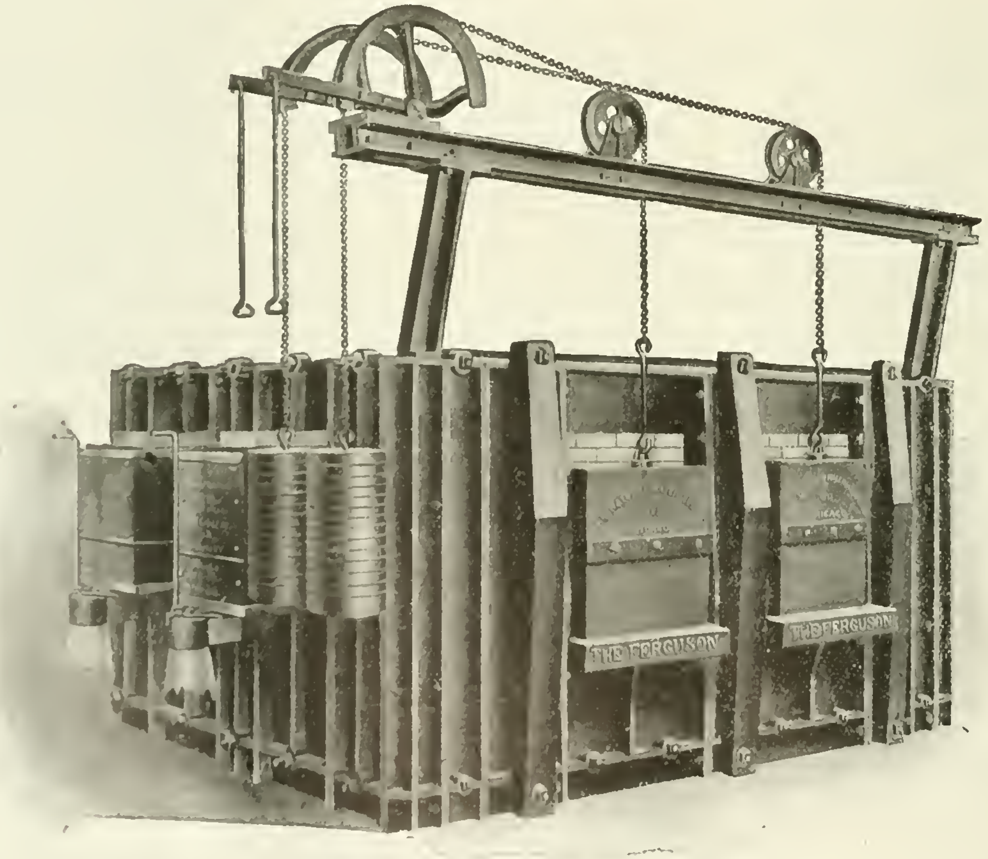
Franklin Railway Supply Co, New York.—Booth fitted up for receiving visitors, with 300 daily newspapers on

FERGUSON SHOP FURNACES

ARE STANDARD

In Practically all Railroad, Car and Locomotive Shops

Try one in competition with any other make and learn why.



DOUBLE DOOR HAMMER FURNACE

THE Railway Materials Co.

New York **Chicago**

MADE IN CANADA

tile from motive power centres throughout the United States, Canada and Mexico. Car equipped with Franklin flexible metallic car roof.

Galena Signal Oil Co.—Reception booth for guests.

Gold Car Heating and Lighting Co., New York.—Heating, lighting and ventilating apparatus for passenger and refrigerator cars.

Goldschmidt Thermit Co., New York and Toronto.—Complete appliances for making thermit welds. Appliances for butt welding and wrought iron and steel pipes. Specimen welds showing amalgamation of metal obtained. Metals and alloys produced free from carbon by the thermit process. Photographs of important repairs executed by the thermit process Samples of thermit, nickel thermit and chromium thermit.

Greene, Tweed and Co., New York.—Palmetto packing, round and square, for high steam pressures. Palmetto packing twist. Palmetto packing, in sets for railroad service, Manhattan packing, for low steam and hydraulic pressures. Favorite reversible ratchet wrench.

International Correspondence Schools, Scranton, Pa.—Demonstration by apprentices of apprentice class work in classes on various railways.

H. W. Johns-Manville Co., New York and Toronto.—Asbestos roofing, wool felt roofings, water-proofing materials, pipe covering felts, air-pump throttle, coil, spiral and sheet asbestos packings, high and low pressure pipe coverings and pipe covering felts, high temperature fire brick cements, pipe covering and boiler cements, electrical materials, boiler laggings and cements, vitribestos pipe coverings, transite asbestos shingles, asbestos wood, asbestos smoke jacks, sanitary seats and tanks, underground electrical conduit, steel car insulation, refrigerator car insulation, car roofings, locomotive cab roofing, underground sectional conduit for steam lines, air brake expander rings.

McConway and Torley Co., Pittsburg, Pa.—McConway steel tired wheel, Buhoup flexible truck, Buhoup 3-stem passenger coupler, Pitt passenger coupler, Janney "X" and Penn freight couplers, steel castings.

McCord and Co., Chicago.—Malleable iron, cast steel and vanadium grey iron journal boxes. Pinless lid and outside metal dust guard journal boxes, National equalizing wedges, draft gears, spring dampeners and operating locomotive force feed lubricator lubricating driving box.

Mudge and Co., Burton W., Chicago., Ill.—Garland System passenger car ventilation, full size models showing application Garland ventilators to monitor and arch roof cars. Ventilator registers and operating devices.

Nathan Manufacturing Co., New York.—Injectors, steam valves, boiler washer and tester, oil cups, whistles, engine and boiler fittings, lubricators, boiler checks, steam fire extinguisher, water gauges and safety valves.

Norton Inc., A. O., Boston, Mass., and Coaticook, Que.—High speed ball bearing jacks.

Pyle National Electric Headlight Co., Chicago.—Reception booth.

Safety Car Heating and Lighting Co., New York.—Car heating and lighting apparatus, car lighting by Pintsch gas, axle light and vapor light, latest designs of Pintsch mantle lamps and electric fixtures, car heating by thermo jet direct steam and hot water with thermo jet control.

Standard Coupler Co., New York.—Standard steel platforms and buffing mechanism. Sessions-Standard friction draft gears.

Standard Steel Works Co., Philadelphia, Pa.—Driving tire, steel tired wheels, rolled steel wheel driving wheel centers, driving axles, forgings, rings and springs.

Symington Co., The T. H., Baltimore, Md.—Farlow draft gear, Symington journal boxes, flexible dust guards.

United States Light and Heating Co., The, New York City, N.Y.—Axle electric car lighting apparatus. Axle driven generators, truck suspensions, generator regulators, lamp regulators, storage batteries for car lighting, signals, telephones and central stations.

Westinghouse Air Brake Co., Pittsburg, Pa.—Empty and load brake demonstration rack, PC equipment demonstration rack, centrifugal dirt collector demonstration rack, PC equipment illuminated chart, Westinghouse brake test truck, Westinghouse enameled main reservoirs, galvanized annealed steel hose clamp, centrifugal dirt collector for 9½-inch compressor.

Wood, Guilford S., Chicago, Ill.—Wood's flexible nipple end protector The monogram train pipe bracket.

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C.N.R. Revision at Rainy Lake.

The Canadian Northern is now making a revision of its line across the narrows of Rainy Lake, near Fort Frances, Ont., which is unusual in several respects. The present line between Winnipeg and Port Arthur was built in 1900. It crossed Rainy River on a pile trestle two miles long. The bottom of this lake is similar in many ways to the muskegs so common in that section, and in building the trestles in the soft bottom many piles 80 ft. long were used, even these frequently going down one foot at the last blow of the hammer. In spite of these unfavorable conditions very little difficulty has been experienced in maintaining the structure, but it was necessary to take precautions continually to guard against trouble.

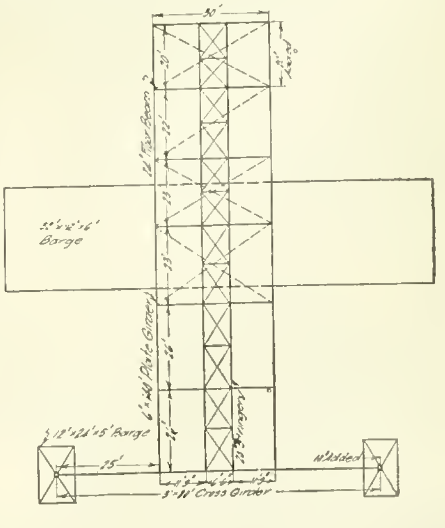
The greatest difficulties resulted from the ice. In the fall when the lake froze over the water was usually considerably above the late winter stage, and as it gradually fell it was necessary to keep the ice cut away from the piles to avoid its carrying them down with it and throwing the track out of surface When the ice went out in the spring the side pressure was very great, although no actual damage from this source was met with until a year ago, when one section of the trestle was pushed quite badly out of line. While but comparatively little trouble had been met, there was always danger, and it was decided to build a new line on solid embankment when the trestle required renewal.

In making the location survey for this new line soundings were taken through the water and mud to rock, over a large area adjacent to the projected line This work was started during the winter, but only fair progress was made. Much difficulty was experienced in driving down the sounding rods, as they became quickly coated with ice. The following summer the sounding was continued, a scow 22 by 34 ft. by 2 ft. deep being used, on which a hand driver with 75-lb. hammer was erected. This scow had a well in centre, through which the sounding rod, composed of extra heavy 1¼ in. steel pipe in 10 ft. sections, was passed. Much more satisfactory results were obtained from this summer work than from soundings in the ice and better progress was made, a maximum of 28 soundings being secured in one day. The soundings were taken in water as much as 40 ft. in depth, while below these the mud extended to a maximum depth of 50 ft. over the rock. This mud varied from a soft ooze to a compact clay in which the sounding rod would penetrate but ⅛ in. with a 4 ft. drop of the hammer. Following the taking of the soundings a contour map of the lake bottom was made. By means of this map a new line was located over the summit of a submerged hill rising nearly to the surface of the water and at another place along a submerged side slope, very materially reducing the yardage. While introducing more curvature and lengthening the line about 900 ft., the new line was adopted because of the greatly decreased quantities of fill necessary as compared with any other line, and also to secure bridge openings at right angles.

The new line is 15,814 ft. long and provides two openings for logs and navigation; 800,000 cu. yds. of rock were required for a double track embankment, divided principally between three fills, 1,000 ft. long and requiring over 100,000 yds. each and one 3,000 ft. long requiring 400,000 yds. About 95% of this rock is secured from an 80-acre borrow pit on an adjacent island.

The contractors are using 25 tappet air drills for putting down the holes in the rock, these being drilled up to 30 ft. deep in the first lift and from 20 to 25 ft. in the second lift. Air is furnished by a pair of R. P. 2 type Canadian-Rand compound air compressors compressing 1,046 cu. ft. of free air per minute to 100 lbs. pressure. These compressors in turn are run by two 200 h.p. motors, securing power from the Rainy River Falls development at Fort Frances 2½ miles distant. The holes are heavily sprung and loaded with a combination of dynamite, virite and black powder, 300 shots being commonly fired at once. Two 95-ton Bucyrus shovels load the rock into 12-yd. standard gauge side dump cars, which are pulled by four-wheel, 35-ton switching engines.

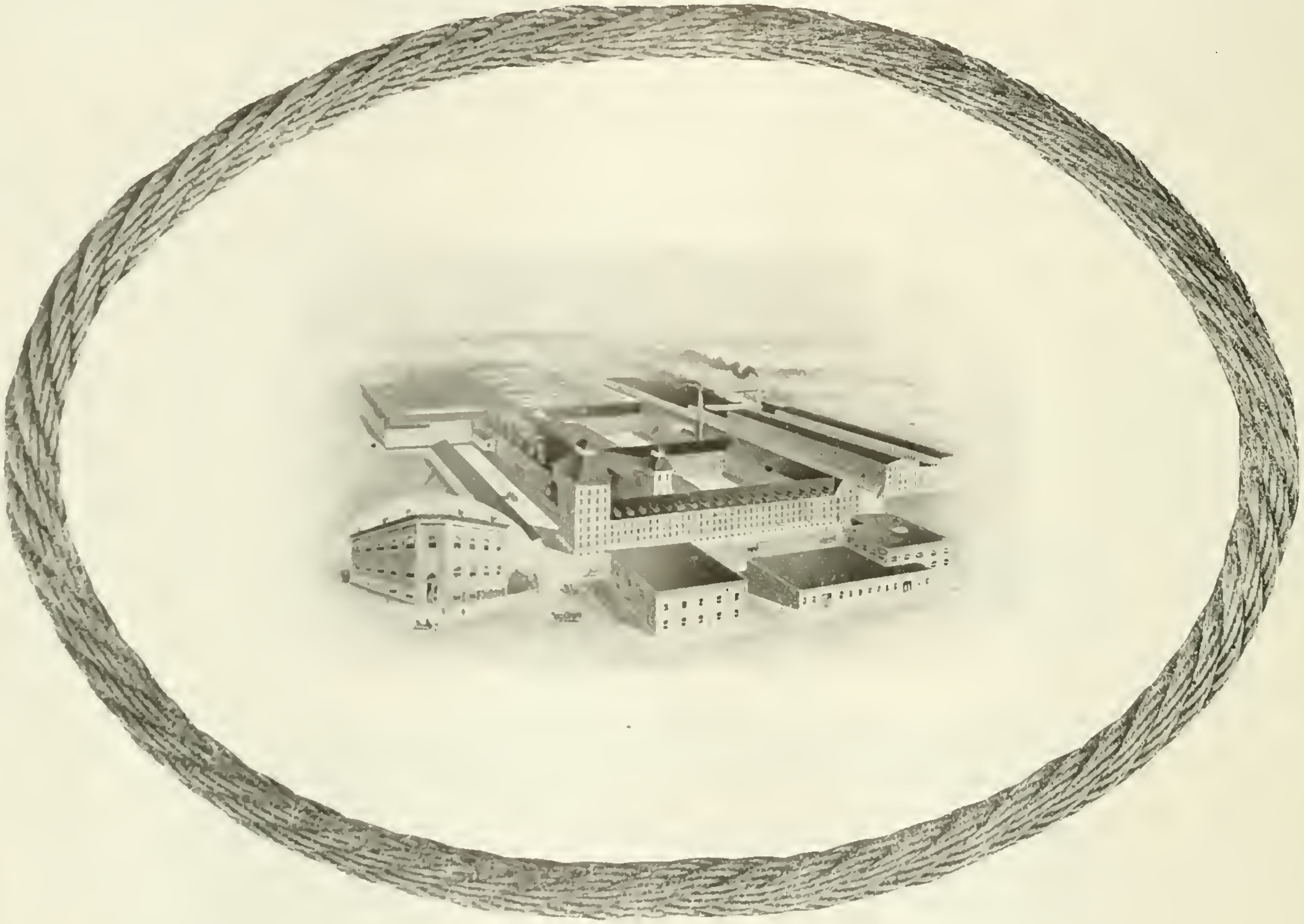
The contractor has devised an unusual arrangement for building the fills. The first fill was made in the ordinary way, by side dumping from a trestle and raising the tracks. A great deal of difficulty was encountered owing to the many heavy settlements of the fill carrying the trestle down with it. This settlement was specially severe in the shallow water, where there was much mud. To escape from the necessity of a trestle he placed two 6-ft. plate girders 140 ft. long across a barge 32 by 112 ft. by 6 ft. deep, with one end of these girders resting on a 3-ft. plate girder 80 ft. long, which was supported in sliding braces on two smaller barges 12 by 24 ft. by 5ft. deep. The 6-ft. girders were placed 30 ft. centre to centre and were connected by seven floor beams 24 in. deep braced diagonally and spaced 20 to 23 ft., except at the two end panels, where they are spaced 26 ft. apart. On these floor beams two 20-in. stringers were placed spaced 6¼ ft. centre to centre and connected with double sway braces. On these stringers a standard gauge track was laid extending on to the adjacent bank over two log stringers which reached over the end of the bridge. Cars are pushed out on to this



C.N.R. Rainy Lake Revision. Bridge Plan.

The B. Greening Wire Co., Limited

Established 1859 Incorporated 1889



WIRE ROPE.

We make in all sizes for all purposes.

All wire used in our ropes is subjected to a complete set of the severest tests before being made into rope.

COPPER CLOTH.

For Car Ventilators.

LOCOMOTIVE SMOKE BOX NETTING.

Government Standard.
Double Crimped.
Absolutely square and uniform openings.

WIRE CLOTH.

Of every description.

If you have not our catalogue, we should be pleased to send one on application.

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HAMILTON, ONT. - - MONTREAL, QUE.

bridge and dumped in the two shore panels. They are then pushed out on to the cantilever to allow others to be dumped, the cantilever acting as a tail track. As the two small barges at the shore end are placed at wide centres, the entire equipment can be pushed farther into the lake as the fill progresses. In completing the fill to grade it will be necessary to lengthen the cross girder, substitute larger barges for the 12 by 24 ft. barges, and raise the entire bridge.

This arrangement has proven entirely successful, the only objection being that the 12 by 24 ft. barges are not large enough and not far enough apart to enable the higher dump to be built at once. The barges are anchored to rock by steel cables and no difficulty has been experienced with the 3 or 4-ft. waves which are encountered. To show the advantage of this floating equipment and the impracticability of filling from a trestle on this work, on one end of the 3,000-ft. fill 1,200 cars were dumped without moving the barges, the top of the fill repeatedly reaching the level of the girders and suddenly settling, leaving the bridge stringers in mid-air and forcing the mud to within 20 ft. of the surface in front of the barges where there had previously been 40 ft. of water. A comparison of the excavation and fill quantities has shown that the rock has settled to the rock on the lake bottom.

The contractors for this work are Johnson & Carey, St. Paul, Minn., who are working under the direction of M. H. MacLeod, General Manager and Chief Engineer, C.N.R., W. L. Mackenzie, Bridge Engineer, and B. S. Remington, Assistant Engineer in charge of the work, to whom we are indebted for the foregoing information.—Railway Age Gazette.

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The Canadian Westinghouse Co., Ltd., has declared a quarterly dividend of 1½%, and a bonus of 1%, payable July 10 to shareholders of record June 30.

National Transcontinental Railway.

Negotiations are in progress between the G. T. Pacific Ry. and the N.T.R. Commissioners with a view of certain sections of the line being taken over and placed in operation. It is thought that the section through the St. Maurice Valley in Quebec and a section between Plaster Rock and Moncton, N.B., may be taken over this year.

According to an Ottawa press report, June 16, the Commissioners have decided not to enforce the penalty of $5,000 a month against contractors who have failed to complete the sections let to them within the time limit, on account of the difficulty experienced in getting labor since the contracts were let.

Tenders will be received to July 15 for the erection of two terminal stations, one at Reddit, Ont., and the othre at Transcona, Man.

The two mile approach of the line in St. Boniface connecting up the line from the east with the tracks of the joint terminals at Fort Garry, Winnipeg, is practically completed. The first mile of the approach is graded with sand and gravel without any trestle work; the next half mile comprises a network of trestle work, and the last half mile from Archibald St. to the river will be built on a series of concrete piers varying from 30 to 50 ft. apart. The highest point is just over Archibald St., being 30 ft above the street level. Steel bridges are erected over five streets and there is also a steel bridge over the Seine River. The J. D. McArthur Co. is carrying out the work.

GRAND TRUNK PACIFIC RAILWAY.

In a recent interview President Hays, referring to the branch lines, said it was hoped to complete some 645 miles of new lines this season. Reports from all the lines under construction show that rapid progress is being made with grading and track laying. It was stated before the Board of Railway Commissioners, July 6, that the company had 215 miles of track, ready for the operation of freight trains, but of which it was impossible to make any use, as the Commissioners had put a stop to the operation of any line for any purpose whatever until it had been inspected.

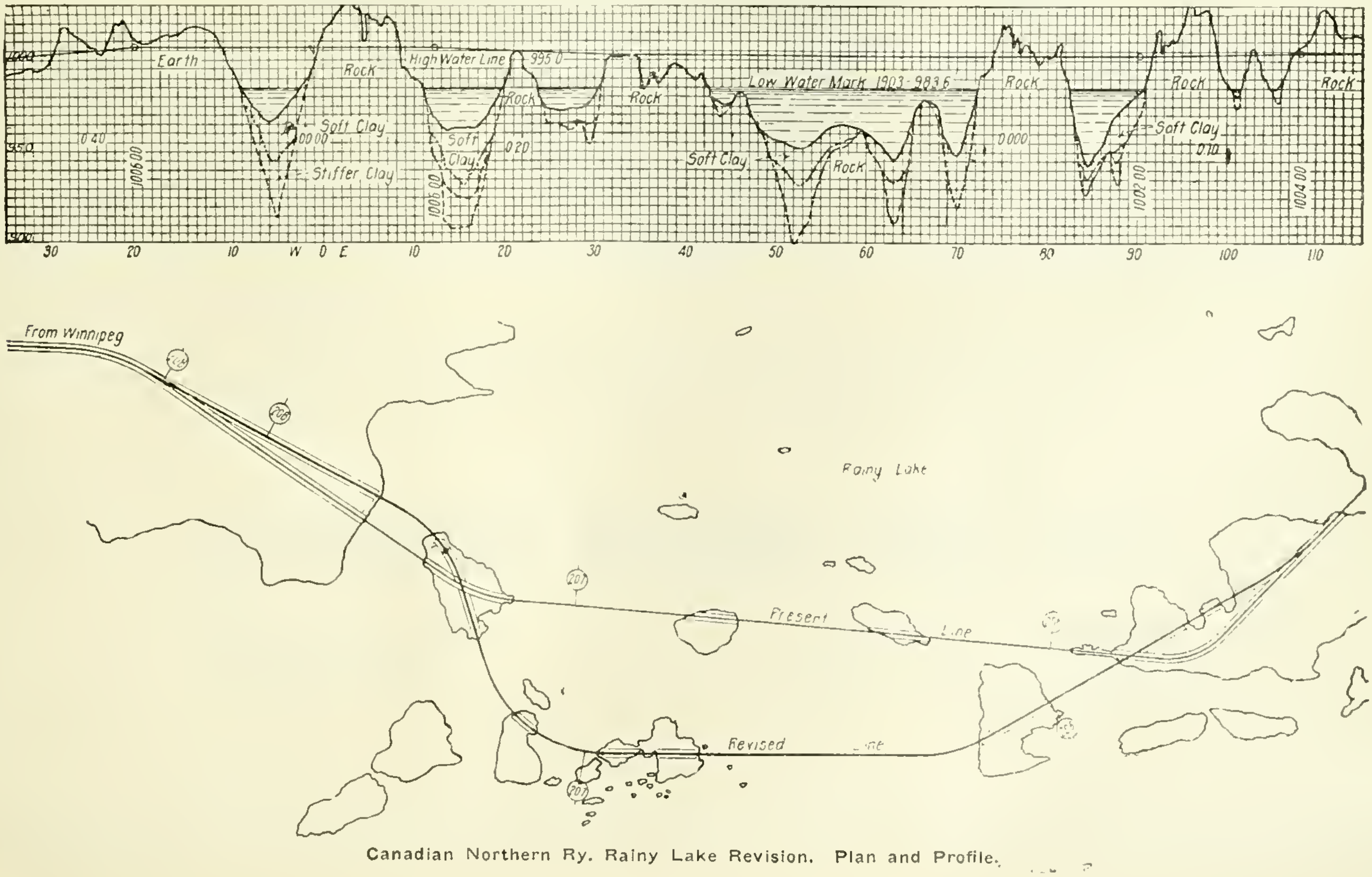
An order has been issued by the Board of Railway Commissioners approving of the location of the Melville-Regina branch from the west boundary of sec. tp. 18, range 19, west of the second meridian, at mileage 90.74 to Regina city limits, at mileage 92.62.

The revised location maps for the branch from Biggar, Sask., to the 4th meridian, 100 miles have been approved by the Minister of Railways, and the Board of Railway Commissioners has approved of location plans of the branch, from mileage 19.97 to 53.23, Sask.

The Minister of Railways has approved of the route map for three miles covering the entrance of the branch line from Tofield into Calgary, Alta. Construction on this branch was reported to have been stopped June 8, owing to an injunction having been obtained by the C.P.R. to keep the G.T.P.R. off all C.P.R. lands in the irrigation area. Construction has been stopped at Berseker, Alta., about 10 miles out of Calgary. The company's engineers are locating a line from Calgary southerly to the International boundary, just east of the Little Bow River.

The Department of Railways has approved of the route map of a line northerly from Edson, Alta., to the Pacific Northern and Omineca Ry., about 50 miles.

C. M. Hays, President, completed a trip of inspection over the line, in company with a number of other officials, June 9, when the party left Prince Rupert, B.C., on the return journey. In the course of an interview at Vancouver, Mr. Hays said better progress is being made east of the Rocky Mountains this year than in 1910. The party travelled on the company tracks for 200 miles west of Edmonton, or within 25 miles from



Canadian Northern Ry. Rainy Lake Revision. Plan and Profile.

Signal Protection

on a railroad must not restrict traffic or interfere with proper train movements in order to be effective, especially on single track lines. The only system of signals, with one exception, which does not restrict or interfere with traffic on a single track line **is the Automatic.**

The exception is the lock and block with intermediate automatic signals between sidings, which is much more expensive to install than an automatic system, and is considered practically prohibitive in operation expense.

THE AUTOMATIC SYSTEM

on single track, when properly installed, fully protects trains against head-on and rear-end collisions, allows following train movements between sidings, with the trains properly spaced, and thus facilitates as well as protects traffic.

A cheaper system either fails to afford proper protection, interferes with regular train movements or restricts traffic.

The Hall Signal Company

NEW YORK - CHICAGO

the summit of the Rocky Mountains at the Yellowhead Pass. The work is well under way to Tete Jaune Cache, B.C., to which point track should be laid in the fall. Tenders will be called for shortly, for the building of the 410 mile gap between Tete Jaune Cache, and Aldermere, B.C. "Possibly," added Mr. Hays, "Mr. Kelliher may be in a position to call for the tenders next week." It is expected to have the line completed by the end of 1913, and not until this work is done will the company take up, said Mr. Hays, the question of the building of a line from Fort George to Vancouver. On June 15, B. B. Kelliher, Chief Engineer, stated in Vancouver that contractors had been asked to send in tenders for this mileage, and he hoped to see work started on it this summer.

An agreement was approved by the Prince Rupert City Council June 8, under which the company is to give the city 100 feet of water front, and certain areas for park and cemetery purposes; build a dry dock to cost $2,500,000; build a station and other terminal buildings to cost $1,000,000, and a hotel to cost a similar amount, in return for a fixed payment of $15,000 a year as taxes, for 10 years.

The Board of Railway Commissioners has authorized the company to open for traffic its line from Prince Rupert, B.C., easterly for 100 miles, the speed of the trains to be limited to 12 miles an hour.

The route map of a branch line of 3.23 miles from the wharf at Prince Rupert, B.C., northeasterly to Shawatlan's Passage, has been approved by the Minister of Railways.

A contract has been let to Mr. Dow, Seattle, Wash., for the construction of a concrete wharf and warehouse at Vancouver, B.C., for the company's steamship business; and plans are under consideration for the building of a similar wharf and warehouse at Victoria, B.C. (June, pg. 519.)

MAINLY ABOUT PEOPLE.

S. Symons, formerly General Baggage Agent, G.T.R., Montreal, died there June 6, aged 77.

H. C. Stephens, through freight foreman, C.P.R., Owen Sound, Ont., died there, of pneumonia, June 11.

G. T. Bell, Assistant Passenger Traffic Manager, G.T.R., sailed from Montreal, June 10, on a trip to Great Britain.

J. B. Laliberte, Chairman Quebec Harbor Commission, sailed from Quebec, June 2, on his fifty-sixth trip to Europe.

Francis King, M.A., Counsel Dominion Marine Association, has been re-elected Lay Secretary of the Anglican diocese of Ontario.

Sir Thos., Lady and Miss Tait are staying at the Hotel Rembrandt, London, Eng., and hope to sail for Canada some time in July.

Lord Strathcona has given $100,000 towards the fund for the completion of the Medical Faculty building of McGill University, Montreal.

Miss M. L. Armstrong, daughter of L. O. Armstrong, Industrial Commissioner, C.P.R., Montreal, was married there, June 7, to R. L. Grigg.

E. W. DuVal, Superintendent, District 1, Saskatchewan Division, C.P.R., Moose Jaw, was married at Winnipeg, June 5, to Miss S. Campbell.

The engagement is announced of Miss Marion Creelman, daughter of A. R. Creelman, K.C., General Counsel, C.P.R., to E. B. Savage, of Montreal.

W. T. Payne, Manager, C.P.R. Pacific steamship service, Yokohama, who left Japan in Feb. for Great Britain, returned through Canada early in June.

T. McNabb, Master Mechanic, Alberta Ry. and Irrigation Co., Lethbridge, Alta., has been elected Grand Master of the Masonic Grand Lodge of Alberta.

J. J. Hill, Chairman, Great Northern Ry., St. Paul, Minn., who is a native of Rockwood, Ont., has given $1,000 to the Y.M.C.A. building fund at Guelph, Ont.

A. V. Redmond, of the National Transcontinental Railway engineering department, was married, June 28, to Miss E. A. Healy, of Smiths Falls, Ont.

Mrs. F. H. Phippen, wife of the General Counsel, Canadian Northern Ry., left Toronto for England early in June. Mr. Phippen will probably go there in June.

E. Dunn, chief clerk C.P.R. Freight Department, London, Ont., was presented with a suit case by the staff, June 5, on his transfer to Toronto, in a similar capacity.

W. R. Baker, Secretary, C.P.R., and Assistant to the President, has been created a Companion of the Victorian Order, on the occasion of the coronation of King George.

Miss Edna K. Phippen, daughter of F. H. Phippen, General Counsel, Canadian Northern Railway, was married in Toronto, June 1, to Dr. C. R. Gilmour, of Winnipeg.

Mrs. Crawford, who was killed in a runaway accident at Montreal, June 11, was the wife of Capt. A. Crawford, for several years Superintendent, Allan Line, Montreal.

Sir William Whyte,

Vice President, Canadian Pacific Railway.

Sir Henry M. Pellatt was appointed on the official military staff for duty, in London, Eng., on the occasion of the coronation of King George, June 22, and the following day.

F. W. Peters, Assistant to the Vice President, C.P.R., Winnipeg, and T. Harling, steamship agent, Montreal, have been elected fellows of the Royal Colonial Institute, London, Eng.

J. J. Hill, Chairman of the Board, Great Northern Railway, St. Paul, Minn., spent part of June on his yacht Wacouta and salmon fishing in the lower St. Lawrence and adjacent waters.

Miss Pansy Mills, youngest daughter of Jas. Mills, LL.D., member of the Board of Railway Commissioners, was married at Ottawa, June 21, to V. M. Drury, son of Brigadier General Drury, Halifax, N.S.

J. Irwin, who was recently transferred from Saskatoon, Sask., to Dauphin, Man., as Superintendent, District 3, Canadian Northern Ry., was presented with a travelling companion by the staff before leaving Saskatoon.

Miss M. A. Mayer, daughter of A. A. Mayer, Master Mechanic, G.T.R., Montreal, was married there, June 21, to F. G. Osborn, of Westmount. Owing to her mother's recent death, immediate relatives only were present.

C. H. Wilkinson, who died in London, Eng., recently, aged 57, was Managing Director of the British Columbia Development Association, and was interested in the organization and construction of the White Pass and Yukon Ry.

E. O. Reeder, formerly Assistant Chief Engineer of the Chicago, Milwaukee and St. Paul Ry., has been appointed Chief Engineer of the Chicago, Milwaukee and Puget Sound Ry., at Seattle, Wash., succeeding E. J. Pearson, who has resigned.

Jas. Stephenson, formerly Chief Superintendent, G.T.R., Montreal, who retired from active service some years ago, and who has been living at Clevedon, Somerset, Eng., arrived in Canada at the end of May to spend a short holiday in Muskoka.

Miss Alice Shaughnessy, eldest daughter of Sir Thos. G. Shaughnessy, was married to H. W. Beauclerk, at St. Andrews, N.B., June 3. The honeymoon is being spent at Fort Tipperary, Sir Thos. Shaughnessy's summer home at St. Andrews.

Hugh Mann, who died at Acton, Ont., June 15, aged 94, was father of Sir Donald D. Mann, Vice President, Canadian Northern Ry., and also of A. R. Mann, President, Northern Construction Co., which has a number of contracts for the construction of the Canadian Northern Ry.

W. F. Drysdale, who has been appointed Mechanical Engineer, Northern Ry. of Costa Rica, at Limon, is a graduate of McGill University, Montreal, and served his apprenticeship on the G.T.R. For the past seven years he has been in the service of the American Locomotive Co., Schenectady, N.Y.

I. M. Ross, who died recently at Winnipeg, was a locomotive engineer on the C.P.R. in the seventies. In partnership with D. Grant, he carried out a number of construction contracts for the C.P.R. and Great Northern Ry. (U.S.) He drove the first locomotive across the Red River, on a temporary track laid on the ice, on Dec. 23, 1879.

L. S. Berg, President of the New Orleans, Mobile and Chicago R.R., was seriously injured, and his wife was killed, in a railway wreck near Vergas, Minn., on the Minneapolis, St. Paul and Sault Ste. Marie Rd., on June 2. They were en route to Winnipeg in their private car. The train was derailed and three cars, including Mr. Berg's, were burned.

"There may be no basis of fact for the statement that Sir William Whyte is to succeed Lord Strathcona as Canada's High Commissioner in London, but there can be no doubt as to his fitness for such an office. Sir William was born a diplomat, and in the dark days of the C.P.R. in the West his conciliatory methods and manifest sincerity were the greatest assets the company had."—Toronto Globe.

E. H. McHenry, M. Am. Soc. C.E., Vice Presidents in charge of construction and maintenance of the New York, New Haven and Hartford Rd., has also been made Vice President in charge of the same departments of the Boston and Maine Rd. He was at one time Chief Engineer C.P.R.

M. Fennell, who died at Point St. Charles, Montreal, recently, aged 79, started work on the old Lachine Ry., when that was the only railway in

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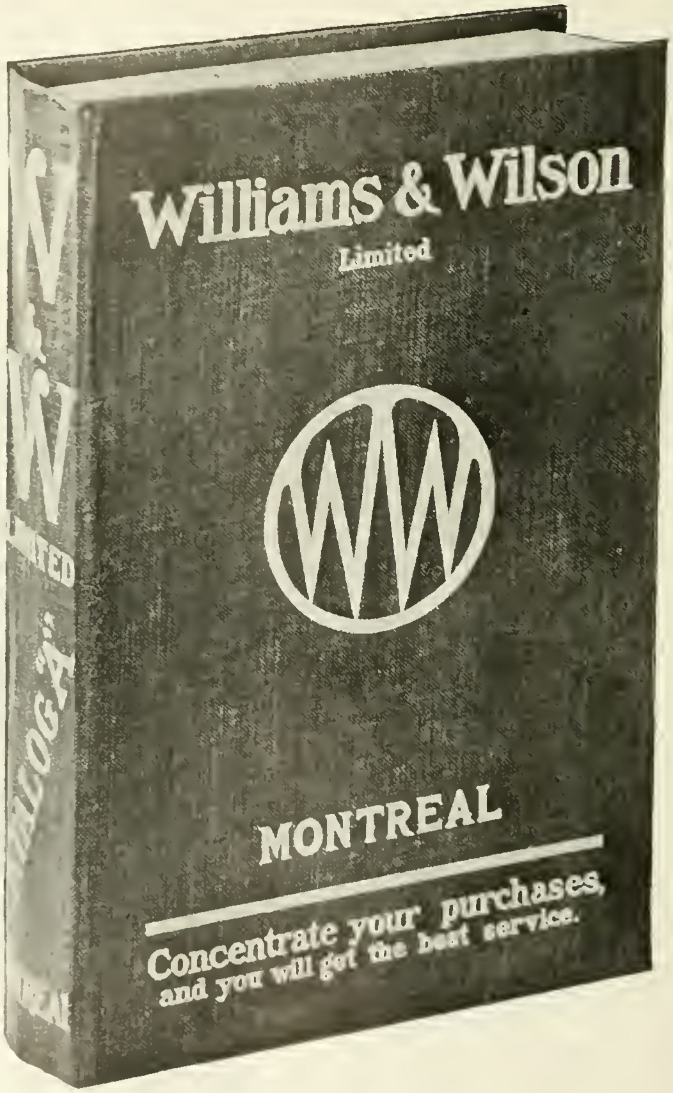
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operation on the island of Montreal. He transferred to the G.T.R., when the first named line was merged in the latter system, and retired from his work as locomotive engineer, three years ago. He was in charge of the locomotive which conveyed the late King Edward to Montreal, about 50 years ago.

Capt. Jas. Bain, who died at Quebec, June 3, aged 75, was connected with the sea from early years, and after retirement from active connection therewith, was for some time superintendent of the ship yard and floating dock at Quebec, owned by the late J. Roche. On the close of this plant owing to the decline of the industry there, he resumed command of a sailing vessel. For some years he has acted as a surveyor and adjuster of claims as regards damaged vessels, and has also assisted at wreck investigations as nautical assessor.

R. W. Drew, who has been appointed Division Freight Agent, Kootenay and Boundary Divisions, C.P.R., Nelson, B.C., was born at Kingston, Ont., Feb. 17, 1874, and entered railway service, May, 1894, since when he has been, to May, 1896, clerk in general office, operator and agent at various points, Kingston and Pembroke Ry.; June, 1896, to Sept., 1898, clerk, C.P.R., Arrowhead, B.C.; Sept., 1898, to Apr., 1903, local agent, C.P.R., Nelson, B.C.; Apr., 1903, to Apr., 1908, chief clerk, General Freight Agent's office, C.P.R., Nelson, B.C.; Apr. to June, 1908, acting General Freight Agent, Kootenay and Boundary Divisions, C.P.R., Nelson, B.C.; June, 1908, to May 30, District and Travelling Freight Agent, Saskatoon, Sask.

F. J. Thompson, who has been appointed Marine Superintendent, Canadian Northern Steamships, Ltd., Montreal, was born in Cheshire, Eng., Aug. 20, 1876, and went to sea, Oct., 1893, serving an apprenticeship on the sailing ship Gracie Beazley, trading between England, Australia, India, Cape of Good Hope and South America. He served two years as second officer of the ship Andora, three years as second and chief officer with the Caledonia Steamship Co., and served 18 months in the Navy, under Admiral Lord Charles Beresford, as Lieutenant Royal Naval Reserve. He subsequently joined the Cunard Line, and served five years, being second officer on the R.M.S. Lusitania, on her maiden voyage, and was later in command of the Uranium Steamship Co.'s s.s. Uranium, running between Halifax and Rotterdam, and in 1910, was transferred to the command of the same company's s.s. Campanello.

D. R. McBain, who has been elected Third Vice President American Railway Master Mechanics Association, was born at Queenston Heights, Ont., Oct. 23, 1861. Entered railway service Oct. 9, 1876, as machinist's apprentice, Canada Southern Ry., later serving as locomotive fireman, locomotive engineer, and travelling engineer. In 1900 he was appointed Master Mechanic, Michigan Central Rd., at Michigan City, Ind. In 1901 he was transferred to St. Thomas, Ont., and afterwards to Jackson, Mich. He was appointed Assistant Superintendent of Motive Power in July, 1906, and in April, 1908, was transferred to the same position on the New York Central and Hudson River Rd., at Albany, N.Y. In the spring of 1910 he was appointed Superintendent of Motive Power of the Lake Erie and Michigan Southern, the Chicago, Indiana and Southern, and the Indiana Harbor Belt lines, which position he still holds.

J. W. Kendrick, M. Am. Soc. C.E., Vice President in charge of operation of the Atchison, Topeka and Santa Fe Ry., has resigned. He is a graduate in civil engineering of the Worcester Polytechnic Institute and entered railway service in 1879 as a rodman on the Yellowstone Division of the Northern Pacific Ry. Since that time he has followed railway work continuously. For five years he was Chief Engineer of the Northern Pacific Ry., after which he entered the operating department as General Manager for the receivers of the same road and of the reorganized road, later becoming Vice President in charge of operation. In 1901 he took charge of the operating department of the Atchison, Topeka and Santa Fe Ry. as Third Vice President, and has remained in charge of that department as Second Vice President and as First Vice President. In December last he was granted six months' leave of absence to regain his health.

James Anderson, who has been elected President, Canadian Street Railway Association, for the current year, and whose portrait appears on the first page of this issue, was born near Ayr, Ont., June 20, 1851. At the age of 19 he entered the old Great Western Ry. Co.'s service, and after serving a few years was appointed a conductor, which position he held until Nov., 1883, when he resigned and went into the grocery business as a member of the firm of Robinson and Anderson, which partnership was continued for 10 years. In June, 1893, he sold his interest to his partner, and associated with John Davis, W. J. Tucker, Dr. Coventry, W. J. Pulling, of Windsor, and the late Robt. Thomson and Wm. Hendrie, of Hamilton, purchased the Sandwich, Windsor and Amherstburg Ry., which was operated under that ownership for eight years. When it passed into the hands of the present owners, the Detroit United Ry. Co., in 1901, he was appointed General Manager, and the road has since been extended to Amherstburg and Tecumseh, and now operates 35 miles of line.

R. R. Jamieson, who died May 30, at New Westminster, B.C., where he had been taken owing to a complete mental and physical breakdown, was born at Westover, Ont., Dec. 12, 1856. He entered railway service in 1873, since when he was, from 1873 to 1874, telegraph operator, Great Western Ry.; 1874 to 1878, telegraph operator, G.T.R.; 1878 to 1880, on construction in Indiana with the Delphi and Chicago Ry.; 1880 to 1883, agent and train dispatcher, Credit Valley Ry.; 1883 to 1884, on construction C.P.R. in North West Territories; 1884 to 1890, train dispatcher, C.P.R., Toronto; 1890 to 1892, Assistant Superintendent, C.P.R., Toronto; 1892 to 1896, Assistant Superintendent, C.P.R., Smiths Falls, Ont.; 1896 to 1902, Superintendent, C.P.R., Farnham, Que.; 1902 to 1903, Superintendent, C.P.R., Cranbrook, B.C.; 1903 to Dec., 1907, General Superintendent, C.P.R., Calgary, Alta.; Dec., 1907, to Oct. 5, 1908, General Superintendent, Central Division, C.P.R., Winnipeg. On retiring from railway service he removed to Calgary and entered private business, being connected with several insurance companies. He served two terms as mayor of the city, during which period he was mainly responsible for the construction and organization of the Municipal St. Ry. there, which was operated by a commission, of which he was Chairman.

Sir William Whyte, who received the honor of knighthood, on the coronation of King George, was born at Charlestown, Fifeshire, Scotland, Sept. 15, 1843. He commenced his railway career with the North British Ry. in 1861, and after two years' service, came to Canada, but it was not until 1865 that he entered railway service here. For a few months he was freight brakesman on the G.T.R. at Cobourg, Ont., being transferred to Toronto in the same year. Since then he has been, to 1867, freight clerk, G.T.R., Toronto; 1867 to 1870, yardmaster, same road, Toronto; 1870 to 1871, night station agent, same road, Toronto; 1871 to 1874, freight and station agent, same road, Stratford, Ont.; 1874 to 1881, in charge of G.T.R. business, London, Ont.; 1881, in charge of freight offices and sheds, same road, Toronto; Nov., 1881, to Sept., 1883, Assistant Superintendent, Central Division, same road; Sept., 1883, to Aug., 1884, General Superintendent, Toronto, Grey and Bruce Ry., and Aug., 1884, on the amalgamation of the T.G. and B. Ry. with the C.P.R., to May, 1885, General Superintendent, Ontario Division, C.P.R.; May, 1885, to 1886, General Superintendent, Eastern and Ontario Divisions, same road; 1886 to May, 1887, General Superintendent, Western Division, same road, Winnipeg; May, 1887, to Apr., 1901. Manager, C.P.R. lines west of Fort William to the Pacific coast; Apr., 1901, to Dec., 1903, Assistant to the President, same road. In Dec., 1903, he was appointed Second Vice President, C.P.R., in general charge of the maintenance and operation of the western lines, and, under the President's direction, of the administration of the company's affairs in the territory between Lake Superior and the Pacific Coast, and in June, 1910, on the abolition of the numerical designations to the titles of Vice President, he became Vice President, with the same duties.

Canadian Northern Pacific Ry. Contracts.

The contract for the building of the 163 mile portion of the line extending from Hope to Kamloops B.C., for which tenders were recently asked, has been let to the Northern Construction Co. and Welch. This is a combination of the N. C. Co., of which A. R. Mann is President and A. C. Mackenzie Vice President, and of Foley, Welch and Stewart. The mileage covers the line from Hope to Boston Bar, about 40 miles; Boston Bar to Lytton, about 28 miles; Lytton to Ashcroft, about 44 miles; and Ashcroft to Kamloops, about 51 miles; and includes the heaviest work on the whole line. It comprises about 20,000 feet of tunnelling and a large number of bridges across the Fraser and the Thompson rivers. The gradient is 0.4%, and the sharpest curvature is 8 degrees.

J. T. Burns, agent, Canadian Northern Ry., at Stratton, Ont., was arrested at Winnipeg, recently, for embezzlement of about $300.

Members of the Canadian Society of Civil Engineers were asked by circular recently if they would participate in a summer excursion, either from Montreal to the Maritime Provinces, or from Montreal to Niagara Falls. Owing to the small number who expressed a willingness to go, the idea has been abandoned.

The C.P.R. has announced a number of prizes in money for farm boys in Saskatchewan, for the best collections of 25 plants of any wheat grown in the province, and later for the best plants grown from seed of the prize lots. The scheme is in connection with the C.P.R. Land Department and the provincial seed fair at Saskatoon.

During April, 11 employes were killed and 14 injured in the course of their work in the operation and construction of Canadian railways. Of the fatalities, three were due to being struck by trains, five to being run over, two to being crushed between cars, and one to scalding, while of the other accidents, two each were due to falls and to collisions, one to coupling cars, four to being run over, and one each to being crushed between cars, struck by crowbar, struck by falling material, to being burned and to being scalded.

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Transition Curves.

By J. Leslie, Roadmaster, National Transcontinental Railway, La Tuque, Que.

I read with much interest the very valuable article in your April issue by Mr. H. J. Wicksteed, C.E., on transition curves. I am not an engineer, but a trackman of wide experience, and I fully concur with all Mr. Wicksteed has said in regard to this very important problem. Having had wide experience in track work, and subsequently further experience as roadmaster on a line pretty well interspersed with curves varying from a 1° up to 6°, and although I was under the impression that I knew all about track work before becoming a roadmaster, I found by riding on fast trains that my knowledge was far from what I had believed it to be. The disagreeable riding of curves induced me to go deeper into this matter, consequently I went to work to make improvements in the alignment of curves. I got the section foremen started to line them with a 62 ft. cord, a very simple method of lining when an engineer is not available. This cord is stretched along the inner side of the outer rail and measurements taken from the centre of the cord to the rail. This measurement in inches means the degree of the curve pretty closely. We succeeded in getting them into fairly good line, but had not got on to the method of easing the points, which was the most important part of all. I had a reverse curve, a 3° and a 4°, but I should not call it a reverse, as there was something like 160 ft. of tangent between. This was at a point where trains ran particularly fast, sometimes as high as 60 miles an hour, and I must say the riding was anything but agreeable. I frequently sent foremen to line this, but all their efforts proved ineffectual; no perceptible improvement was made. I then decided to try my hand at it, and if possible make the condition of the track conform to the speed of the trains, in which I succeeded beyond expectation. With two gangs of section men I started to line it at the point of reverse. I had not proceeded far with the work when I was struck with the idea that I might possibly ease the points with the aid of the 62 ft. cord. If I could line these two curves all round with the cord, why not ease the points with it as well? So I started easing the points, starting at 0 and increasing half an inch on each measurement until the full curvature was reached. The same process was gone through with both curves. The work when completed was highly satisfactory. In making transition curves it simply means lengthening the curve and shortening the tangent, at least it appears so to me. With reference to the two curves here referred to, I may say I took all the tangent out with the exception of a few feet. As previously stated, commencing at 0 and gradually bringing it into full curvature. The elevation was put in accordingly, and at every point was suited to the degree of curvature, or, in other words, was adapted to the degree of curvature. These two curves were lined throughout, the extreme ends as well as the point of reverse. The elevation given was one inch per degree, and I can state emphatically, that a more agreeable and pleasant riding track would be very difficult to find. I rode over it for years afterwards, and it continued to be the same, with some attention of course. This piece of track, fortunately, was better situated than some others I have known in the way of heaving and being thrown about by the action of the frost; it was good at all seasons of the year.

I think this method of lining is much on the same principle as illustrated by Mr. Wicksteed, but of course necessitates much more work when the lining is done in the manner described. The lining can be done more cheaply and quickly when the centres are given by a practical engineer, but an engineer is not always available when it is necessary to do a bit of lining, and the centres given last year cannot be relied upon as being accurate enough to line to this year. As a rule the whole track is surfaced and lined every season, and we cannot expect to get engineers' centre stakes every time we disturb the track. Although the curves may have been lined as near perfection as possible at one time, there are different agencies at work which all combine to get them somewhat out of place. The section foreman, with nothing but his eye to guide him, is one contributory cause. This is a strange assertion to make, but nevertheless it is true. I once knew an experienced foreman who had charge of a big yard, together with two miles of section, and on the section was a 3° curve. He surfaced and lined his curve as well as he knew how, and when it was completed he felt much elated, thinking it was the best piece of track on the system. To make sure that it was all it appeared to be, he went down the line to the first station and boarded a passenger train for the purpose of satisfying himself that the curve in question was all right. The train when reaching this curve had attained a high rate of speed, the descending grade begreat surprise, that the curve in a couple of spots was not anything like the track he thought it was. Judging from the way it rode he thought the defective spots must be very conspicuous or easily detected, but when making an effort at improvement he could not detect the spots which were so very pronounced when riding on the train at a high speed. Now, in this case the defect was certainly in the alignment, and yet his experienced eye could not detect the slight variation. If he had tried the 62 ft. cord it would have pointed out the invisible spots, but this was in the days long before lining with a cord was thought of. Section foremen as a rule take great pains with their surfacing and lining, and what appears to them to be good track may be full of little imperfections. Their knowledge in gening in its favor. He discovered, to his eral of how a train rides over their newly surfaced and lined track is very limited. Even a roadmaster might be deceived in this way, but his position gives him the advantage in knowing where the defective spot is located, and just what is wrong with it.

From the President of the Canadian Pacific Railway.

The following letter from Sir Thomas G. Shaughnessy, K.C.V.O., President of the Canadian Pacific Railway, to our Managing Director, is highly valued by us, as the expression of the opinion of a master mind in the transportation field:—

"THE CANADIAN PACIFIC RAILWAY COMPANY.

**"Office of the President,
Montreal, May 10, 1911.**

"Dear Burrows.—The number of railway officials and employes, and others, who take a keen interest in railway and shipping affairs in our country, has now become so large that the usefulness of your journal is beyond question.

"While I am only able to read it from time to time, I am impressed by the accuracy of your statements and your excellent judgment in the selection of material that is interesting as well as instructive.

"I trust that the Railway and Marine World will continue to prosper.

**"Yours sincerely,
"T. G. SHAUGHNESSY."**

This curve question is a very difficult one to get section foremen educated in in a way which they will understand, and another drawback is the frequent changing of foremen. One foreman may have his curves in good shape, and the man who succeeds him, although taught and watched, is very apt to get them distorted in a short time, and thus it goes on year after year. It happened to be my lot last fall to line some curves in the northern country. They were principally 6° and had rather abrupt points. The centres were given by an engineer who made nice transition curves, and who, in my opinion, thoroughly understood his business (I cannot recall his name just now.) In all my experience I never lined curves with as good satisfaction. He set up a permanent stake 2 x 6 ins. at zero, indicating the point of compound curve, and another stake of the same dimension at the point of regular curve, or the point where the compound curve ceased, indicating the point of regular curve, together with degree of curve and elevation required. The distance from the p.c.c. to the regular curve for a 6° was something like 300 ft. They termed this spiralling, but call it what you like, it all amounts to the same thing when properly done.

I feel grateful to Mr. Wicksteed for explaining matters in the way he did, and every effort should be made to carry out what he has explained, and all the attention possible should be given to it. Speed demands this.

◆

C.P.R. Mechanical Officials' Meeting.

The annual meeting of C.P.R. mechanical officials was held in Winnipeg recently, H. H. Vaughan, Assistant to the Vice President, Montreal, presiding. There were also present: Grant Hall, Superintendent of Motive Power and Car Department, Western Lines; R. W. Burnett, General Master Car Builder, Montreal; C. H. Temple, Assistant Superintendent Motive Power, Western Lines; C. Kyle, General Master Mechanic, Eastern Lines; H. Osborne, Superintendent Angus locomotive shops; W. E. Woodhouse, Superintendent Winnipeg locomotive shops; G. I. Evans, Mechanical Engineer; Allan Dixon, General Foreman, West Toronto shops, and Master Mechanics Ord, Mills, Reid, Preston, Short, Pyne and Phipps.

The meeting occupied three days, one of these being devoted to the inspection of the company's Winnipeg shops and a visit to the Canadian Northern Ry.'s new shops at Winnipeg. The subjects taken up were connected with the rules and regulations of the maintenance of cars and locomotives, and discussions as to the methods of locomotive and shop practice.

◆

The G.T.R. offered for competition among its junior employes, or the sons of employed under 21, four free scholarships in the Faculty of Applied Science at McGill University, Montreal, at the June matriculation examinations.

The Board of Railway Commissioners has issued a circular stating that the requirements of circular 64, Apr. 3, 1911, respecting the filing of applications covering all highway and railway crossings before approval of locations or diversions under secs. 159 and 167 of the Railway Act have been modified to the extent that unopened road allowances are exempted, but the applicants must furnish a declaration that the highways shown in their applications cover all those opened or used.

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Railway Route Plans Approved.

The Minister of Railways has approved of the following railway route plans since Aug. 6, 1910:—

ALBERTA CENTRAL RY., Oct. 6, 1910.—From Moose Jaw to sec 24, tp. 35, range 23 west of 3rd meridian; about 500 miles.

Jan. 14, 1911.—Rocky Mountain House to Yellowhead Pass, about 180 miles;

ALGOMA CENTRAL AND HUDSON BAY RY., Apr. 11, 1911.—Hawk Lake to Hobon, about 30 miles.

May 10, 1911.—Magpie Branch, about 9 miles.

BRITISH COLUMBIA SOUTHERN RY., Jan. 14, 1911.—Waldo branch. About 12 miles.

BURRARD INLET TUNNEL & BRIDGE CO.—Oct., 18, 1910.—From Eburne northerly across the Second Narrows, thence easterly to Deep Cove and westerly to Horse Shoe Bay, and from a point in Vancouver under the First Narrows to the north shore connecting with the westerly part of said railway. 32 miles.

CALGARY AND EDMONTON RY., Dec. 7, 1910,—Lacombe easterly branch. From tp. 36, r. 12, west of 4th mer., to tp. 34, range 23, west of 3rd mer. 121.9 miles.

CANADIAN NORTHERN ALBERTA RY., Nov. 8, 1910.—Revised line from sec. 26, tp. 53, r, 7, west of 5th meridian to sec. 18, tp. 45, r. 3, west of 6th meridian, (Yellowhead Pass), about 200 miles.

CANADIAN NORTHERN BRANCH LINES CO., May 10, 1911.—From Grosse Isle, on the Oak Point branch, northerly, 36 miles.

CANADIAN NORTHERN ONTARIO RY., Oct. 6, 1910.—Ottawa-Toronto line. Two small revisions between Shannonville and Portland, about 10 and 35 miles.

Nov. 21, 1910.—Entrance to Toronto, Dec. 7, 1910.—Revision between Sydenham and Perth Road, about 8 miles. about four miles.

Jan. 30, 1911. — Revision between Perth Road and Portland; about 25 miles.

Oct. 6, 1910.—Udney and Matchedash Bay line. Revision between Orillia and point near Sparrow Lake; about 16 miles.

Jan. 14, 1911.—Sudbury-Port Arthur. Revised location from Nipigon northerly, 98 miles.

Apr. 19, 1911.—Through counties of York, Peel and Halton, about 35 miles.

May 5, 1911.—Two small revisions between Deseronto and Sydenham, about 5 and 1½ miles.

May 23, 1911.—Revision between Nipigon and Port Arthur, 73.9 miles.

May 10, 1911.—Line through counties of Wentworth and Halton, including Hamilton city, about 30 miles.

CANADIAN NORTHERN RY., Aug. 9, 1910. —Stewartwyn to Rocky Mountain House, from Stewartwyn westerly to between ranges 24 and 25, tps, 39, west of 4th meridian, about 36 miles.

Oct. 6, 1910.—Springfield to sec. 35, tp. 13, range 6, east of principal meridian, Man., about 25 miles.

Oct. 6, 1910.—Prince Albert Battleford extension. Revision between sec. 23, tp. 46, r. 6, and sec. 9, tp. 44, r. 8; about 25 miles.

Oct. 13, 1910.—Regina to Moose Jaw, about 45 miles.

Nov. 8, 1910.—Oak Point extension, Man. Revision between sec.. 13, tp. 29, r. 8, and sec. 35, tp. 32, r. 9, west of principal meridian; about 25 miles.

Nov. 8, 1910.—Saskatoon-Calgary line, revision of route through tps. 26-25, ranges 23-25, .west of 4th meridian, about 12 miles.

Nov. 8, 1910.—Davidson westerly. From east line of tp. 26, r. 7, to tp. 30, r. 9, west of 3rd mer. About 34 miles.

Jan. 14. 1911.—Revision of route through tp. 28 and ranges 4-6, west of 4th mer., about 12 miles.

Jan. 30, 1911.—Battleford westerly, about 60 miles.

Jan. 14, 1911.—From sec. 8, tp. 15, r. 12, to sec. 18, tp. 13, r. 23, west of 2nd mer., about 70 miles.

Jan. 14, 1911.—Moose Jaw south-easterly. Revision between Moose Jaw and sec. 36, tp. 13. range 24, west of 2nd mer., about 30 miles.

Jan. 30. 1911.—From sec. 18, tp. 13, r. 23, west of 2nd mer., to sec. 1, tp. 11, r. 5, west of 3rd mer., about 70 miles.

Apr. 11, 1911.—Gravelburg to tp. 22, range 17, west of 3rd meridian, about 150 miles.

Apr. 11, 1911.—Stewartwyn southeasterly to tp. 31, range 13, west of 4th meridian, about 50 miles.

Apr. 11, 1911.—Conquest, Sask., southwesterly, about 65 miles.

May 10, 1911.—Revision of part of Davidson, Sask., westerly line, about 20 miles.

May 10, 1911.—Wassewa to Deloraine, Man., about 15 miles.

May 10, 1911.—Revision of line from Vonda, Sask., northeasterly, about 35 miles.

May 19, 1911.—Revision of Prince Albert-Battleford line between tp. 44, range 8, and Donhulm, in tp. 42, range 14, west of 3rd meridian, about 40 miles.

May 31, 1911.—Entrance to union station, Winnipeg, about 0.305 miles.

CANADIAN PACIFIC RY., Oct. 6, 1910.—Hamiota to Birtle, Man., 32.7 miles.

Oct. 6, 1910.—Regina, Saskatoon and North Saskatchewan branch. Revision at Prince Albert; about 12 miles.

Dec. 7, 1911.—Brooks to Kirkcaldy, Alta., 63 miles.

Dec. 7, 1911.—Suffield to Kipp, Alberta; 91 miles.

Dec. 17, 1910.—Moose Jaw southwesterly, from Moose Jaw to sec. 25, tp. 8, r. 6, west of 3rd meridian; about 80 miles.

Jan. 14.—1911.—Stonewall branch. Revision of extension from Arbourg to Fisher Bay, 38 miles.

Jan. 14, 1911.—Swift Current to Brooks, from sec. 32, tp. 19, range 19, west of 3rd meridian to Brooks, 150 miles.

Jan. 14, 1911.—Weyburn-Lethbridge branch. Revision between sec. 3, tp. 5, range 6, and sec. 19, tp. 6, r. 8, west of 4th meridian, 24.4 miles.

Jan. 14. 1911.—Main line grade reduction between Austin and Melbourne, Man., 14 miles.

Jan. 14. 1911.—Moose Jaw northwesterly. From Outlook to sec. 12, tp. 33, range 22, west of 3rd meridian; about 92 miles.

Apr. 11, 1911.—Revision of line from Suffield to Kipp, Alta., 94.2 miles.

Apr. 11, 1911.—Swift Current to Brooks, 78.38 miles.

Apr. 11, 1911.—From Swift Current southeasterly to tp. 11, range 8, west 3rd meridian, about 50 miles.

Apr. 12, 1911.—From latter point to Gravelburg, about 20 miles.

May 10, 1911.—Revision of Swift Current southeasterly line, 45 miles.

May 10, 1911.—Revision of Langdon northerly branch, 62.1 miles.

See also Calgary and Edmonton Ry., Georgian Bay and Seaboard Ry., Kootenay Central Ry., South Ontario Pacific Ry.

GEORGIAN BAY AND SEABOARD RY., Nov. 8, 1910.—Lindsay to Bethany Village, about 18 miles.

Apr. 11, 1911.—From Bethany Village to connection with Ontario and Quebec Ry., about 1½ miles.

G.T. PACIFIC BRANCH LINES CO., Oct. 6, 1910.—Regina-Boundary branch. Revision of line from Regina southerly for about 12 miles.

Jan. 14, 1911.—Revision of line from sec. 21, tp. 7, range 10, west of 2nd meridian, to the boundary, about 65 miles.

Oct. 6, 1910.—Biggar westerly to sec. 30, tp. 36, r. 21, west of 3rd meridian; about 45 miles.

Jan. 14. 1911.—Revision and extension of same from sec. 34, tp. 36, r. 21, to sec. 1, tp. 37, r. 1, 4th meridian, about 46 miles.

Oct. 13, 1910.—Regina to Moose Jaw, about 45 miles.

Nov. 8, 1910.—Amended general location of entrance to Prince Albert, about 10 miles.

Jan. 14, 1911.—Calgary branch. Revision from sec. 2, tp. 28, r. 26, to sec. 8, tp. 26, r. 27, west of 4th mer., about 15 miles.

March 3, 1911.—Crossing of Bow River at Calgary.

Jan. 30, 1911.—Battleford westerly, about 80 miles.

Apr. 11, 1911.—Revision of Regina-Boundary branch between Frobisher and the Boundary, about 12 miles.

Apr. 12, 1911.—From Moose Jaw, northwesterly to tp. 21, range 4, west of 3rd meridian, 50 miles.

May 10, 1911.—Revision of line from Biggar to 4th meridian, about 100 miles.

May 10, 1911.—Edson northerly to the Pacific Northern and Omenica Ry., about 50 miles.

May 10, 1911.—Entrance to Calgary, about 3 miles.

GRAND TRUNK PACIFIC RAILWAY, May 13, 1911.—From G.T.P. wharf at Prince Rupert, northeasterly to Shawatlan's Passage, 3.23 miles.

GRAND TRUNK RY., Nov. 8, 1910.—Lindsay and Port Hope line. Deviations between Reaboro and Rice Lake summit, about 28 miles.

HUDSON BAY AND PACIFIC RY., Jan. 14, 1911.—Prince Albert north-easterly, 74 miles.

INTERNATIONAL BRIDGE AND TERMINAL CO., May 16, 1911.—Proposed connection between Canadian Northern Ry., Fort Frances, Ont., and International Bridge and Terminal Co., International Falls, Minn., about 800 ft.

KOOTENAY AND ALBERTA RY., Feb. 1, 1911.—Pincher to Beaver Creek, about 15 miles.

KOOTENAY CENTRAL RY., Dec. 7, 1910. —Revision between mileage 62.5 and 93.9.

LACHINE, JACQUES CARTIER AND MAISONNEUVE RAILWAY, May 10, 1911.—St. Catharine St., Montreal, to Jacques Cartier Jct., about 7 miles.

MANITOULIN AND NORTH SHORE RY. Jan. 14, 1911.—Sudbury to Little Current, 85.89 miles.

NAKUSP AND SLOCAN RY., Apr. 11, 1911, —Three Forks to Whitewater, B.C., 7.6 miles.

NIAGARA, WELLAND AND LAKE ERIE RY., Apr. 21, 1911.—Line on East Main St. and South Main St., Welland, Ont., about 5,000 feet.

QUEBEC AND SAGUENAY RY., Oct. 6, 1910.—Saguenay River to St. Margaret's Bay, River St. Lawrence, about 300 miles.

SOUTH ONTARIO PACIFIC RY., Feb. 28, 1911.—Guelph Jct. to Hamilton, 16 miles.

Apr. 6, 1911.—Guelph Junction to Hamilton, 16 miles.

SOUTHERN CENTRAL PACIFIC RY., Feb. 17, 1911,—For 20 miles from Burmis, Alta.

SOUTHERN CENTRAL PACIFIC RY., Apr. 11, 1911.—From 1,000 ft. north of the junction of Racehorse Creek with the North Fork of the Old Man River to near ¼ corner on the east side of sec. 17, tp. 10, range 2, west of 5th meridian, 10 miles.

TORONTO EASTERN RY., Oct. 6, 1910.—Oshawa to Lindsay, Ont., about 36 miles, and Port Hope to Peterborough, about 30 miles.

Oct. 13, 1910.—From west boundary of Pickering tp. to Cobourg, Ont., about 55 miles.

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July Birthdays.

Many happy returns of the day to—

J. H. Black, Superintendent, Temiskaming and Northern Ontario Ry., North Bay, Ont., born near Smiths Falls, Ont., July 8, 1874.

M. S. Blaiklock, Engineer Maintenance of Way, G.T.R., Montreal, born at Quebec, July 19, 1859.

D. E. Blair, Superintendent of Rolling Stock, Montreal St. Ry., Montreal, born at St. Thomas de Montmagny, Que., July 25, 1877.

D. C. Coleman, Superintendent Car Service, Western Lines, C.P.R., Winnipeg, born at Carleton Place, Ont., July 9, 1879.

Geo. Collins, General Manager, Central Ontario Ry., Trenton, Ont., born at Kingston, Ont., July 20, 1860.

D. D'E. Cooper, Canadian Freight Agent, Lehigh Valley Rd., Toronto, born at Buffalo, N.Y., July 8, 1862.

John Corbett, General Foreign Freight Agent, C.P.R., Montreal, born in Lanarkshire, Scotland, July 19, 1863.

E. J. Coyle, ex-Assistant General Passenger Agent, C.P.R., Vancouver, B.C., born at Stayner, Ont., July 23, 1870.

S. E. Dewey, Travelling Freight Agent, G.T.R., New York City, born at Beckenham, Kent, Eng., July 4, 1879.

J. F. Dolan, City Passenger and Ticket Agent, Richelieu and Ontario Navigation Co., Montreal, and President Canadian Ticket Agents' Association, born at Kingston, Ont., July 1, 1868.

F. C. Foy, Canadian Passenger Agent, New York Central Lines, Toronto, born there, July 5, 1881.

J. H. Gordon, Travelling Freight Agent, C.P.R., Winnipeg, born there, July 21, 1883.

W. R. Haldane, ex-Division Freight Agent, Kootenay and Boundary District, C.P.R., Nelson, B.C., born at Galashiels, Scotland, July 6, 1867.

J. H. Hanna, ex-Division Freight Agent, G.T.R. at Hamilton, Ont., now at Calgary, Alta., born at London, Ont., July 27, 1867.

R. K. Harris, Resident Engineer, C.P.R. Orford Branch, Kingsbury, Que., born at Maitland, Ont., July 20, 1866.

A. D. Huff, Division Freight Agent, G.T.R., Ottawa, born at Chatham, Ont., July 17, 1866.

C. A. Jaques, General Manager, Merchants Montreal Steamship Line, Montreal and Lake Erie Steamship Co., and Montreal and Great Lakes Steamship Co., Montreal, born there July 15, 1849.

J. P. Kavanagh, Local Manager, Ogdensburg Coal and Towing Co., Montreal, born at Plattsburg, N.Y., July 17, 1862.

R. G. McNeillie, District Passenger Agent, C.P.R., Calgary, Alta., born at Lindsay, Ont., July 1, 1883.

T. J. Maguire, Accountant, Quebec Central Ry., Sherbrooke, Que., born at Quebec, July 31, 1860.

R. E. Perry, Assistant General Freight Agent and Chief of Tariff Bureau, Intercolonial Ry., Montreal, born at Drayton, Ont., July 5, 1876.

W. S. Poole, Mechanical Superintendent, Prince Edward Island Ry., Charlottetown, P.E.I., born at Burslem, Eng., July 20, 1844.

R. Preston, Master Mechanic, Manitoba Division, C.P.R., Winnipeg, born at Toronto, July 28, 1863.

J. E. Quick, General Baggage Agent, G.T.R. and G.T.P.R., Toronto, born at Richmond, Ontario Co., N.Y., July 10, 1851.

G. G. Ruel, Chief Solicitor, Canadian Northern Ry., Toronto, born at St. John, N.B., July 5, 1866.

P. E. Ryan, Secretary, National Transcontinental Railway Commission, Ottawa, born there July 26, 1876.

Geo. Stephen, General Freight Agent, Canadian Northern Ry., Winnipeg, born at Montreal, July 5, 1876.

R. F. Struthers, Chief Inspector of Time Service, C.P.R., Winnipeg, born at Stratford, Ont., July 31, 1879.

Sir Thos. Tait, ex-Chairman, Board of Railway Commissioners for Victoria, Australia, born at Melbourne, Que., July 24, 1864.

H. T. Wilgress, Agent C.P.R. Pacific Steamship Service, Yokohama, Japan, born at Lachine, Que., July 29, 1857.

Canadian Northern Ry. Earnings, Etc.

Gross earnings, working expenses and net profits from July 1,, 1910, with increases over, or decreases from, those of 1909-10:

	Earnings.	Expenses.	Net. Earnings	Net Increase.
July	$1,225,100	$876,900	$348,200	118,600
Aug.	1,093,000	830,000	263,000	58,600
Sept.	1,279,000	898,700	381,200	69,700
Oct.	1,627,800	1,047,300	580,500	99,800
Nov.	1,565,400	1,006,500	558,900	11,500
Dec.	1,255,400	896,200	359,200	24,800
Jan.	822,600	720,900	101,700	20,800
Feb.	803,100	667,300	135,800	4,300
Mar.	1,270,600	915,800	354,800	82,500
Apr.	1,345,400	984,300	361,100	29,900
	$12,288,300	$8,843,900	$3.444,400	$478,900
Inc.	$1,920,600	$1,441,700	$478,900	....

Approximate gross earnings for May $1,445,600, and for two weeks ended June 14, $634,100, against $1,224,900, and $556,600, for same periods 1910.

C.P.R. Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases over 1909-10, from July 1, 1910:

	Earnings.	Expenses.	Net Profits.	Net Increase or Decrease
July	$8,869,214.32	5,384,594.73	3,484,619.50	1,004,748.86+
Aug.	9,255,331.67	5,563,659.34	3,691,672.33	727,614.46+
Sept.	9,315,213.67	5,403,614.03	3,911,599.64	479,710.47+
Oct.	10,229,370.77	5,724,210.25	4,505,160.52	118,863.33+
Nov.	9,413,238.22	5,676,115.96	3,737,122.26	44,784,31+
Dec.	8,705,283.99	5,418,750.10	3,286,533.87	171,110.79−
Jan.	5,740,206.34	5,084,088.47	656,117.87	660,478.52−
Feb.	6,375,576.57	5,230,869.06	1,144,707.51	342,311.73−
Mar.	8,880,640.59	5,644,074.05	3,156,566.54	445,393.15+
Apr.	8,672,024 54	5,515,049,93	3,156,974.61	175,863 48+
	$85,376,100.68	$54,645,025.92	$30,731,074.76	$2,165,298.60+
Inc.	$7,572,542.47	$5,407,243.87	$2,165,298.60	....

Approximate gross earnings for May $9,111,000, and for two weeks ended June 14, $4,128,000 against $8,215,000 and $3,743,000 for same periods 1910

Duluth, South Shore and Atlantic Ry.—Operating revenue for April, $236.707.91; operating expenses, $179.271.86; net revenue, $57,436.05, against $279,388.81 operating revenue; $192,689 12 operating expenses; $86.699.69 net revenue or April, 1910. Aggregate operating income for 10 months ended Apr. 30, $2,590,504.79; operating expenses, $1.850,706.05; net revenue, $73x 798.74, against $2,701,054.37 aggregate operating revenue; $1,841,618.91 operating expenses; $8g9,435.46 net revenue for same period 1909-10. Approximate gross earnings for May, $279,655, and for two weeks ended June 14, $132,694, against $309,595 and $131,489 for same periods 1910.

Mineral Range Rd.—Operating revenue for April, $54,445.31; operating expenses, $49,720.02; net revenue, $4,725.29, against $59,738.28 operating revenue; $61,139.06 operating expenses; $1,400.78 net expenses or Apr., 1910. Aggregate operating revenue for 10 months ended Apr. 30, $623,485.02; operating expenses, $597,205.51; net revenue, $26,279.51, against $699,862.55 aggregate operating revenue; $614,549.04 operating expenses; $85,313.51 net revenue for same period 1909-10. Approximate gross earnings for May, $60,758, and for two weeks ended June 14, $27,638, against $62,390, and $29 283 for same periods 1910.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—Operating revenue for April, $986,613.31; expenses and taxes, $775,742.22; operating income, $210,871.09, against $1,091,150.95 operating revenue; $745,477.11 expenses and taxes; $345,673.84 operating income for Apr., 1910. Aggregate operating revenue for 10 months ended Apr. 30 $10,958,589.52; expenses and taxes, $7,606,763.36; operating income, $3,351,826.16, against $12 872,762.68 aggregate operating revenue; $7 381 065.99 expenses and taxes; $5,491,696.69 operating income for same period 1909-10. Approximate earnings for May, $1 670,942, and for two weeks ended June 14, $846,756, against $1,814,356 and $906,616 for same periods 1910.

Chicago Division.—Operating revenue for Apr., $662,124.89; expenses and taxes, $586,623.99; operating income, $75 500.90, against $812 423 13 operating revenue; $559,611.19 expenses and taxes; $252 811.94 operating income for Apr., 1910. Aggregate operating revenue for 10 months ended Apr. 30, $7,442,248.24; expenses and taxes, $5,865,912.01; operating income, $1,576,336.23, against $7,334,602.02 aggregate operating revenue; $5,114,061.09 expenses and taxes; $2,220,540.93 operating income for same period 1909 10.

Grand Trunk Ry. Earnings, Expenses, Etc.

The following figures show the earnings of the G.T.R., C.A.R., G.T. Western Ry. and D.G.H. and M. Ry. separately, for Apr., as compared with Apr., 1910:—

Grand Trunk Railway.

	1911.	1910.
Earnings	$2,864,400	$2,684,600
Expenses	1,973,900	1,891,300
Net earnings	$ 890,500	$ 793,300

Canada Atlantic Railway.

	1911.	1910.
Earnings	$ 164,300	$ 158,400
Expenses	153,600	138,300
Net earnings	$ 10,700	$ 20,100

Grand Trunk Western Railway.

	1911.	1910.
Earnings	$ 558,300	$ 569,600
Expenses	461,000	438,600
Net earnings	$ 97,300	$ 131,000

Detroit, Grand Haven and Milwaukee Ry.

	1911.	1910.
Earnings	$ 160,300	$ 154,700
Expenses	149,700	136,600
Net earnings	$ 10,600	$ 18,100

Approximate gross earnings for May, $3,942,055, against $3,731,820 for May, 1910.

Traffic Receipts of the System.

	1911.	1910.	Increase.
Grand Trunk Ry.	£2,831.630	£2,683.966	£147.664
Can. Atlantic Ry.	163.740	156.003	7.737
G.T. Western Ry.	552.424	536,731	15.693
D.G.H. & M. Ry.	168,008	159,840	8,168
Totals	£3,715.802	£3,536,540	£179.262

Accidents at Highway Crossings.

The Board of Railway Commissioners passed order 13847, May 30, as follows: —Re sec. 275 of the Railway Act, and the amending acts 8-9 Edward VII., chap. 32, sec. 13, and 9-10 Edward VII., chap. 50, sec. 15; and re sec. 292 of the Railway, and circular 60, dated Mar. 7, 1911, regarding reports of accidents at highway crossings, issued under the Board's direction. Upon the application of the Michigan Central Rd., and to more clearly define the meaning of the said circular, it is ordered that where an accident has happened subsequent to Jan. 1, 1905, or hereafter happens, at a highway crossing, by a moving train causing bodily injury or death to a person using such crossing, and the company immediately protects such crossing by a watchman, such protection will be regarded as satisfactory to the Board until the company is able to make report and the Board has the accident investigated and the crossing inspected, or until further order.

◆

Rapid Transportation of Silk.—The C.P.R. steamship Empress of India brought to Vancouver on its last voyage from Yokohama, a cargo of silk valued at over $700,000, consigned to firms in New York, and the long journey across the Pacific Ocean and the North American continent was made in the record time of 17 days 1 hour. The Empress of India left Yokohama May 9, and arrived at Vancouver on the afternoon of May 20. There a special train was in waiting, and as soon as the silk could be unloaded from the boat it was reloaded on the train and rushed eastward. No more stops than were absolutely necessary were made, with the result that the train arrived at New York in five hours better time than the best previous time made by silk shipments from Yokohama. The silk weighed 340 tons, and it took nine cars to transport it.

The C.P.R. has opened emigration offices at Dalny and Harbin, in Manchuria, for the purpose of securing settlers from Russian Siberia for Canada.

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Telephone Dispatching on C. P. R.

Figures supplied by W. J. Camp, Electrical Engineer, C.P.R. Telegraph Department, shows that the C.P.R. leads all the railways in America in point of the number of miles of its lines equipped with telephone train dispatching circuits. The C.P.R. has 3,955 miles of its lines equipped with the new system, which is 71 miles more than its nearest competitor—the Atchison, Topeka and Santa Fe Ry. If the C.P.R.'s subsidiary lines are taken into consideration, the Canadian road has an even greater lead on its United States rivals, as the Minneapolis, St. Paul and Sault Ste. Marie Ry. has 190 miles of its lines equipped with the system, which, added to the figures of the C.P.R. proper, gives a total of 4,140 miles.

The C.P.R.'s showing is a gratifying one when it is remembered that on the two sides of the border there are over 150 railways which are using the system on a part at least of their lines. Of course the greater part of these lines have not displayed the same aggressiveness as the C.P.R. in extending the system, but that is not to be wondered at when the huge expenditures involved in changing from the telegraph to the telephone are considered. As can be readily understood, the cost of making the change varies with different roads, but, commonly speaking, the telephone system of train dispatching is between seven and eight times more expensive to install and operate than the old system of dispatching trains by telegraph. However, the extra expense is fully justified by the greater efficiency of the telephone service.

The physical differences in the two systems are the use of two copper wires for the telephone system in place of one iron wire, and selective calling apparatus in place of the telegraph key. The operating differences are that orders are transmitted by speech instead of by Morse code, and stations are called selectively and distinctly by an electric bell in lieu of the telegraph signal. The orders are issued by the dispatchers orally, word by word, names of places and numbers being spelled letter by letter to insure accuracy. The dispatcher writes the order in his book and he dictates it to the operators, thus regulating his speed to such a rate as to enable the order to be readily copied by the receiving operators. The sending of the proper calling combination from the dispatcher's office is accomplished by an individual calling key, and each station as called by the selector gives an automatic answer back. This gives the official making the call positive assurance that the call has been received at the desired station, the distinctive combination of the station being repeated to the dispatcher.

A telephone train dispatcher on the C.P.R.

At present 20 gangs are stringing wires, etc., in connection with this system on the C.P.R., and within the last few weeks orders for 260 selectors have been placed for use on new circuits. Of these new selectors, 192 will be placed in the company's eastern lines, and the remainder on its western lines.

Altogether in Canada and the United States there are 46,077 miles of the system in use, of which the C.P.R. and the other Canadian roads operate 4,360. The leading railways in this respect are as given in the next column.

	Miles.
Canadian Pacific	3,955
Atchison, Topeka and Santa Fe	3,884
Great Northern	3,881
Illinois Central	2,550
Chicago, Burlington, Quincy	2,353
Chicago, Rock Island and Pacific	2,249
Pennsylvania Ry.	2.137
Chicago, Milwaukee and St Paul	1,770
Southern Pacific	1.377
Northern Pacific	1,190
Norfolk and Western	1,060
Lake Shore and Michigan Southern	958
St. Louis and San Francisco	835
Union Pacific	815
Chicago and North Western	743
Michigan Central	714
Lehigh Valley	643
Lake Erie and Western	571
N. Y. Central	521

Following are particulars of the telephone dispatching circuits on the C.P.R. on May 1:

Terminal Points.	Despatchers' Location	Miles Crkt.	No. in use	Selectors spare	Kind of Equipment	Date put in service
St. John-Vanceboro	St. John	90	17	3	Gill and N. E.	* 1911
Vanceboro-Megantic	Brownville Jct.	216	26	3	" "	* 1911
Megantic-Farnham	Farnham	132	20	4	" "	March 31, 1911
Newport-Montreal	"	120	28	4	" "	June 2, 1908
Quebec-Montreal	Montreal	174	29	0	" "	May 14, 1911
Brockville-Ottawa and Chalk River	Smiths Falls	172	27	3	" "	* 1911
Smith's Falls-Havelock	Havelock	109	14	1	" "	Wire all up 1911
Havelock-Toronto	Toronto	101	18	0	" "	" * 1911
Toronto-London	London	115	22	2	" "	March 1, 1911
St. Thomas-Pt. Burwell						
St. Marys-Windsor	"	227	36	2	" "	June 1, 1911
Toronto-Muskoka	Toronto	132	30	2	" "	May 11, 1911
Muskoka-S Ste. Marie	Sudbury	312	29	7	" "	Dec. 27, 1910
Chalk River-Cartier	"	232	27	4	" "	" "
Mattawa-Temiskaming	Orders relayed at Mattawa	47	0	0	† Bridging Magn'tos	Feb. 1, 1911
Cartier-White River	White River	269	19	3	Gill and N. E.	Oct. 1, 1910
White River-Fort William	"	251	17	5	" "	Sept. 1. 1909
Winnipeg-Brandon	Winnipeg	133	23	3	" "	Aug. 17, 1909
Brandon-Broadview	Brandon	132	14	6	" "	Nov. 5, 1910
Broadview-Moosejaw	Moosejaw	135	18	4	Sandwich & Kellogg	Oct. 20, 1910
Moosejaw-Swift Current	"	111	15	5	Gill and N. E.	Nov. 27, 1910
S. Current-Medicine Hat	Medicine Hat	147	14	6	" Kellogg	Oct. 1, 1909
Medicine Hat-Calgary	"	180	18	3	" "	* 1911
Calgary-Field	Calgary	136	16	3	" "	* 1911
Field-Revelstroke	Revelstroke	130	15	1	" "	* 1911
Revelstroke-Kamloops	"	129	10	2	" "	* 1911
Total		3932	502	76		
	Bridging sets		4			
			506 Stations.			

* Under construction.

† May be combined in one circuit.

◆

Wire Crossing Over Railways.

The Board of Railway Commissioners passed order 13732, May 26, as follows: —Whereas, by sec. 7 of the act to amend the Railway Act, assented to May 19, 1911, sec. 4 of chap. 50 of the statutes of 1910, is repealed, and the following is enacted as sub-section 5 of sec. 246 of the principal Act:—

"5. An order of the Board shall not be required in cases in which wires or other conductors for the transmission of electrical energy are to be erected or maintained over or under a railway, or over or under wires or other conductors, for the transmission of electrical energy with the consent of the railway company or the company owning or controlling such last mentioned wires or conductors, in accordance with any general regulations, plans or specifications adopted or approved by the Board for such purposes."

Therefore it is ordered that the "Standard Conditions and Specifications for Wire Crossings," approved by order 8392, Oct. 7, 1909, be adopted and approved pursuant to the said amendment. And it is further ordered that order 10637, dated May 17, 1910, be rescinded.

◆

The following circular has been issued to C.P.R. employes concerned, by C. Murphy, Superintendent of Transportation:— "Engines and cars when being attached to trains carrying passengers must be brought to a dead stop 6 to 10 ft. from the train to which they are to be coupled, and then, upon proper signal, the coupling made carefully, to avoid shock."

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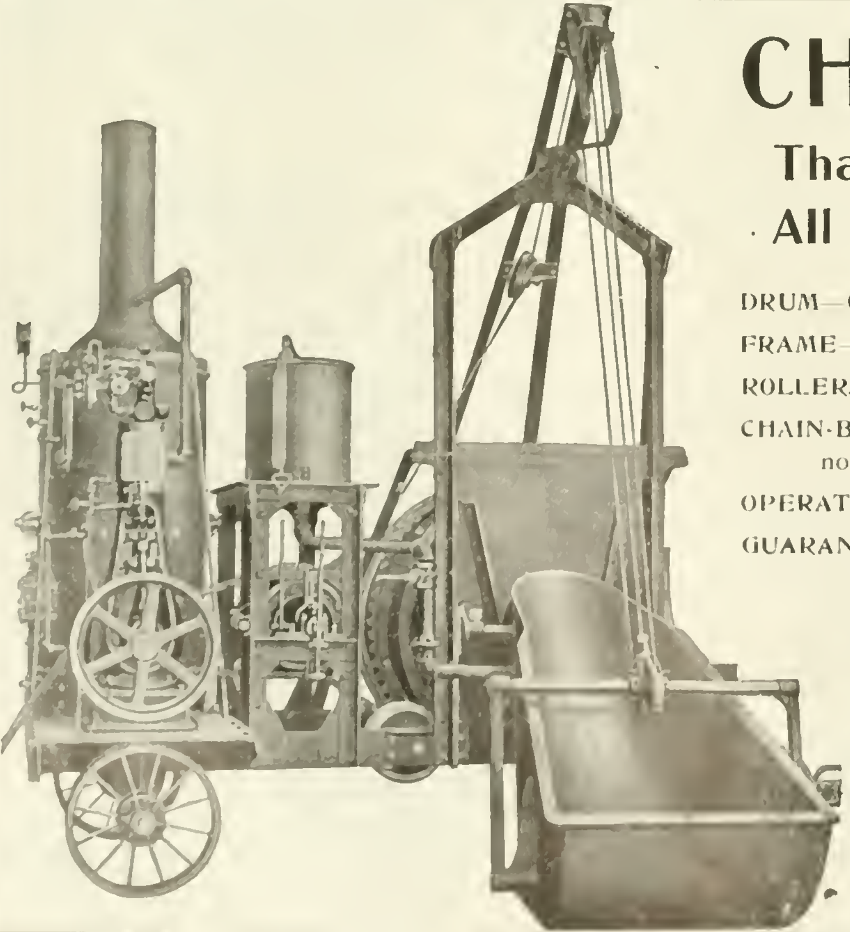

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Dominion Equipment and Supply Company
Canadian Sales Agents,
45-46 Canada Life Bldg. WINNIPEG, MAN.

Intercolonial Railway Roundhouse at Campbellton

In the disastrous fire which destroyed practically the whole of Campbellton, N.B., in July, 1910, the I.C.R. roundhouse was wiped out. Steps were immediately taken to restore the engine house facilities at this point, the actual work of construction being commenced on Sept. 13, 1910, and finished complete, as shown in the accompanying illustrations, early in January of this year. The building is laid out for 28 engine stalls, although the actual capacity is reduced to 25 engines because of the space of one stall being allotted to an entrance from the west, and the space equivalent to two stalls at the end of the building being devoted to the foreman's office, locker rooms and a machine and forge shop.

The radius of the inner circle is 89 ft. 25⅝ ins. to the centre of the inside wall columns, and the distance between the inside and the outside walls is 85 ft. 6 ins. The roof is straight with a slope outwardly of ½ in. to the foot and is supported between walls by three concentric rows of 10 by 10 in. wooden columns set in cast iron shoes on concrete footings. The foundations of both walls and the linings of the engine pits are likewise of concrete.

The machine shop occupies the space in one corner of the building, is approximately 42 by 48 ft. in size, and is equipped with such forge and machine shop tools as are necessary to properly handle running repairs at isolated points. The space adjacent to the machine shop is divided into a locker room, the foreman's office and a larger room well adapted for use as a stock and tool room. On the second floor, above these quarters, are stored heavy repair parts, these being handled by means of a hand-operated elevator. An industrial track runs around the building just inside the outer wall, greatly facilitating the handling of materials and parts between the pits and the shop and store room. The engine wheel drop-pits are located adjacent to the shop. The car and tender wheel drop-pit is to be changed from the location shown in the plan, next to the engine wheel pits, to pit 28 at the opposite end of the building. A turntable in the industrial track is provided opposite this pit, so as to allow of a closer approach with the industrial trucks.

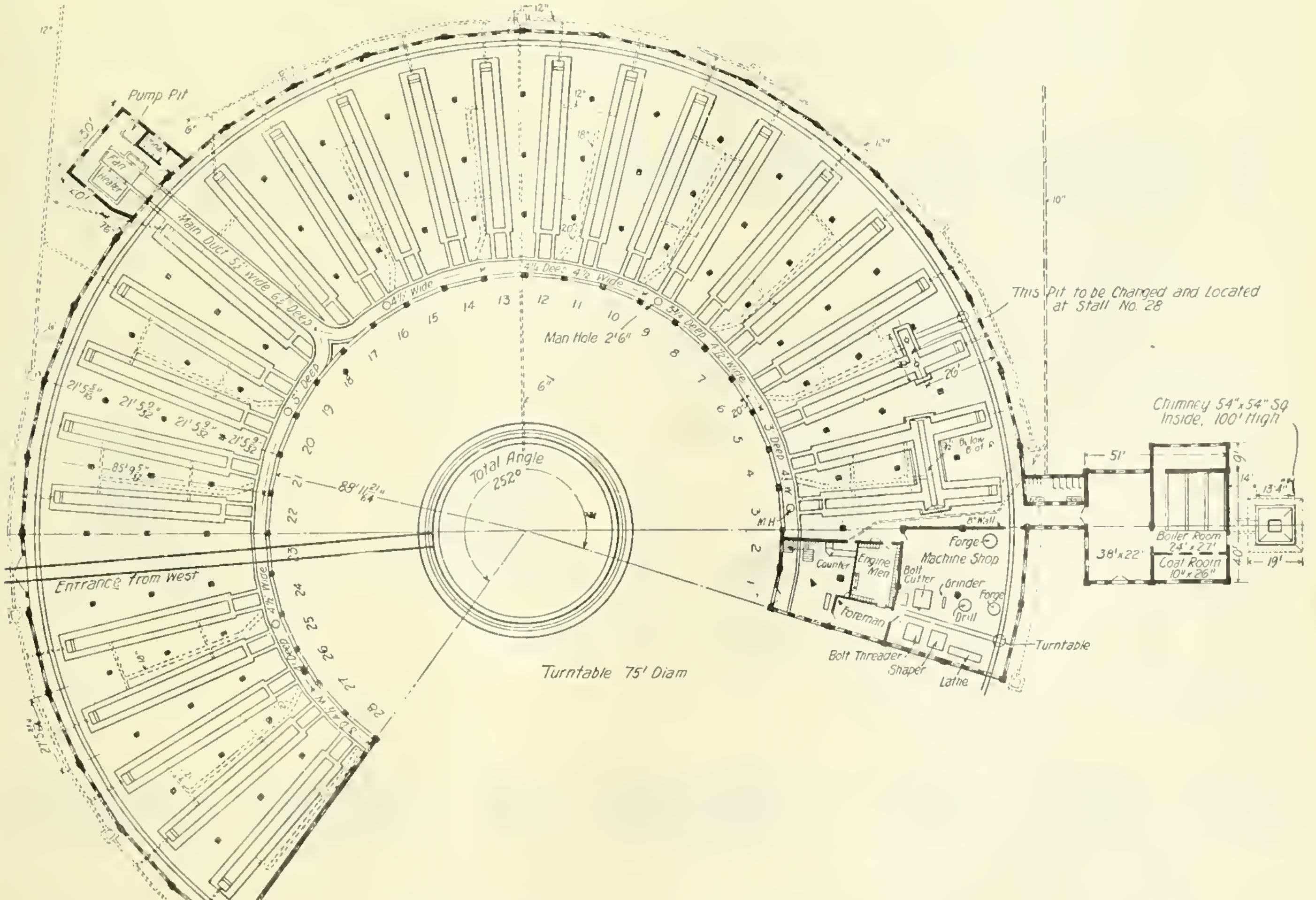
The power house is a 40 by 51 ft. structure connected to the roundhouse proper by an enclosed passageway which is under the same roof with the general lavatory. The boiler room occupies a space 24 by 27 ft. in size, opposite which is the coal storage, 10 by 26 ft. in size. A chimney 4½ by 4½ ft. inside and 100 ft. high is erected on its own foundation, convenient to the boiler room, to which it is connected by means of an underground passage. The engine room is 38 by 22 ft. in size. The power house equipment consists of three one-hundred h.p. Robb-Mumford boilers, one 10 by 16 by 9 by 12 in. compound duplex steam pump for the main water supply and for fire protection, one 12 by 7 by 12 in. duplex end packed plunger pump for the boiler washout system, one 8 by 4 by 6 in. duplex end packed boiler feed pump, one air compressor unit supplemented by a small emergency compressor, and one 60 k.w. 250-volt Crocker Wheeler d.c. generator directly driven by a Robb Engineering Co.'s engine, for general lighting purposes.

Lighting is effected by means of incandescent tungsten and arc lamps, the circuits for which are arranged in four divisions and are placed in conduits. Each of the four groups may be controlled from junction boxes located on the walls, so that, in case of derangement in any one group, repairs may be made without shutting off the entire system. Each line of columns carries three drop lights in addition to a hand lamp on an extension cord to be taken at will into and around the engines standing on the pits.

A hot-air heating system is provided, the main distributing duct being of concrete and located just inside the inner wall of the building, the foundation of the wall, in fact, forming one side of the duct. The fan room is about 30 ft. square and is located in a lean-to outside the building opposite pit 18. A main air duct, of concrete, 5½ by 6½ ft. in size, joins the fan room with the distributing duct previously mentioned. The branches from the distributing duct to the pits are made of 20 and 12 in. terra cotta pipe, each pit having two air outlets. Manholes are provided at intervals to permit access to the main duct for cleaning purposes. Drainage is provided for by means of a sewer laid just outside the building, into which a 6 in. connection from the end of each of the pits is made. An independent 10 in. drain is provided for the lavatories, both systems discharging into lower ground some distance away.

Ventilation is had through the smoke jacks and through four 4 by 4 ft. louvre ventilators on the roof near the inside wall. The smoke jacks are of cast iron. A 75 ft. turntable operated by a compressed air tractor is installed.

A boiler washout system has been installed involving the use of a 12 by 7 by



Intercolonial Railway Roundhouse at Campbellton, N.B.

CROSSEN CAR MFG. COMPANY
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MODERN HIGH-CLASS
ROLLING STOCK
Passenger, Freight and Electric Railway
Ruggles' Rotary Snow Plows

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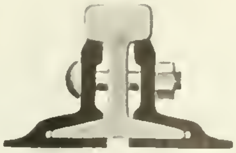
ADDITIONAL SAFETY AND ECONOMY IN
TRACK MAINTENANCE

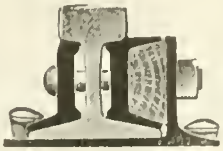
has been proved by the use of Continuous, Weber and Wolhaupter base-supported rail joints—after fifteen (15) years' service, having a record of over **50,000 miles in use**—the extent of which is evidence of their excellence. Made in Canada.

HIGHEST AWARDS
Paris, 1900;
Buffalo, 1901; St. Louis, 1904



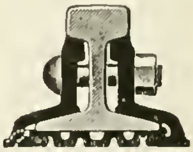
Continuous Joint

Over
50,000
miles
in use



Weber Joint

Rolled
from Best
Quality
Steel



Wolhaupter Joint

Catalogues at Agencies
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San Francisco, Cal.
Boston, Mass.
Portland, Ore.
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Chicago, Ill.
Denver, Colo.
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THE RAIL JOINT COMPANY OF CANADA, LIMITED
OFFICES: BOARD OF TRADE BLDG., MONTREAL, CAN.

Makers of Base Supported Rail Joints for Standard and Special Rail Sections, also Girder, Step or Compromise, Frog and Switch, and Insulating Rail Joints, protected by Patents.

12 duplex steam pump controlled by a pressure regulator, a piping system with outlets between each pair of pits, and a blowoff pipe system with similar outlets. The pump and blowoff pipe are connected to a hot well located at the rear of the building, to which all exhausts and other drips are taken from all parts of the plant. When a boiler is washed out the water it contains is blown into the hot well through the blowoff tank pipe, the pump is started, and being controlled by the aforementioned regulator, is stopped when the pressure in the system reaches 90 lbs., and immediately starts up as the pressure decreases, due to opening any of the outlets throughout the building. In this way a boiler can be washed out and refilled with warm water. The blowoff pipe is laid in a 10 by 10 in. spruce conduit passing around the house between the ends of the pits and the industrial track. The hot and cold water, the steam and the air pipes are suspended from the roof timbers.

For the foregoing information and the illustrations we are indebted to T. C. Burpee, Engineer of Maintenance of Way, I.C.R., under whose direction the work was devised and carried out.—Railway and Engineering Review.

◆

Railway Lands Patented.—Letters patent were issued during April, covering railway lands in Manitoba, Saskatchewan. Alberta and British Columbia, as follows:—

	Acres.
Canadian Northern Ry.	198.20
Canadian Pacific Ry.	94.794
Grand Trunk Pacific Ry.	900.32
Manitoba and North-Western Ry.	12.27
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	4,001.66
Total	5,207.244

J. F. Philp, City Passenger Agent, Grand Trunk Pacific Railway, Edmonton, Alberta, in remitting his subscription, writes:—"The Railway and Marine World is always a welcome visitor and keeps one in touch with the railway happenings that are of most interest."

Toronto Hamilton and Buffalo Ry.

The report of the directors as to the operations of the line for the year ended Dec. 31, 1910, as presented to the shareholders at the annual meeting in Toronto, June 6, shows that the company operates 79.88 miles of main line and 3.79 miles of branches. The capital stock outstanding consists of 25,000 shares of the par value of $2,500,000, and there is also outstanding $4,280,000 of bonds. During the financial year there was expended for additions and betterments, on account of cost of road and equipment, $180,460.11, of which a net sum of $92,700.49 was for new rolling stock.

The revenue from rail operation was $1,145,769.10, against $883,356.36 in 1909, while the expenses were $631,285.18, against $523,609.64. Taxes accrued amounted to $4,700, against $5,363.08; the income from other sources amounted to $42,869.23, against $36,149.25, making the gross corporate income $552,653.15. against $390,532.89. The total deductions from this, including the interest on funded and other indebtedness, was $292,297.42, against $230,805.45, leaving a surplus for the year of $260,355.73, against $159,722.44 for 1909. The increase of $262,412.74 in operating revenue was largely due to an increase in tonnage of nearly all commodities handled. the largest increase being in manufactured articles. The increase of $107,675.54 in operating expenses was mainly due to the increased volume of traffic handled. The deductions from corporate income show an increase of $61,491.97, mainly due to the line of equipment.

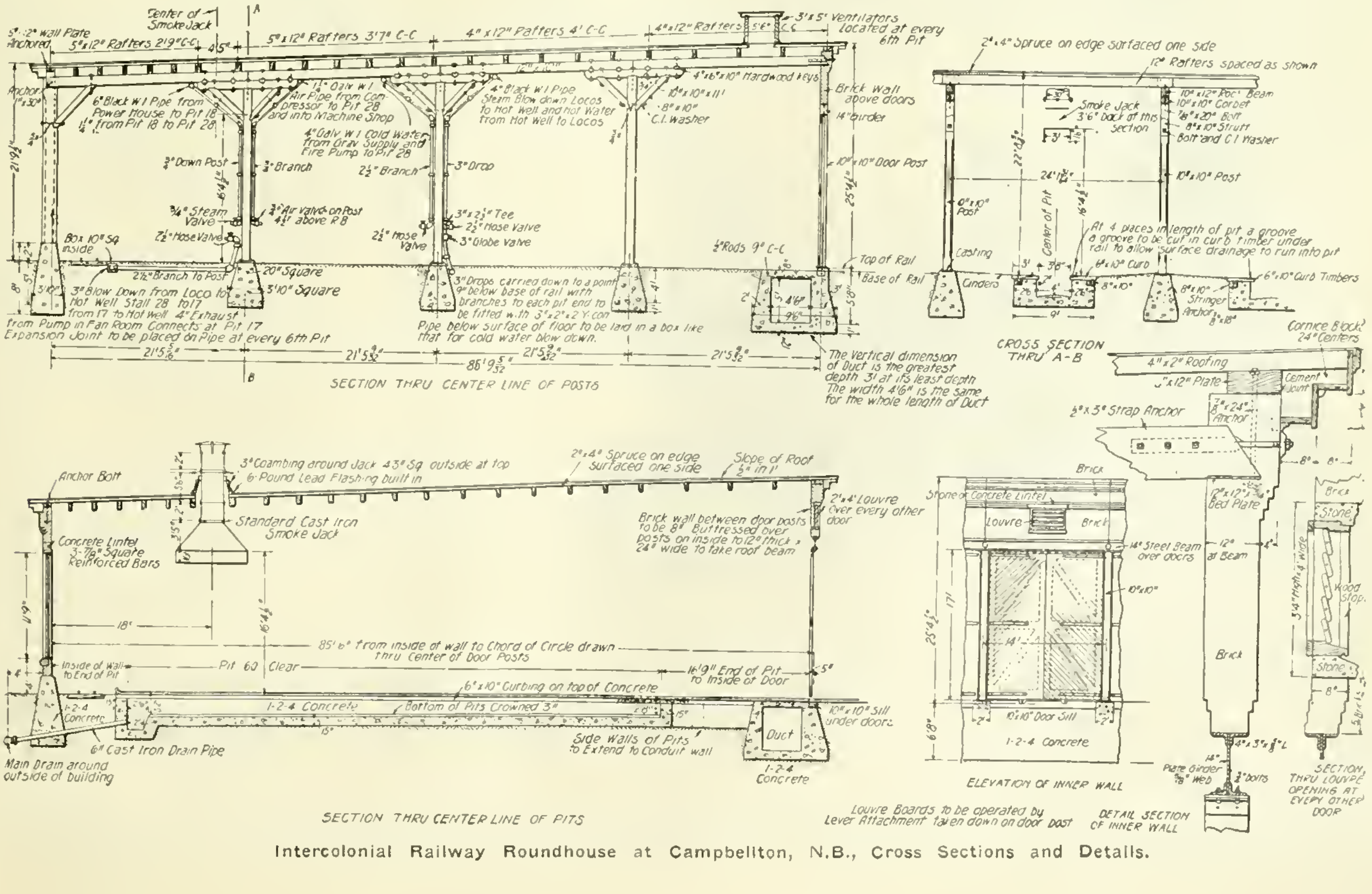
The condensed balance sheet shows liabilities of $8,384,784.54, including $2,500,000 of common stock, $3,280,000 of first mortgage bonds, $1,000,000 of second mortgage bonds, $323,100 Government and municipal aid received, $535,195.58 working liabilities, $17,650.87 of accrued but not due interest, etc., $219,202.42 of appropriated surplus, and $509,635.67 of balance of profit and loss. The total assets include, in addition to cash in hand, etc., $7,291,712.41 value of road and equipment June 30, 1907, and $497,433.83 road and equipment since that date.

The statistics show:—Locomotive mileage: revenue 752,520, non revenue 20,887; train mileage: revenue 469,969, non-revenue 9,291; car mileage: freight, 4,581,219; passenger, 1,111,449; special, 4,035; total, 5,696,703; non-revenue, 129,053. Revenue freight carried, 1,829,356 tons, against 1,319,663 tons; company's freight carried, 10,998 tons; tons of freight carried one mile, 71,617,255; tons of freight carried per mile of line, 855,949; average distance of haul; average number of tons per train mile, 380; average number of tons per loaded car mile, 23.74; average number of loaded cars per train mile, 15.31; average number of empty cars per train mile, 7.99; average amount received for each ton of freight, $0.42; average revenue per ton per mile, 1.080 cents; average revenue per mile of road, $9,214.30; average revenue per train mile. Interline passengers carried, 334,251; local passengers carried, 94,016; commodation passengers carried, 91,255; total revenue passengers carried, 519,522; passengers carried one mile, 15,232,249; average distance carried, 29.32 miles; average per train mile, 54.23 miles; average per car mile, 16.50; average amount received from each passenger, $0.58; average revenue per passenger per mile, 1.989 cents.

The following directors were re-elected for the current year:—W. C. Brown, W. H. Newman, C. F. Fox, New York; H. B. Ledyard, Detroit, Mich.; Sir Thos G. Shaughnessy, D. McNicoll, Montreal; E. B. Osler, N. Kingsmill, W. P. Torrance, W. L. Scott, Toronto.

◆

J. Madill. C.P.R. ticket agent, Windsor, Ont., was entertained to dinner there recently on his leaving for Edmonton, Alta., where he has been appointed City Agent. Canadian Northern Ry.


Center of Smoke Jack
A
5"x12" Wall Plate Anchored
5"x12" Rafters 2'9" C-C
4'5"
5"x12" Rafters 3'7" C-C
4"x12" Rafters 4' C-C
4"x12" Rafters 5'6" C-C
3'x5' Ventilators located at every 6th Pit
Anchor 1"x30"
6" Black W I Pipe from Power House to Pit 18 1¼" from Pit 18 to Pit 28
1½" Galv W I Air Pipe from Compressor to Pit 28 and into Machine Shop
4" Galv W I Cold Water from Grav Supply and Fire Pump to Pit 28
4" Black W I Pipe Steam Blow down Locos to Hot Well and Hot Water from Hot Well to Locos
4"x6"x10" Hardwood Keys
10"x10"x11'
8"x10" C.I. washer
Brick Wall above doors
14" Girder
10"x10" Door Post
21'9¾"
25'4½"
¾" Down Post
¾" Branch
2½" Branch
3" Drop
¾" Steam Valve
¾" Air Valve on Post 4½' above R B
2½" Hose Valve
3"x2½" Tee
2½" Hose Valve
3" Globe Valve
Box 10" Sq inside
2½" Branch to Post
20" Square
3'10" Square
½" Rods 9" C-C
Top of Rail
Base of Rail
3" Blow Down from Loco to Hot Well Stall 28 to 17 from 17 to Hot Well 4" Exhaust from Pump in Fan Room Connects at Pit 17
Expansion Joint to be placed on Pipe at every 6th Pit
3" Drops carried down to a point 9" below base of rail with branches to each pit end to be fitted with 3"x2"x2 Y con
Pipe below surface of floor to be laid in a box like that for cold water blow down.
The vertical dimension of Duct is the greatest depth 3' at its least depth The width 4'6" is the same for the whole length of Duct
21'5 5/16"
21'5 9/32"
85'9 5/32"
B
SECTION THRU CENTER LINE OF POSTS
2"x4" Spruce on edge surfaced one side
12" Rafters spaced as shown
Smoke Jack 3'6" back of this section
10"x12" Roof Beam
10"x10" Corbel
⅞"x20" Bolt
8"x10" Strutt
Bolt and C I Washer
10"x10" Post
24'1¼"
22'0½"
Center of Pit
At 4 places in length of pit a groove a groove to be cut in curb timber under rail to allow surface drainage to run into pit
6"x10" Curb
6"x10" Curb Timbers
Casting
Cinders
8"x10"
8"x10" Stringer
Anchor 8"x18"
9'
CROSS SECTION THRU A-B
Anchor Bolt
3" Coambing around Jack 43" Sq outside at top
6 Pound Lead Flashing built in
2"x4" Spruce on edge surfaced one side
Slope of Roof ½" in 1'
Standard Cast Iron Smoke Jack
Concrete Lintel 3-⅞" Square Reinforced Bars
2'x4' Louvre Over every other door
Brick wall between door posts to be 8" Buttressed over posts on inside to 12" thick x 24" wide to take roof beam
18'
16'4½"
85'6" from inside of wall to Chord of Circle drawn thru Center of Door Posts
Inside of Wall to End of Pit
Pit 60 Clear
16'9" End of Pit to Inside of Door
6"x10" Curbing on top of Concrete
1-2-4 Concrete
Bottom of Pits Crowned 3"
10"x10" Sill under doors
Duct
6" Cast Iron Drain Pipe
Main Drain around outside of building
Side Walls of Pits to Extend to Conduit wall
1-2-4 Concrete
SECTION THRU CENTER LINE OF PITS
Cornice Block 24" Centers
4"x2" Roofing
Cement Joint
½"x5" Strap Anchor
⅞"x24" Anchor
Brick
Stone or Concrete Lintel
Louvre
14" Steel Beam over doors
12" at Beam
12"x12"x¾" Bed Plate
10"x10"
17'
14'
25'4½"
6'8"
10"x10" Door Sill
1-2-4 Concrete
ELEVATION OF INNER WALL
Louvre Boards to be operated by Lever Attachment taken down on door post
4"x3"x⅜" L
14" Plate Girder ⅜" web
⅞" bolts
DETAIL SECTION OF INNER WALL
Stone
Wood Stop
3'4" High x 4' Wide
SECTION THRU LOUVRE OPENING AT EVERY OTHER DOOR

Intercolonial Railway Roundhouse at Campbellton, N.B., Cross Sections and Details.

Why the C. P. R. North Toronto Route to Ottawa and Montreal is the Logical One

The train leaves as follows:

Leave North Parkdale - - -	9.15 p.m.
Leave West Toronto - - -	9.30 p.m.
Arrive North Toronto - - -	9.40 p.m.
Leave North Toronto - - -	10.00 p.m.

Arrive Ottawa, 6.50 a.m.
Arrive Montreal 7.00 a.m.
Daily except Sunday.
Will Stop at Westmount.

¶ The residents of Toronto are adjacent to either North Parkdale, West Toronto or North Toronto stations, same being easily accessible and closer to residential districts.

¶ The North Toronto route is over an hour faster and overcomes a long hill climb for the train out of Toronto, obviating any inconvenience and ensuring early arrival at Montreal and Ottawa.

¶ The roadbed has been improved till it is unexcelled in Canada.

¶ The equipment is "Canadian Pacific Standard," a synonym for the "best" and attentive porters, non-obsequious, ensure efficient service. .

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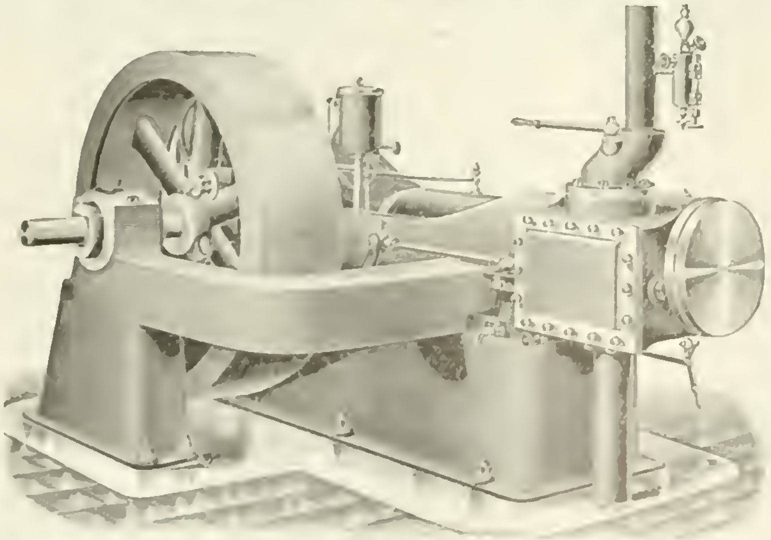
Toronto City Office, 16 King St. East

North Toronto Station King Edward Hotel West Toronto Station

BEARINGS IN LINE



In sizes up to 125 horse power, the outboard bearing of our side crank engines is connected to the frame by a wing, keeping the bearings perfectly in line.

These engines are built on the interchangeable system and duplicate parts are kept in stock, ready for shipment on receipt of order.

They have our latest improved governor and oiling system and are strictly high class in every respect.

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LIMITED
AMHERST, N.S.

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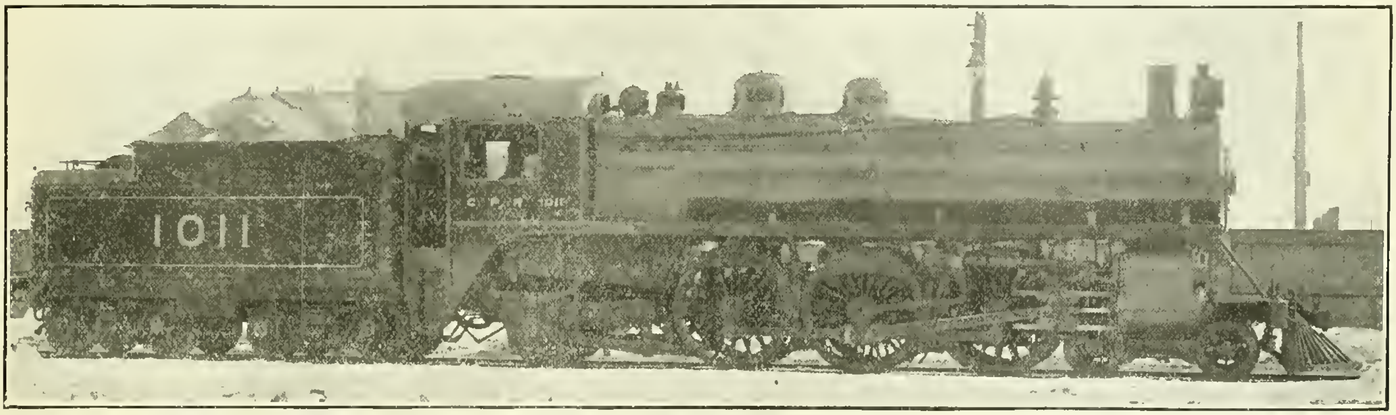
Traders Bank Building, Toronto - Wm. McKay, "
Union Bank Building, Winnipeg - W. F. Porter, "
Grain Exchange Bldg. Calgary - J. F. Porter "

Improved Cabs and Diaphragms for C. P. R. Locomotives.

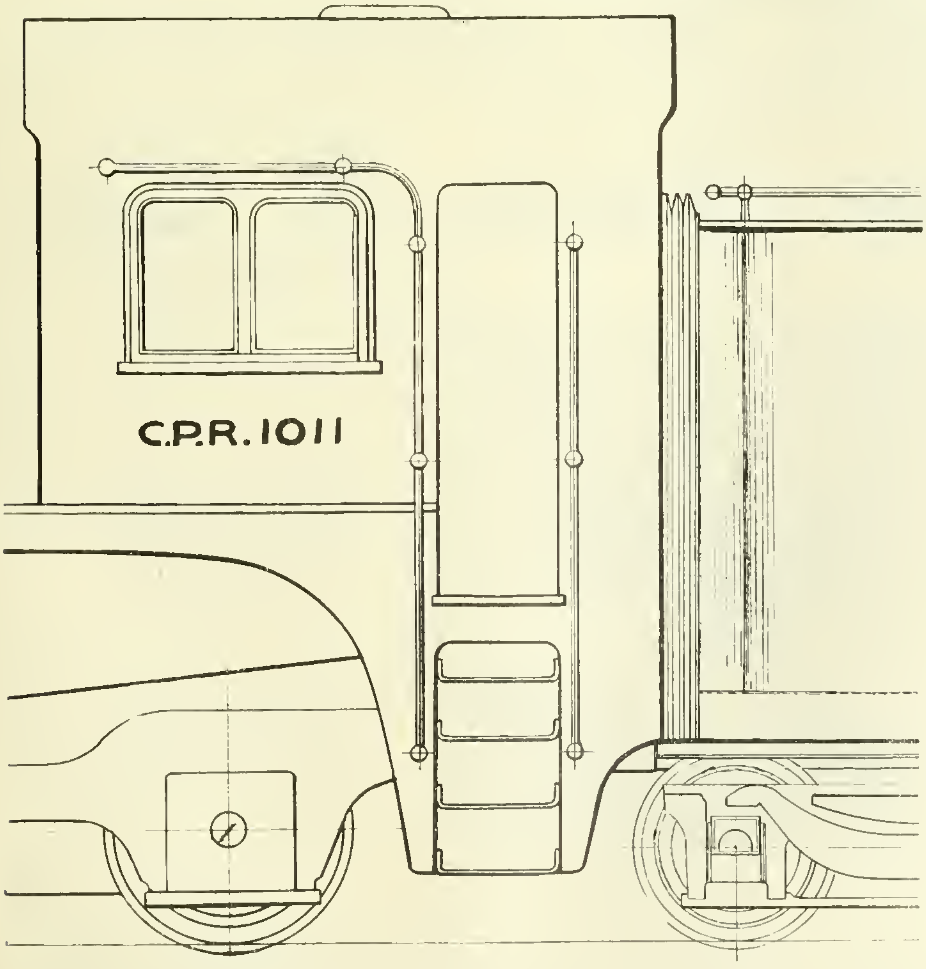
An innovation which will be much appreciated by locomotive firemen is being tested by the C.P.R. on some of its new locomotives. Hitherto the locomotives and tenders have been separated, with only canvas curtains between to protect the men from stormy weather. In the change which is being tested the principal change from the standard type of cab is that the back has been extended to within eight inches of the front of the tender tank. The tender step has been moved forward and placed on the engine directly underneath the cab door. A wall has been run across the back of the cab, and a diaphragm connects it to the front of the tender in a similar manner to a passenger car. This allows of an entirely closed cab, as with the old type, dust and snow could be drawn in through the back curtains. The new form of cab and the diaphragm were applied experimentally to locomotive 1011, which was turned out at Angus shops, Montreal, in March. The driver, who is running this locomotive, likes the arrangement very much. The innovation is also being tried on four more passenger locomotives of the same type, and if the experiment proves satisfactory it is likely to be generally adopted by the company.

The accompanying half tone illustration gives the general appearance of the cab, but does not clearly show the diaphragm, which is, however, shown in the accompanying line reproduction of the preliminary drawing. We are indebted to G. I. Evans, Mechanical Engineer C.P.R., for the particulars and for the photograph and drawing.

Lacey R. Johnson, Assistant Superintendent of Motive Power, C.P.R., Montreal, writes in reference to the improved cab and a coal pusher arrangement on the tender:—The cab was converted from an ordinary cab with a peak extending over the tender, and is so arranged that the peak of the cab extends a sufficient distance from the front of the tender to allow of the diaphragm being applied to take up the movement of the engine and tender. The diaphragm is of the standard passenger car type, one end of which is bolted to the tender, and the other end to the friction plate, which is kept up by means of coil springs and slide on cab. Above the diaphragm is a deflector which extends from cab to coal space to prevent the coal getting into the folds of the diaphragm. This design of cab affords much more room and is more accessible from the side of the engine, owing to the door opening directly into the cab.



Improvel Cab for Canadian Pacific Railway Locomotives.



Diaphragm Between C.P.R Locomotive and Tender.

The engine is equipped with deeply flanged running boards made of ¼ in. plate rivetted to the running boards by means of angle irons, which gives three beneficial results. First, it makes the running board rigid; second, it gives a better hold for the piping, which is hidden from view; third, it conforms to the general design of the tender.

The coal pusher is located at the rear section of coal space on top of the tank, being hinged at the front, and is operated by means of air cylinder which is located in centre of tank. A piston rod is connected to the rear end of the pusher, the object of which is to force the coal close up to the coal gate. This is very beneficial, especially in going up heavy inclines, where the coal would not otherwise slide down to where it can be easily got at by the fireman.

◆

Zinc Electro for Boiler Scale.—The C.P.R. is experimenting with a process on two or three feed water heaters to see if it will avoid the corrosion which has been experienced from this class of apparatus, and it is also being tried on a boiler to see if it has any effect on the formation of scale. The process comprises a zinc-electro carried on the inside of the boiler, but in place of depending on the action of the zinc alone, a very small current is passed between the zinc-electro and the boiler in order to maintain the desired parity. We are advised that the process has not been in use long enough to furnish any definite results, but that it appears to give considerable promise.

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EFFICIENCY!
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EFFICIENCY
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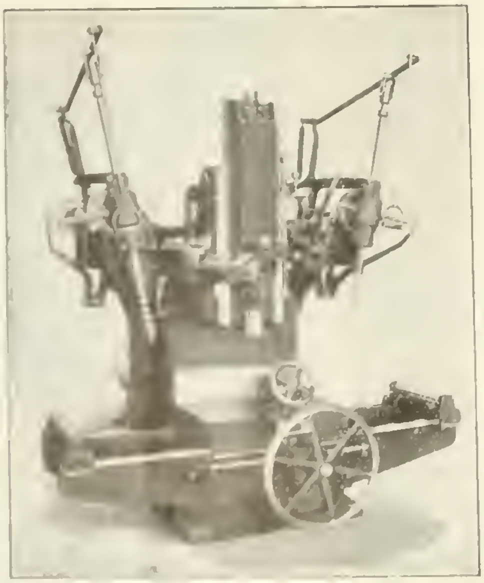

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TORONTO, CANADA, JULY, 1911.

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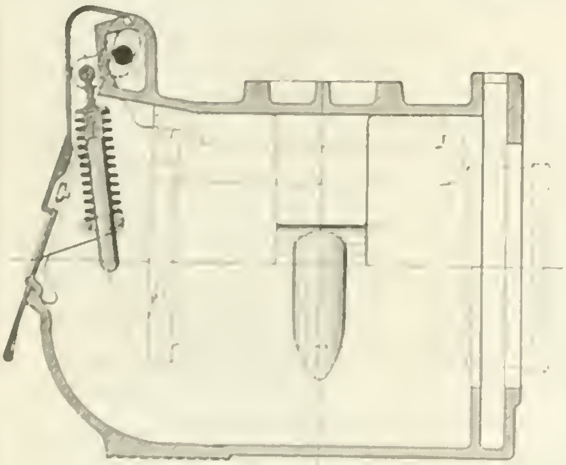

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Albert and Moncton Ry.—The Dominion Parliament has incorporated a company with this title to build a railway from Hillsboro, via Albert Lines to Moncton, N.B. (April, pg. 319.)

Alberta Central Ry.—Reports from Red Deer, Alta., June 1, stated that nothing was being done in the way of construction on the line from that town towards the Brazeau River coal field, and that nothing would be done until the return of the Chief Engineer, J. Grant McGregor, from the east.

J. Grant McGregor, Chief Engineer, on his return to Red Deer, June 9, is quoted as having said that work will be resumed at once on the line westerly towards the Brazeau River.

The construction plans have been modified by the directors, and new tenders for the building of the line from Red Deer to Rocky Mountain House have been asked for, to be in by June 24. It is proposed to abandon all work on the eastern end of the line, and to concentrate all efforts towards getting the line through to Rocky Mountain House this year. (June, pg. 505.)

Alberta Pacific Ry.—Calgary, Alta., press dispatches, June 5, stated that the charter of the A. P. Ry. had been acquired by interests associated with the G.N.R., and this is apparently confirmed in Winnipeg papers of June 9. The charter is reported to have been held by Calgary and Winnipeg interests, and the Winnipeg dispatch stated that the company's legal representative here had stated that the charter had been sold to the Hill interests, and that construction would be started at once.

This company was formerly known as the Pincher Creek, Cardston and Montana Ry., the present title being authorized by the Alberta Legislature in Jan.

Dispatches from Pincher Creek, Alta., June 11, stated it is expected construction work will be started at an early date. J. A. Taylor, who has been prominently connected with the company for some time, always stated that the line would be built as a connecting link with the Great Northern Ry. system in Montana. A site for a station at the east end of Pincher Creek was approved by the ratepayers some time ago, but it is understood that the G.N.R. desire a more central location. (June, pg. 505.)

Alberta Ry. and Irrigation Co.—The Dominion Parliament has extended the time for building certain branch lines authorized by the act of incorporation. (Mar., pg. 205.)

Algoma Central and Hudson Bay Ry.—The Dominion Parliament has authorized the company to build a branch line from the Michipicoten line northerly for 9.5 miles, and has extended the time for the building of its projected line from the C.P.R. transcontinental line to Hudson Bay.

The Department of Railways has approved the route map of the Magpie branch, about nine miles. This is a branch of the Hyde Park Jct.-Michipicoten section, and was built in 1910. The Board of Railway Commissioners has authorized a connection with the C.P.R. at Hobon, Ont., by means of a transfer track. (June, pg. 505.)

Algoma Eastern Ry.—The Dominion Parliament has changed the name of the Manitoulin and North Shore Ry. Co. to the Algoma Eastern Ry. Co., and has extended the time for the building of its projected lines.

Plans of the revised location, connection and Y between mileage 43.64 and mileage 46.44, have been approved by the Board of Railway Commissioners. The Board of Railway Commissioners has authorized the company to carry its line across the C.P.R. Sault Ste. Marie branch by an overhead bridge. (See Manitoulin and North Shore Ry., May, pg. 411.)

Alsek and Yukon Ry.—The Dominion Parliament has granted an extension of time within which the company may build its projected railway from the B.C.-International boundary at Klihini River to the Yukon-Alaska boundary, between latitude 63 and 64. (Feb., pg. 155.)

Atlantic, Quebec and Western Ry.—In the course of the investigation in London, Eng., into the affairs of the Charing Cross Bank, June 14, it was stated that this railway was the most important asset. It was hoped that it would be completed this year, but the trustees would have to find the money for the work. (Mar., pg. 409.)

Brandon Transfer Ry.—An order was made by the Board of Railway Commissioners, June 14, directing that the line shall be built over the route mentioned in our last issue as having been accepted by the city council. The line is to be built by the Great Northern Ry. (Brandon, Saskatchewan and Hudson Bay Ry.), which company will also have charge of its maintenance and operation. The line is to be put in operation by July 15, and the several companies using it are to pay the cost of maintenance on a wheelage basis. (June, pg. 505.)

British Columbia and Dawson Ry.—The Dominion Parliament has incorporated a company with this title to build a railway from Lytton to Fort George, B.C. and from Telegraph Creek, B.C., to Dawson, Yukon, with a branch from Ashcroft to Vancouver, B.C. (Mar., pg. 205.)

British Columbia and White River Ry.—The Dominion Parliament has incorporated a company with this title to build a railway from Bear Creek, B.C., to the Chilkut River, and on to the Yukon-Alaska boundary. (Mar., pg. 205.)

Bruce Mines and Algoma Ry.—It was stated in Sault Ste. Marie, Ont., June 5, that G. P. McCallum and H. Appleton of that place, had acquired this railway on behalf of a syndicate. The line was built in 1901-02, and was put in the hands of a receiver in 1904. It extends from Bruce Mines to Bruce Jct. and Rock Lake, Ont., 17 miles, and has been operated irregularly for both freight and passenger traffic, but no returns have been made to the Department of Railways and Canals for several years.

We are advised that the line has been taken over by the interests named above, and that when the reorganization is completed G. P. McCallum will be President, and H. Appleton Vice President and General Manager. The new company intends to complete the line through to the National Transcontinental Ry., and to make connection with the C.P.R. and Canadian Northern Ry., on the north, and to connect on the south with the C.P.R. Sudbury-Sault Ste. Marie line. It is also expected that a branch will be built into the Porcupine country. It has not been decided whether the company will do the construction work itself or will ask for tenders.

Press reports state that plans have been prepared for the extension of the line from the present terminus at Rock Lake, Ont., to the C.P.R. transcontinental line at Ridout, and on to the National Transcontinental Ry., about 100 miles west of Cochrane, with a branch line into the Porcupine country. It is reported that preliminary surveys have been made, that it is expected to have everything ready to start construction by Aug. 1, and that it is hoped to have 15 or 20 miles of the extension completed by the end of the year.

Burrard Inlet Tunnel and Bridge Co.—An announcement was made in Vancouver, June 8, that a tentative agreement had been made between the company and the Vancouver, Westminster and Yukon Ry., respecting the construction of the combined railway and general traffic bridge over the Second Narrows of Burrard Inlet. The terms, it is understood, were arranged at Ottawa, in consultation with the Minister of Railways, but these terms have not been made public. An arrangement has been made for a discussion of the matter between the V., W. and Y. Ry. and the municipalities composing the B.L.T. and B. Co., and a statement has been made that work will be started within 60 days after the agreement is approved.

Cariboo, Barkerville and Willow River Ry.—The Dominion Parliament has declared the line authorized to be built under the company's act of incorporation from the British Columbia Legislature, to be a work for the general advantage of Canada (April, pg. 319.)

Chicago, Milwaukee and Puget Sound Ry.—Press reports state that preliminary surveys have been made for a line from Moncton, Wash., direct to Vancouver, B.C., and that it was the company's intention to build the line at as early a date as possible. (June, pg. 505.)

Dominion Pacific Ry.—Press reports from Pincher Creek, Alta., state that local interests behind the application to the Dominion Parliament for the incorporation of this company are the same as were behind the application for the Alberta, Peace River and Eastern Ry. There is a slight difference in the route of the line which the D.P. Ry. desires power to build. (June, pg. 543.)

Essex Terminal Ry.—The Board of Railway Commissioners has authorized the company to cross the Canada Southern Ry., and the Detroit River Tunnel Co.'s line in Windsor, Ont. (June, pg. 505.)

Great Northern Mining and Ry. Co.—Following the annual meeting held at Eastern Harbor, N.S., June 6, an extraordinary meeting of the shareholders was held to authorize the directors to obtain a special act to remove the company's head office from Eastern Harbor to Quebec. P. Leclerk is secretary. (Sept., 1910, pg. 725.)

Grouse Mountain Scenic Incline Ry.—A start was made with the building of the first section of this short line, at North Vancouver, B.C., June 1, when the first sod was turned by the mayor. The starting point is at the terminal of a proposed extension of the B.C. Electric Ry The directors are: L. C. Mills, W. H. R Colliser, W. Manson, W. F. McGuigan, W. May. (April, pg. 319.)

Hudson Bay, Peace River and Pacific Ry.—The Dominion Parliament has incorporated a company with this title to build a railway from Fort Churchill to the Pacific Coast, and from Winnipeg to Fort Churchill.

The survey party referred to in our last issue as working from Edmonton, Alta., is in charge of D. B. McDonnell. (June, pg. 505.)

Intercolonial Ry.—We are advised that the improvements at the terminals at Halifax, N.S., for which Parliament recently voted $600,000, will consist of the construction of three new piers, each 800 by 255 ft. They will be built throughout of cement concrete. A fourth pier will be built at a later date, according to a press dispatch. Sheds are to be built on the piers, two of them to be single story structures of reinforced concrete, and the other a two story building.

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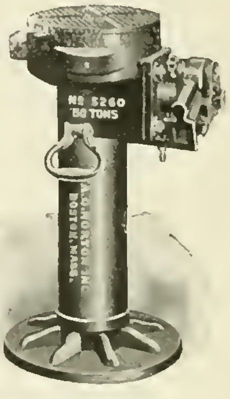

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OFFICE AND WORK

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Plans and specifications for the proposed line in Guysboro county are being prepared, and it is reported from Ottawa that tenders will be called for the building of the lines within a few weeks.

Tenders were received to June 10 for the erection of a brick and stone passenger station at Mulgrave, N.S.

The projected line on Cape Breton Island, for which Parliament has voted $200,000, will start from Alba, on the line to Sydney, 34.2 miles from Point Tupper on the Strait of Canso, and will cross the Grand Narrows by the Bras d'Or Lakes to Baddeck, a distance of about five miles. For some years an endeavor has been made to secure the building of a line from Orangedale, which is 4.9 miles nearer the Strait of Canso than Alba, into the coal areas of Inverness county, and subsidies were voted by the Dominion Parliament, as well as by the Nova Scotia Legislature, but nothing was done. It is expected that tenders will be asked for the building of the line at an early date.

A contract has been let to Rhodes, Curry and Co., Amherst, for the erection of an addition to the general offices at Moncton, N.B. The cost of the addition, which will double the capacity of the building, will, it is said, be about $100,000.

The culverts between St. John and Coldbrook, N.B., a distance of three miles, are being strengthened and widened, preparatory to the laying of a second track.

We are officially advised that nothing has been decided in connection with the building of the proposed spur from Hampton station to Hampton village, N.B., for which Parliament has voted $15,000.

A deputation of Newcastle, N.S., residents waited on the Government Railways Managing Board, June 14, and urged the extension of the Indiantown branch to Doaktown.

We were advised, June 16, that the following second track construction is being done by day labor, under the direction of the Engineer of Maintenance: between Coldbrook station and Jardine's Bridge, N.B., 1.25 miles; between New Glasgow station and the Pictou Landing branch, through a portion of New Glasgow, N.S., 0.5 mile.

Tenders are under consideration for the building of a six-stall addition to the engine-house at Stellarton, N.S.; and a passenger station at Fredericton, N.B.

Tenders will be received to July 20, for the construction of a reinforced concrete pier and sheds at the deep water terminus of the Intercolonial Ry. at Halifax.

The Managing Board informed a Moncton, N.B., deputation, June 10, that the cut-off from the new shops to Humphrey's will be built this summer, and that a new bridge would be built on St. George St. at once. A proposal to tunnel the railway crossing of Main St. is under consideration, and the deputation was informed that it was probable an order would be given at an early date for the work. (June, pg. 507.)

Joliette and Lake Manuan Colonization Ry.—The Dominion Parliament has extended the time within which the original line authorized to be built may be constructed, and has granted permission for extending the same from Joliette to Montreal.

Kaslo and Slocan Ry.—Press reports state that the local people who have secured control of the line have everything ready to start work on the repairs and reconstruction work, and are only waiting the handing over of the line by the Great Northern Ry.

The purchase of the line by the local syndicate from the Great Northern Ry. is reported to have been completed June 9. The syndicate was prepared to go on with the reconstruction of the line, but was hampered by the reports that the C.P.R. proposed to build a line through a portion of the territory served. A deputation representing certain mining interests was endeavoring to make an arrangement with the C.P.R. as to the matter. J. L. Retallack, representing the syndicate, stated in an interview, June 9, that on all stages of the negotiations for the purchase of the line the C.P.R. officials had been consulted. (June, pg. 507.)

Kettle Valley Lines.—Location plans for the extension of the line from mileage 29 to 29.63 have been approved by the Board of Railway Commissioners. (June, pg. 507.)

The ratepayers of Penticton passed a by-law, June 2, granting municipal aid to the company in connection with the proposed wharf, etc., in the town.

Reports from Merritt, B.C., state that the first 30 miles of the extension at this end is expected to be completed early in July, and that work will be begun on the second section at once. At the Midway end good progress is being made. It was expected that a contract for the first 15 miles out of Penticton would be let by June 30. Some difficulty is being experienced in obtaining a suitable location from Trout Creek towards the Coldwater summit with the gradient required, and some new surveys are being made. It is expected that the work will be completed so that a contract may be let for a second section west of Penticton before the end of the year. The plans for the wharf at Penticton have been completed. The wharf will be 630 ft. long, and will end with an apron for landing scows carrying cars. A track will be laid along the wharf, and two spur lines will connect it with the main line. (June, pg. 507.)

Klondike Mines Ry.—A steel bridge has been built across the Klondike River, at Klondike City, Yukon, in place of the wooden trestle built when the line was constructed. (Oct., 1910, pg. 827.)

Kootenay and Alberta Ry.—A deed of mortgage securing an issue of $600,000 of bonds upon the company's line, from the C.P.R., one mile east of Pincher station, to the Western Coal and Coke Co.'s property at Beaver Collieries, Alta., has been filed in the office of the Secretary of State, Ottawa.

Steel rails have been delivered at Pincher station, and are being hauled on to the right of way. The contractors have started additional plant on the work, and everything is going ahead rapidly. (June, pg. 507.)

Manitoulin and North Shore Ry.—See Algoma Eastern Ry.

Michigan Central Rd.—The issue of $1,600,000 of bonds recently made in New York was for providing funds for building the new station and terminal in Detroit, Mich. The building will be 14 stories high and is estimated to cost $2,000,000. (May, pg. 411.)

Montreal Central Terminal Co.—Resolutions were submitted to the shareholders at the annual meeting held in the C.P.R. Telegraph Building, Hospital St., Montreal, June 6, increasing the capital stock to $20,000,000, and authorizing the directors to issue mortgage bonds. (June, pg. 507.)

New Brunswick and Prince Edward Island Ry.—The Board of Railway Commissioners has ordered the ballasting of the line from Sackville to Tormentine, N.B.; repairing of certain bridges, and the renewing of the draw span of Port Elgin bridge.

The mile spur line built by the Fawcett Manufacturing Co., Sackville, N.B., has been completed, and a connection made with the Intercolonial Ry. The extension from the factory to the quarry is nearly completed. (June, pg. 507.)

North Arm Bridge and Ry. Co.—The Dominion Parliament is being asked to incorporate a company with this title to build a bridge across the North Arm of Burrard Inlet, Vancouver, B.C., from the Turtle's Head to the west shore on lot 575, north of White Rock Island. The bridge is to be for general traffic as well as steam and electric railways, and there are to be connected with it one or more lines not to exceed ten miles, and a line from lot 256 at the end of the C.P.R. from Port Moody, following the north shore of Burrard Inlet to Vancouver, or to connect with any other railway constructed on the north shore of Burrard Inlet. W. H. Langley, Victoria, B.C., is solicitor for applicants.

Ontario and Abitibi Ry.—The Dominion Parliament has incorporated a company with this title to build a line to connect the National Transcontinental Ry with the Temiskaming and Northern Ontario Ry., in the vicinity of Abitibi Lake, in the provinces of Ontario and Quebec. (See New Ontario and Quebec Ry., May, pg. 409.)

Ontario-Michigan Ry.—The Dominion Parliament has incorporated a company with this title to build a line from Sarnia to Windsor, Ont., with branches, and to connect the same by car ferries with lines in the United States. (May, pg. 413.)

Pacific and Hudson Bay Ry.—Assent was given May 19 to the act passed by the Dominion Parliament for the incorporation of a company with this title to build a railway from Dean's Channel, on the Pacific Coast, easterly to Port Nelson or Fort Churchill, on Hudson Bay. (April, pg. 321.)

Pacific and Peace River Ry.—The Dominion Parliament has incorporated a company with this title to build a railway from Bella Coola, B.C., to Fort McLeod, thence through the Pine Pass to the Peace River at Dunvegan, Alta., about 480 miles. The members of the provisional directorate are Frenchmen, resident in Edmonton, Alta., and in France. The Corporations Agency, Montreal, is making investigations into the prospects of the country through which the line will pass on behalf of the company. (Mar., pg. 207.)

Quebec and New Brunswick Ry.—Application for an extension of time for the building of this projected railway was granted by the Dominion Parliament, May 18. (Feb., pg. 113.)

Quebec and Saguenay Ry.—We are advised that the contract let to O'Brien and Doheny, for the building of the first section of this line, is really a continuation of the Quebec Ry., Light and Power Co.'s line, which is built for 30 miles from Quebec to the vicinity of Cape Tourmente. The chainage for the Q. and S.R. is continued from this point. The village of St. Joachim is at about mileage 25 on the Q. Ry., L. and P. Co.'s line, but as the road had to be built 30 miles for subsidy purposes it was continued to near Cape Tourmente. The Quebec and Saguenay Ry. is one of the subsidiary companies of the Quebec Ry., Light, Heat and Power Co., of which the Quebec Railway, Light and Power Co. is also a subsidiary. The Q. and S.R. trains will be run through between Quebec and Cape Tourmente, both ways, over the Q.R.L. and P. Co.'s line, which at present is operated partly by steam and partly by electricity. It is proposed, though not definitely settled, to entirely electrify the Montmorency division between Quebec and Ste. Anne de Beaupre, with a divisional point at the latter place, and to operate from there to Murray Bay by steam motive power.

The point to which it is at present proposed to build the line is Pointe a Pic, 85.5 miles from Quebec.

A subcontract covering three miles of heavy work has been let to A. and W. D. Wheaton, and another section has

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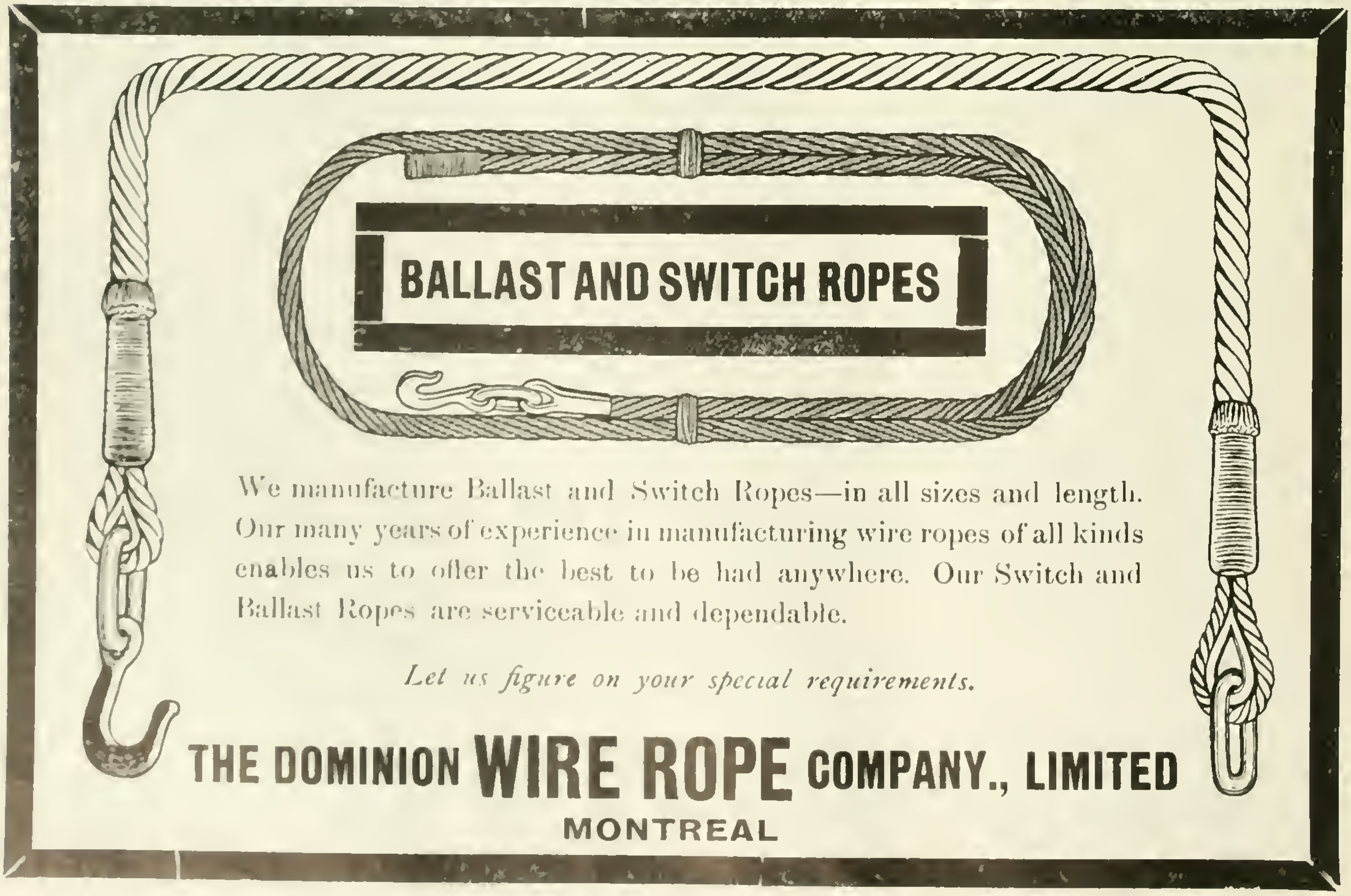

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been sublet to Walton and Tentes, Salisbury, N.B.

Plans have been filed with the Minister of Public Works, Quebec, showing the location of the line from mileage 85.6 to mileage 92.8 in Charlevoix county.

The contract with the Bishop Construction Co., Montreal and Toronto, calls for the building of 7.5 miles of line from the end of the O'Brien and Doheny contract, to the site of the East Canada Power and Pulp Company's works at Keeler. (June, pg. 507.)

Quinze River and Ottawa Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Kippawa, connecting with the C.P.R. Kippawa branch, northwesterly to the Quinze River, Que. Smith and Johnston, Ottawa, are solicitors for applicants.

Reid Newfoundland Ry.—Additional cargoes of steel rails have been received and the laying of track on the remaining 20 miles of the Bonaventure branch is being proceeded with. The work was expected to be finished by June 30. Work on the Waterford bridge is proceeding, and grading has been started at Bay Bulls on South Shore branch.

In the course of an interview, June 12, W. D. Reid, President, stated that of the four new branches under construction, that from Shoal Harbor to Bonavista, 92 miles, will be completed this year. Trading has been started on the line from near St. John's to Trepassey, about 100 miles. Surveys are in progress on the other three branches, in preparation for construction next year.

St. John and Quebec Ry.—According to recent statements in St. John, N.B., there is behind the project for the building of St. John Valley Ry., a plan for the utilization of it in connection with the St. John and Quebec Ry., which is being promoted by a company for which A. R. Gould has secured a charter in the State of Maine. The plan, which was being discussed with the Minister of Public Works and representatives of the New Brunswick Government, June 12, is to utilize the St. John Valley Ry. to a point near the Maine boundary, make a connection with a branch of the C.P.R., running into Maine, which the St. J. and Q. Ry. has power to acquire, extend this to the Maine-Quebec boundary, and there connect with the projected Quebec and New Brunswick Ry., which has power to swing its line southerly to the Maine boundary. It is claimed that this plan shows a route of 374 miles from Quebec to St. John, and that Centreville, Woodstock and the St. John Valley will obtain railway accommodation. (See St. John Valley Ry., June, pg. 541, and Aroostook Valley Electric Ry., May, pg. 453.)

Press dispatches state that as a result of the conference it was arranged that a line is to be built from St. John to Grand Falls, N.B., and that it is to be operated by the Intercolonial Ry. The arrangement is subject to the approval of the Dominion and Provincial Governments.

Saskatoon and Hudson Bay Ry.—The Dominion Parliament has incorporated a company with this title to build a railway from Saskatoon via Melfort to Pas Mission, Sask. (Mar., pg. 207.)

Simcoe, Grey and Bruce Ry.—The Dominion Parliament has incorporated a company with this title, with the provisional directors named, and for the purposes set out in our Mar. issue, pg. 209. (May, pg. 413.)

Temiskaming and Northern Ontario Ry.—The final location surveys for the proposed diversion of the line for 40 miles northerly from North Bay, have been completed. The route selected shows a gradient of 0.75% as compared with 1.50% on the present line. It is expected that a decision will be reached at an early date as to construction.

It is understood that new station buildings are to be erected at Iroquois Falls, Matheson, Thornloe, Golden City and Swastika.

A survey party in charge of Prof. Ellis left Cochrane, June 10, to examine the country between that point and Hudson Bay, with a view to determine its possibilities from an agricultural standpoint; and to look for a suitable harbor on James Bay.

Track was laid to Porcupine Lake on the new branch June 7, and the ballasting was completed from Iroquois Falls for 16 miles, and it is expected that the whole length of the branch will be completed ready for traffic by July 1. An arrangement has been made between the Commissioners and the owners of the Hollinger mine, according to a statement made May 30, by J. L. Englehart, Chairman, for the extension of the new Porcupine branch from Lakeview station, mileage 28.5, to Campbell veteran lot, mile post 33.5, just west of the Hollinger mine. Grading was started on the extension June 7. (June, pg. 507.)

Terminal Station for Toronto.—A. P. Gillies is reported to be engaged in working out plans for a terminal station building in Toronto, with tunnels under King and Queen streets from the Don River to Sunnyside, at an estimated cost of $100,000,000. The city papers quote Mr. Gillies as stating that some of the persons interested in the Hudson terminal in New York City are joined with him in the present enterprise, for the carrying out of which authority will be asked from the Dominion Parliament. The statements made should be accepted with considerable reserve.

Toronto, Hamilton and Buffalo Ry.—Local press reports stated, June 14, that the company is acquiring 16 acres from the New England Co. at Brantford, Ont., for the purpose of increasing its yard and switching facilities. (June, pg. 509.)

Vancouver to Peace River.—The Vancouver, B.C. board of trade has had under discussion the necessity of building a line to the Peace River country, and favors a guarantee of the company's bonds being given by the Government. It was stated at one of the meetings recently that European capitalists were prepared to invest $30,000,000 upon the construction of such a line if suitable arrangements could be made.

There are several charters available under which a line may be built, but neither of them are at present identified with the movement made by the board of trade.

Victoria, B.C.—Proposals are under consideration for the building of a line along the water front, from near the Outer Wharf by way of the harbor shore to Bridge St., and thence easterly to connect with the Victoria and Sidney Ry.; westerly across the Indian Reserve to connect with the railways there, and on to Esquimalt. It was stated, June 4, that the promoters expected to be in a position very shortly to place a proposition before the city council

A proposal was submitted to the Victoria city council, June 9, by Barnard, Robertson and Heisterman, solicitors for the promoters, and it was decided to arrange for a full discussion of the matter.

Western Alberta Ry.—The Dominion Parliament has granted a further extension of time within which the company may build the lines authorized by chap 90 of the statutes of 1898. (Feb., pg. 115.)

◆

Transportation Conventions in 1911.

July 25-27. — International Railway General Foremen's Association, Chicago, Ill.

Sept. 19.—American Association of General Passenger and Ticket Agents, St. Paul, Minn.

Oct. 10.—Railway Signal Association.

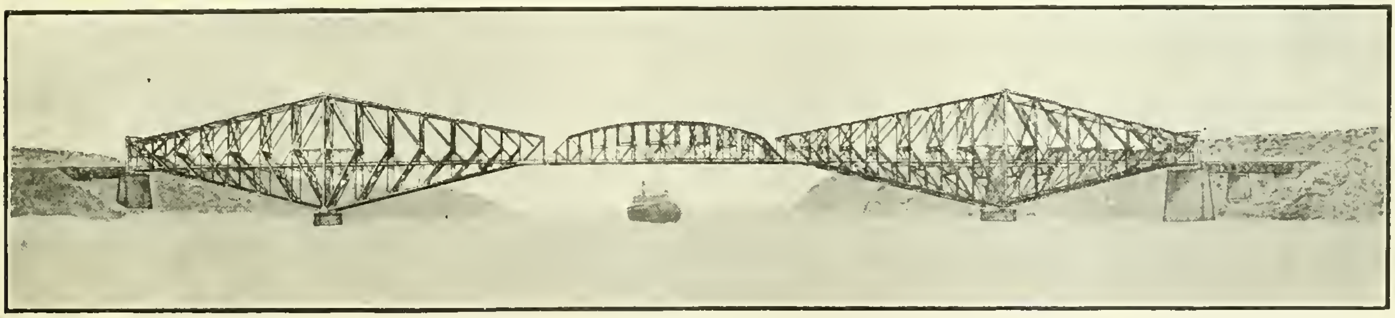
Oct. 17-18.—American Railway Bridge and Building Association, St. Louis, Mo.

Oct. 19-21.—American Association of Dining Car Superintendents, Cincinnati, O.

Nov. 17-18.—American Association of Freight Traffic Officers, Cincinnati, O.

◆

The C.P.R. has subscribed $5,000 towards the expenses of the Dry Farming Congress to be held at Lethbridge, Alta., in 1912.



The Quebec Bridge.

Our May issue contained very full particulars in regard to the award of the contract for the Quebec Bridge, illustrated with plans of the bridge in course of construction, which collapsed, the Board of Engineers' design for the new bridge, a half elevation of the St. Lawrence Bridge Co.'s accepted design, and also several of the unaccepted designs. The illustration given above, reproduced from a perspective sketch made by the St. Lawrence Bridge Co., a photograph of which has been furnished us by the Board of Engineers, shows the bridge complete.

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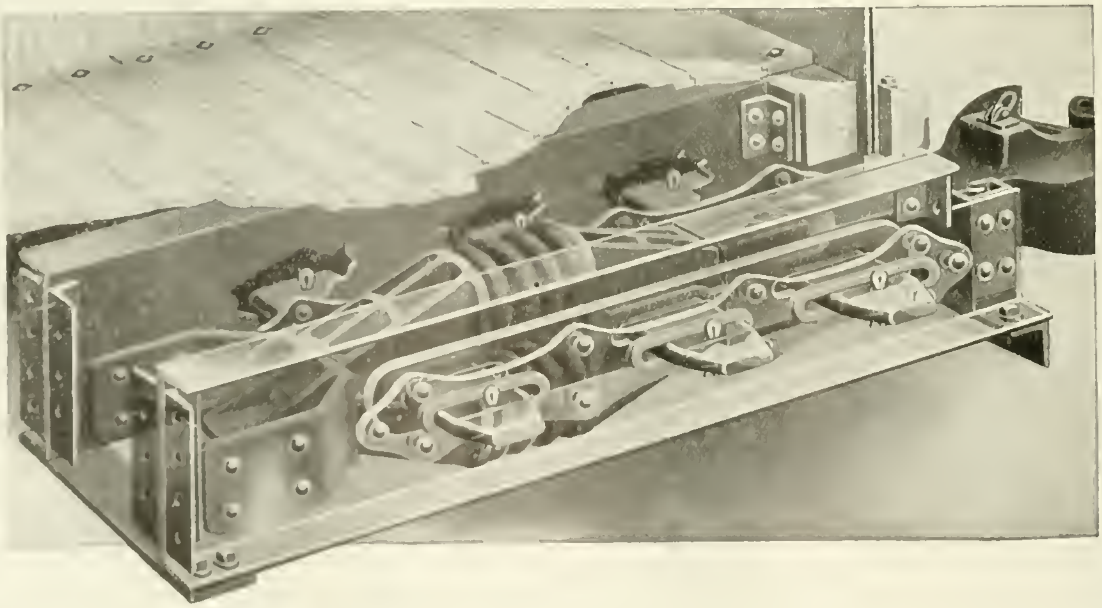

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BALTIMORE ROCHESTER NEW YORK CHICAGO

Orders by the Railway Commissioners.

Beginning with June, 1904, we have published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the hearing took place and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the date assigned to them

13686. May 17.—Approving standard tariffs of maximum merchandise tolls of 10 express companies, on application made through W. H. Burr, Chairman, Express Traffic Association, Toronto.

13687 to 13697. May 19, 22.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to cross highways in Mara, Eldon, Ops, Mariposa and Thorah tps., and to divert a highway in Thorah tp., Ont.

13698. May 19.—Authorizing C.P.R. to build second track across Pincher-McLeod trail in sec. 3, tp. 9, r. 26, w. 4 m., Alta.

13699 to 13701. May 20. — Authorizing C.N.O.R. to cross three highways and divert one in Nepean tp.

13702. May 22.—Authorizing C.N.O.R. to cross public road overhead in Portland tp.

13703. May 22.—Authorizing G.T.P. Branch Lines Co. to divert two highways on its Melville-Regina branch, Yorkton District, Sask.

13704. May 20.—Authorizing G.T.R. to build siding into Strathroy Furniture Co.'s premises, Strathroy, Ont.

13705. May 17.—Dismissing Chatham, Wallaceburg and Lake Erie Ry. application for extension of time in which to file joint tariff covering carriage of sugar beets, as required by order 12435, Oct. 14, 1910.

13706. May 16.—Approving Algoma Central and Hudson Bay Ry. bylaw authorizing H. J. Herrold, General Agent, to prepare and issue tariffs of tolls.

13707. May 22.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to cross highway between Ops and Fenelon tps., Ont.

13708. May 22.—Approving revised table of graduated charges for shipments weighing less than 100 lbs. contained in Supplement 1 to Express Classification for Canada 2.

13709, 13710. May 22.—Authorizing G.T.R. to build sidings to premises of William Clark, on lot 166, St. Remi, Que., and R. F. Firth and Sons, and A. Keith, Etobicoke tp., Ont.

13711. May 22.—Approving location of G.T.P. Branch Lines Co.'s Melville-Regina branch, from mileage 90.74 to Regina city limit, mileage 92.62, Sask.

13712. May 22.—Approving G.T.R. standard floor for bridges.

13713. May 22. — Authorizing Hamilton Bridge Co. to lay water pipe under G.T.R. near Trolley St., Hamilton Ont.

13714. May 22.—Authorizing C.P.R. to build 15 bridges on its Atlantic, Eastern, Ontario, Lake Superior, Manitoba and Saskatchewan Divisions.

13715. May 22. Authorizing C.N.O.R. to build bridge over creek at station 316-17, Haldimand tp.

13716 to 13718. May 22. — Authorizing C.N.O.R. to cross three public roads in Nepean tp.

13719. May 22.—Authorizing C.P.R. to build spur for Brackman-Ker Milling Co., Bengal, Alta.

13720. May 22.—Authorizing C.N.O.R. to build bridge over creek at station 1376-38, Brighton tp.

13721. May 22.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to cross town line between Marinosa and Fenelon tps., Ont.

13722. May 23.—Extending to Aug. 1. time for completion by G.T.P.R. of farm crossing for W. Smith, Huxley, Alta.

13723. May 23.—Ordering C.P.R. to carry out terms of order 13460, Apr. 19, re providing farm crossing for J. Gevart, Young, Sask. within 30 days, under penalty of $25 a day.

13724. May 23.—Authorizing Canadian Northern Pacific Ry. to cross C.P.R. Mission branch, interlocking plant to be installed.

13725. May 23.—Authorizing C.P.R. to use bridges 30.5, 50.54 and 19.32 on its Atlantic Division, New Brunswick Southern Ry.

13726. May 23.—Extending to July 1 time for installation of gates by C.P.R. at Pacific Ave., St. Louis de Mile End, Montreal, Que.

13727. May 17.—Authorizing G.T.P. Branch Lines Co. to divert highways on its Calgary Branch in n.w. ¼ sec. 11, tp. 25, r. 28, and s.w. ¼ sec. 25, tp. 35, r. 23, w. 4 m., Alta.

13728. May 17.—Ordering C.P.R. to provide level crossing at Carleton Ave., Nepean tp., Ottawa Front, Ont.

13729. May 22.—Ordering G.T.R. to build station and make changes in yard tracks at Powassan, Ont., by Nov. 1, under penalty of $25 a day.

13730. May 26.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to cross road allowance in Ops tp., Ont.

13731. May 26.—Amending order 13494 re laying and maintaining of water or other pipes under railways.

13732. May 26.—Rescinding order 10637, re erection and maintenance of wire crossings over railways.

13733. May 27.—Approving location of Kettle River Valley Ry. from mileage 29 to 29.63, B.C.

13734. May 26.—Extending to Aug. 31 time for completion of crossing of Lachine Road at Rockfield, Que., by G.T.R.

13735, 13736. May 26.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to cross five highways in Manvers and Ops tps., Ont.

13737. May 22. — Authorizing Manitoulin and North Shore Ry. to cross C.P.R. Sault Branch overhead.

13738. May 23.—Authorizing town of Montreal West to lay pipe under G.T.R. and Montreal Park and Island Ry. at Inspector St., Montreal.

13739. May 27.—Authorizing C.N.O.R. to build through unsurveyed territory, Algoma District, mileage 280 to 300, from Sudbury Jct.

13740. May 26. — Authorizing C.N.R. to cross Main St., Souris Ave. and Manor St., Carlyle, Sask.

13741. May 27.—Approving C.N.O.R. revised location through Chatham tp., Que., mileage 7.58 to 9.12 from Hawkesbury, Ont.

13742 13743. May 26.—Authorizing corporation of Tillsonburg, Ont., to lay sewer under G.T.R. at Coon Alley and Lisgar Ave.

13744 May 23.—Authorizing Michel Water, Light and Power Co. to lay pipe line under Crow's Nest Southern Ry. (G.N.R.) half a mile west of Michel station, B.C.

13745. May 26.—Ordering C.P.R. to build by Mar. 1, 1912, bridge with 40 ft. clear span across Buffalo Lake, on petition of residents of Rosenfeld and vicinity, Man.

13746. May 26.—Authorizing city of Winnipeg to lay sewer under C.P.R. Molson branch at Talbot Ave.

13747. May 18.—Rescinding order 5131, Aug. 5, 1908, re crossing of highways by C.P.R. in St. Antoine, Riviere du Loup, Que.

13748. May 18.—Ordering Quebec, Montreal and Southern Ry. to complete station at Sorel, Que., by Sept. 1, under penalty of $100 a day, judgment being reserved pending investigation into complaint by resident of Sorel of unsatisfactory train service.

13749. May 19.—Extending to Sept. 15 time for completion of tunnel under C.P.R. at St. Lawrence Boulevard crossing, Montreal, without prejudice to any rights the city may have against contractor for alleged failure to complete within time specified.

13750. May 22.—Amending order 13302, Mar. 23, re location of C.P.R. spur in Port Moody, B.C.

13751. May 23.—Approving Manitoulin and North Shore Ry. bylaw authorizing H. J. Herrold, General Agent, to prepare and issue tariffs of tolls.

13752 to 13754. May 29.—Authorizing C.P.R. to use 13 bridges on its Cartier, Chapleau and White River subdivisions.

13755. May 29.—Authorizing C.P.R. to erect no. 10 standard station at Gleichen, Alta.

13756. May 29.—Authorizing C.P.R. to build spur to power house, Magog, Que.

13757. Apr. 4.—Approving C.N.O.R. location through Loughborough Storrington and Bedford tps.

13758 to 13762. May 29.—Extending to Dec. 1. tariffs of tolls of G.T.P. Telegraph, C.P.R. Telegraph, C.N.R. Telegraph, North American Telegraph and Belle Telephone Companies.

13763. May 29.—Ordering C.N.R. to provide cattle pass and farm crossing before Sept 1, under penalty of $100 a day, for M. Wallace, Ochre River, Man.

13764. May 29.—Approving location of South Ontario Pacific Ry. from lot 5, con. 2, Nassagaweya tp. to lot 15, con. 1, Nelson, tp.

13765. May 29.—Dismissing application of White Pass and Yukon Route and declaring it subject to a penalty of $100 a day for every day's default in compliance with order 12783, Jan. 18, as amended by order 13292, Mar 23, respecting tariffs. This order is given fully on another page.

13766. May. 30.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to cross highway in Ops tp. Ont.

13767. May 30.—Authorizing C.P.R. to use bridges 0.7 and 7.1 on its Laurentian subdivision, Que.

13768, 13769. May 30.—Authorizing C.N.O.R. to cross and divert higaways in Bastard tp.

13770 May 9 — Authorizing G.T.P. Branch Lines Co. to cross three highways with its Biggar-Calgary branch Sask.

13771. May 30.—Authorizing C.N.O.R. to cross highway in Bastard, tp.

13772. May 30.—Approving location of Georgian Bay and Seaboard Ry. (C.P.R.) from lot 23, con 9, near Bethany village, Manvers tp., at mileage 87.41, south-easterly to connect with C.P.R. in lot 2, con. 7 at mileage 91.13.

13773. May 30.—Authorizing Sherbrooke St. Ry. to change location of its crossing of C.P.R. at junction of King and Belvidere Sts., Sherbrooke, Que.

13774. May 30.—Approving location of C.P.R. station at Campbelville, Nassagaweya tp. at mileage 37.89, London subdivision, Ont.

13775. May 30.—Authorizing C.N.O.R. to cross under C.P.R. near Nipigon.

13776. May 30.—Defining portion of cost of work to be borne by the city and C.P.R. re overhead crossing Sixth Ave, Moose Jaw, Sask.

13777. May 30.—Extending to July 10, time for completion of interlocking plant at crossing of New Westminster Southern Ry. by Vancouver Power Co.'s tracks.

13778. May 19.—Ordering C.P.R. to stop at Lesage, Que., on flag, its up-passenger train on Saturdays and down-passenger train on Mondays, on application of residents of St. Jerome parish.

13779. May 18.—Ordering G.T.R. to file plans for gates at Elizabeth and St. Remi Sts., Montreal.

13780. May 30.—Authorizing Vancouver Power Co., to erect wires across C.P.R. at 4th St., Huntingdon, B.C.

13781. May 30.—Authorizing Seymour Power and Electric Co. to erect wires across Bell Telephone Co.'s wires on Kingston Rd., Hamilton, tp., Ont.

13782. May 30.—Authorizing Hamilton Cataract Power, Light and Traction Co. to erect wires across G.T.R. at lot 23, con. 5. Humberstone tp., Ont.

13783. May 30.—Authorizing B.C. Electric Ry. to erect wires across C.P.R. near Barnet.

13784. May 30.—Authorizing Seymour Power and Electric Co. to erect wires across North American Telegraph Co.'s wires at Ontario St., Colborne, Ont.

13785. Apr. 24.—Authorizing G.T.R. to take certain lands east of Cardigan St. Guelph, Ont.

13786. May 30.—Extending to Dec. 1, G.N.W. Telegraph Co.'s tariff, C.R.C. 9.

13787. May 30.—Dismissing application of town of Cobourg, Ont., for subway under C.N.O.R. at William St. and ordering C.N.O.R. to remove obstructions to view near crossing.

13788, to 13790. May 31.—Approving plans of G.T.P.R. stations at Spruce Grove, Wabamun, and Fallis, Alta.

13791. May 31.—Authorizing G.T.P.R. to open for traffic its line from Prince Rupert easterly, for 100 miles, speed limited to 12 miles an hour.

13792. May 30.—Authorizing C.P.R. to build bridges 44.5, 101.1, and 97.03 on its London, Windsor and Cartier subdivisions.

13793. May 30.—Authorizing C.P.R. to build spur for St. Clair Brothers Galt, Ont.

13794. May 18.—Ordering C.P.R. to stop, on flag, its westbound Halifax morning train, during six months at St. Phillippe, Que., and postponing application re commutation tickets to next sittings in Montreal.

13795. May 31.—Authorizing C.P.R. to take G.T.R. lands in Lindsay, Ont, being part of railway lumber yard.

13796. May 31.—Authorizing C.N.R. to cross highway between secs. 1 and 2, tp. 47, r. 20, w. 4 m., Alta.

13797. May 31.—Authorizing G.T.P. Branch Lines Co. to cross and divert certain highways on its Yorkton branch, Sask.

13798. May 31.—Approving C.P.R. plans of standard no. 4 engine house.

13799. May 31.—Authorizing C.N.O.R. to cross public road between lots 30 and 31, Con A. Tyendinaga, tp.

13800. May 30.—Authorizing C.P.R. to build spur for C. W. Trenholme, St. Vincent de Paul, parish, Que.

13801. 13803. May 31.—Authorizing Seymour Power & Electric Co. to erect wires across Bell Telephone wires in Hope tp., Cobourg, and Haldimand tp., Ont.

13804. May 31.—Authorizing C.N.O.R. to erect wires across Coulson Telephone Co.'s wires at Orone.

13805. May 30.—Authorizing Hamilton Cataract Power, Light & Traction Co. to erect wires across M.C.R. at lot 26, con. 6, Crowland tp., Ont.

13806 to 13808. May 31.—Authorizing Seymour Power & Electric Co. to erect wires across G.N.W. Telegraph Co.'s wires at Cobourg, Hamilton tp., and Colborne, Ont.

13809. Feb. 24.—Authorizing Georgian Bay & Seaboard Ry. (C.P.R.) to operate from mileage 71.68 in Ops tp. to connection with Lindsay, Bobcaygeon and Pontypool (C.P.R.) in Lindsay, Ont., mileage 72.91, and approving revised location.

13810. May 30.—Ordering M.C.R. to install improved type electric bell at crossing of Diltz Road, Moulton tp., Ont., and allowing

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20% of cost from railway grade crossing fund.

13811. June 1.—Relieving C.P.R. from further protection at crossing west of Lacadie Station, Que.

13812. June 1.—Authorizing C.P.R. to build bridge 16.83 on its Cartier subdivision, Lake Superior Division.

13813. June 1.—Authorizing C.P.R. to operate trains over subway at St. Louis Boulevard Crossing, St. Louis, Montreal.

13814. June 1.—Authorizing G.T.P. Branch Lines Co. to build bridge over Battle River on its Battleford branch, Sask.

13815. June 1.—Approving St. Lawrence & Adirondack Ry. bylaw authorizing L. F. Vosburgh, G.P.A., I. H. Hubbel, G.F.A., F. E. Herriman, Coal Traffic Manager, New York, to issue tariffs.

13816. June 1.—Approving location of C.N.Q.R. station grounds at Carillon.

13817, 13818. May 31.—Authorizing city of Toronto to maintain wires across C.P.R. and G.T.R. and across G.N.W. Telegraph Co.'s wires at Queen and John Sts.

13819. June 1.—Authorizing city of Prince Albert, Sask., to maintain sewer under C.N.R. at 7th St. East.

13820. June 1. Authorizing city of Calgary, Alta., to maintain trunk sewer under C.P.R., near 9th Ave. East.

13821. May 31.—Authorizing C.P.R. to build eight bridges on its Atlantic, Eastern, Lake Superior, Manitoba & British Columbia Divisions.

13822. May 30.—Authorizing Standard Natural Gas Co. to maintain oil line under G.T.R. in Onandaga tp., Ont.

13823. June 2.—Authorizing C.P.R. to make revision in spur to R. Laidlaw Lumber Co.'s premises, Bloor and Dundas Sts., Toronto.

13824. June 2.—Authorizing city of Calgary, Alta., to maintain sewer under C.P.R. at 15th Ave. East.

13825. June 2.—Authorizing C.P.R. to build three bridges on its Eastern, Lake Superior and Manitoba Divisions.

13826. June 1.—Authorizing C.P.R. to use bridges 30.5, 50.54 and 19.32 on its Atlantic Division (N.B. Southern Ry.).

13827. June 2.—Authorizing Manitoulin & North Shore Ry. to cross C.P.R. (Sault Branch) by subway.

13828. May 16.—Authorizing G.T.P. Branch Lines Co. to cross with its Regina-Boundary branch, five highways in Sask.

13829. June 2.—Authorizing Montreal, Park & Island Ry. to build siding to Gervais' woodyard, Sault-au-Recollet.

13830. May 22.—Authorizing G.T.P. Branch Lines Co. to cross highway wtih its Melville-Regina branch, at mileage 92.5, Sask.

13831. June 5.—Authorizing C.P.R. to remove its station at Winnipeg Beach, Man., to new location.

13832. June 5.—Authorizing C.P.R. to build siding across road allowance on west boundary of sec. 36, tp. 12, r. 7, e. p. m. at Beausejour, Man.

13833. June 5.—Authorizing G.T.R. to operate over bridge near Scarboro Jct., Ont., and authorizing C.N.O.R. to operate under same.

13834. June 5.—Amending order 13562, May 2, re C.P.R. Pheasant Hills branch crossing highways between mileage 254.5 and 328.3.

13835. June 5.—Approving plans of C.P.R. bridge across Sixth Ave. Moose Jaw Sask.

13836. June 5.—Authorizing Georgian Bay & Seaboard Ry. and Lindsay, Bobcaygeon & Pontypool Ry. (C.P.R.) to build overhead crossing for three lines over Colborne St., Lindsay, Ont.

13837. June 5.—Authorizing C.P.R. to build spur for Canada Lime & Builders' Supply Co., 2.27 miles from Ste Therese, Que.

13838. June 5.—Approving revised location of Manitoulin & North Shore Ry. connection and Y. in mileage 43.64 to 46.44.

13839. June 5. Extending to Dec. 1 temporary approval of tariffs of telegraph tolls for White Pass & Yukon Route.

13840. June 5.—Ordering C.N.R., under penalty of $25 a day after 30 days from date, to build highway crossing between secs. 25-26, tp. 43, r. 20, 4 m., on application of Edberg municipality, Alta.

13841. June 5.—Extending to July 15 time for installation of gates by C.N.Q.R. at Moreau, Prefontaine and St. Germain Sts., Montreal.

13842. June 5.—Authorizing C.N.R. to operate over C.P.R. crossing near Bienfait, Sask.

13843. June 5.—Approving C.N.R. location and entrance to Union station, and crossings at River Ave. Main St. South, and Bell Ave., Winnipeg.

13844, 13845. June 5.—Authorizing C.P.R. to build bridges 58.4 and 76.11 on its Windsor subdivision, Ontario Division.

13846. June 5.—Authorizing C.P.R. to build four bridges on its Atlantic, Eastern, Lake Superior, and Saskatchewan Divisions.

13847. May 30.—General order re reports of accidents at highway crossings and circular 60. This is given in full on another page.

13848. June 5.—Authorizing C.P.R. to build spur for F. H. Wiley, near Higgins Ave. Winnipeg.

13849. May 2.—Authorizing C.N.O.R. to cross lot 2, con. 1, Thurlow tp.; compensation to be paid Belleville-Prince Edward Bridge Co.

13850. June 2.—Approving Supplement 1 to Canadian Classification 15, with exception of certain specified articles.

13851. June 6.—Authorizing G.T.R. to build spur and branch therefrom for Goodyear Tire & Rubber Co., Bowmanville, Ont.

13852. June 1.—Re rates on rice between points east of and including Fort William. This order is given in full on another page.

13853. June 7.—Approving location of International Bridge & Terminal Co.'s connection with C.N.R. at Fort Frances, Ont., and crossing Rainy River to International Falls, Minn.

13854. June 7.—Authorizing C.P.R. to open for traffic the extension of Orford Mountain Ry. from Mansonville, Que., to International boundary, 3.77 miles.

13855. June 5.—Authorizing C.P.R. to build spur for Manitoba Gypsum Co., Winnipeg.

13856. June 6.—Authorizing Toronto & Eastern Ry. (C.N.R.) to cross public road between lots 16 and 17, con. 2, at mileage 13.1, Whitby East tp., Ont.

13857. June 6.—Authorizing G.T.R. to use 12 bridges on its Eastern Division.

13858. June 6.—Authorizing G.T.P. Branch Lines Co. to build five bridges over Embarass River on its Alberta coal branch.

13859. June 6.—Authorizing G.T.P.R. to cross highway in n. w. ¼ sec. 18, tp. 44, r. 4, w. 4 m., North Alberta District.

13860. June 6.—Authorizing G.T.P. Branch Lines Co. to cross with its Melville-Regina branch, 32 highways in Saskatchewan.

13861. June 6.—Authorizing G.T.P.R. to build spur for Cushing Bros. and to cross Stephen Ave., Edmonton, Alta.

13862. June 6.—Relieving G.T.R. from further protection at crossing three miles west of Chatham, Ont.

13863. June 7.—Authorizing Algoma Central & Hudson Bay Ry. to connect by means of transfer track with C.P.R. at Hobon, Ont.

13864. June 6.—Authorizing C.P.R. to operate into Farnham military camp to June 12 pending installation of interlocking plant.

13865. June 6.—Ordering New Brunswick and Prince Edward Island Ry. to ballast its line from Sackville to Tormentine, to make repairs to certain bridges, and to renew draw of Port Elgin bridge.

13866, 13867. June 6.—Authorizing Seymour Power and Electric Co. to erect wires across C.P.R. telegraph wires, and across G.T.R. at Newcastle, and at Cavan St., Port Hope, Ont.

13868. June 6.—Authorizing Hamilton Cataract Power, Light and Traction Co. to erect wires across C.P.R. telegraph wires at lot 26, con. 6, Crowland tp., Ont.

13869. June 6.—Authorizing city of Toronto to maintain wires across C.P.R. and G.T.R. and G.N.W. Telegraph Co.'s and C.P.R. telegraph wires between King and Sudbury Sts.

13870. June 6.—Authorizing city of Medicine Hat, Alta., to lay gas main under C.P.R. at East Road allowance.

13871. June 5.—Authorizing Toronto Suburban Ry. to erect wires across C.P.R. and G.T.R., York tp., Ont.

13872. June 5.—Ordering that cost of building and maintaining crossing at Carleton Ave., Ottawa Front, over C.P.R., be paid by Nepean tp. See order 13728, May 17.

13873. June 7.—Approving Bell Telephone Co.'s bylaw authorizing F. Sise, Jr., general manager, to prepare and issue tariffs of tolls.

13874. June 7.—Approving Ottawa Electric Ry. bylaw authorizing J. D. Fraser, secretary-treasurer, to prepare and issue tariffs of tolls.

13875. June 7.—Authorizing G.T.R. to use 10 bridges on its Eastern Division.

13876. June 7.—Authorizing city of Edmonton, Alta., to lay sewer under Edmonton, Yukon and Pacific Ry. (C.N.R.) near Peace Ave.

13877. June 9. — Approving Standard Freight and Passenger Tolls of Vancouver, Fraser Valley and Southern Ry.

13878. June 10.—Approving C.N.O.R. location through South Crosby and Bastard tps., mileage 180.51 to 195.22 from Toronto.

13879. June 9.—Authorizing Vancouver, Fraser Valley and Southern Ry. to open for passenger traffic portion of its line from Park Drive, Vancouver, to Eighth Ave., New Westminster, B.C., 10 miles.

13880. June 10.—Approving location of G.T.P. Branch Line Co.'s Calgary Branch entrance into Calgary, Alta.

13881. June 7.—Amending Scale N Express Classification C.R.C. 2, by cancelling Note 12 and substituting the following:—"Note 12 includes grain (whole or cracked), chopped feed, bran, meal, ground meat (dried), dried bone, alfalfa meal, cut clover, ground screenings, and crushed shells. Does not include condition powders, condiments, or medicated or patented articles."

13882. June 10.—Authorizing Kettle River Valley Ry. to build bridge at station 215.21, second crossing, Coldwater River, B.C.

13883. May 10.—Ordering G.T.R. to build overhead crossing at Brooker's Crossing, 2½ miles west of Mallorytown station, Ont., 20% to be paid from railway grade crossing fund, 20%, or $700, whichever is larger amount, by Front of Escott tp.

13884. June 8. Approving specification of Schaefer Drain under G.T.R. on lot 25, con. 5, South Easthope tp., Ontario.

13885. June 7.—Approving bylaw of Vancouver, Fraser Valley and Southern Ry. authorizing R. H. Sperling, General Manager, F. R. Glover, Assistant General Manager, and Allan Purvis, Manager Interurban Division, to issue tariffs.

13886. Apr. 22.—Authorizing C.N.R. to cross with its Camrose-Strathcona Branch, 24 highways in Alberta.

13887. May 22.—Authorizing G.T.P. Branch Lines Co. to cross with its Melville-Regina Branch three highways in Saskatchewan.

13888. June 9.—Authorizing C.N.R. to extend existing footbridge over tracks at West Fort William, Ont.

13889. June 9.—Authorizing G.T.P. Branch Lines Co. to build bridge over Bow River on its Calgary Branch, mileage 198, Alta.

13890. June 9.—Authorizing C.P.R. to build bridge 24.86 on its St. John Subdivision, Atlantic Division.

13891. June 9.—Authorizing G.T.P. Branch Lines Co. to divert highway on its Prince Albert Branch in s.w. ¼ sec. 25, tp. 36, r. 27, w. 2 m., Sask.

13892. June 9.—Authorizing Toronto and Eastern Ry. to cross public road at mileage 16.3, Whitby East tp., Ont.

13893. June 8.—Authorizing G.T.P. Branch Lines Co. to build bridge over McLeod River at mileage 5.79, Alberta coal branch.

13894. June 8.—Authorizing C.P.R. to build bridge 80.7 over Little Rouge River, Toronto Subdivision, Ontario Division.

13895. June 8.—Authorizing G.T.R. to operate branch south of Tunnel and North Sts., Sarnia, Ont.

13896. June 8.—Authorizing C.N.R. to build subway known as 19th St. subway, Saskatoon, Sask.

13897. June 8.—Authorizing G.T.P.R. to cross road diversion in s.e. ¼ sec. 8, tp. 23, r. 7, w. 2 m., Sask.

13898 to 13901. June 8.—Authorizing C.N.O.R. to cross public road between lots 14 and 15, con. 2, South Elmsley tp.; to cross East, Brock, Main and George Sts., Newburgh, and to cross two public roads, one overhead, in Camden tp.

13902. June 9.—Authorizing C.N.R. to cross and divert public road between n.e. ¼ sec. 34 tp. 50, r. 23, and n.w. ¼ sec. 19, tp. 50, r. 22 w. 4 m.

13903, 13904. June 7, 9.—Authorizing Toronto and Eastern Ry. to cross five highways in Whitby, and public road at mileage 14.2, Oshawa, Ont.

13905 to 13909. June 6.—Authorizing C.P.R. to build additional track in connection with its double tracking from Montreal to Quebec Jct., across streets and public roads, St. Martin, St. Laurent and Sault aux Recollets parishes, Montreal.

13910. June 10.—Extending to July 1, time for installation of gates by C.P.R. at Westminster Ave., Montreal West, Que.

13911, 13912. June 6, 10.—Authorizing Toronto and Eastern Ry. to cross G.T.R. Port Perry Branch in Whitby; interlocking plant to be installed, and to cross public road between lots 14 and 15, con. 2, at mileage 13.7, in Whitby East tp., Ont.

13913. June 6. Authorizing C.P.R. to build additional track, in connection with its Montreal-Quebec Jct. double track, across public road in St. Martin parish, Montreal.

13914. June 10. Authorizing Essex Terminal Ry. to cross Canada Southern Ry. and Detroit River Tunnel Co.'s tracks, Windsor, Ont.

13915. June 7.—Authorizing city of Edmonton, Alta., to extend sewer under C.N.R. near Riverview Ave.

13916. June 8.—Authorizing Ottawa Electric Co. to maintain wires across C.P.R. at Main St., Westboro, Ont.

13917. June 10.—Authorizing town of Montreal East to build St. Jean and St. Cyr Aves. across Montreal Terminal Ry. and C.N.O.R.

13918. June 13. Authorizing C.P.R. to build spur to Wylie Ballast Pit across Government Road, Wylie tp., Ont.

13919 to 13921. June 13.—Authorizing Toronto and Eastern Ry. to cross 11 highways in Darlington and Whitby East tps., Ont.

13922 to 13927. June 13.—Authorizing C.N.O.R. to cross four highways in Bastard

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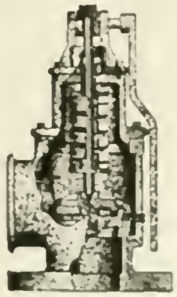

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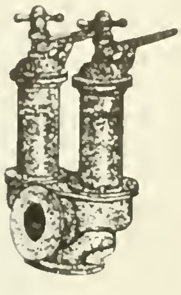

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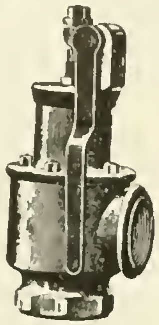

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tp.; eight highways in South Crosby and Loughborough tps.; public road in Goulbourn tp., and two public roads in Tyendinaga tp.

13928. June 13.—Approving location of 15 G.T.P.R. stations in Western Provinces.

13929. June 13.—Authorizing G.T.R. to use five bridges on its Southern Division.

13930. June 13.—Approving G.T.P.R. Standard Freight Mileage Tariff C.R.C. 7, between stations in Alberta, Thornton and Prairie Creek, inclusive.

13931. May 19.—Authorizing G.T.P. Branch Lines Co. to cross three highways on its Prince Albert Branch, Sask.

13932. June 13.—Approving location of G.T.P. Branch Lines Co.'s station at Brewer, on its Yorkton Branch, Sask.

13933. June 13.—Approving location of G.T.P. Branch Lines Co.'s Biggar-Calgary Branch, mileage 19.97 to 50.23, Sask.

13934. June 13.—Authorizing G.T.P. Branch Lines Co. to cross 27 highways on its Regina-Boundary Branch, mileage 1.3 to 31, Sask.

13935. June 13.—Authorizing C.P.R. to open for traffic its double track from Mile End to Quebec Jct., 7.5 miles.

13936. June 13.—Authorizing C.N.O.R. to build across Opinicon Lake Road, lot 21, con. 10, Loughborough tp.

13937. June 14.—Authorizing G.T.P.R. to build four stations in Western Provinces, and approving plans for same.

13938 to 13946. June 14.—Approving C.P.R. standard plans for grain loading platforms, mail crane and clearances at and through elevator, pump house and dock track at Victoria Harbor, Ont.; standard no. 2 stock pen, double deck stock chutes, single deck stock yards, clearance of proposed verandah roof at warehouse, Toronto, and clearances standard two track coaling plant, and clearances standard sand house.

13947. June 6.—Approving location of C.P.R. double track, Mile End to Quebec Jct., mileage 5.18 to 12.68, Que.

G.T.R. Betterments, Construction, Etc

New England Lines Proposals.—Press reports state that in connection with the plans for the extension of the Central Vermont Ry. in Rhode Island, and Massachusetts, a proposal is being prepared by Boston business men with a view to securing the Central Massachusetts Rd., so as to provide an entrance into that city.

Lachine, Jacques Cartier and Maisonneuve Ry.—The route maps of the projected line from St. Catharine St., Montreal, to Jacques Cartier Jct., about seven miles, have been approved by the Department of Railways. They show a line from near Jacques Cartier Jct., northeasterly, crossing the C.P.R. and the Montreal Park and Island Ry., and thence southerly and easterly to a terminal and station on St. Catharine St., between Frontenac and Harbor St. This will give the G.T.R. a belt line round the city. It is reported that practically all the land necessary for the line has been acquired, and that construction will be started as soon as certain matters are arranged between the company and the city to the satisfaction of the Board of Railway Commissioners.

Montreal Track Elevation.—At a meeting of the Montreal city council, June 5, objection was made to the plans submitted for the elevation of the tracks on the ground that they involved the closing of certain streets and the construction of an earthen bank instead of stone or concrete. The city asks for plans showing an elevated embankment with retaining walls of stone or concrete, and that no streets now crossing the tracks shall be closed. The city will oppose the approval of the plans before the Board of Railway Commissioners.

Ottawa Station, Etc. — Considerable progress has been made towards the completion of the station building at Ottawa, and it is expected it will be ready for occupation by the traffic staffs in Sept. The three top floors are to be occupied by the Board of Railway Commissioners and it is expected that these will be ready early in July.

Ottawa to Brockville or Kingston.—In an interview at Toronto, June 16, W. Wainwright, Second Vice President, is quoted as having stated that the company would, in the near future, build a line from Ottawa to Brockville or Kingston, Ont. The management had the matter under consideration, and a decision as to the point of junction with the main line would be made almost immediately. "Possibly," added he, "the short line between the Toronto-Montreal line and Ottawa will be double-tracked."

The company has the control of two charters for lines out of Ottawa—one the Ottawa, Smith's Falls and Kingston Ry., and the other the Ottawa, Rideau Valley and Brockville Ry.

Mallorytown Crossing.—The Board of Railway Commissioners has ordered the company to file plans for the erection of a steel overhead bridge at the highway crossing west of Mallorytown station, the cost to be apportioned between the company, the township, and the Dominion grade crossing fund.

Powassan, Ont.—The Board of Railway Commissioners has ordered the company to build a station and make changes in the yards at Powassan, Ont., by Nov. 1, under penalty of $25 a day.

Toronto Viaduct, Etc.—E. H. Fitzhugh, First Vice President, is quoted as stating in an interview, June 1, that the company would have its plans for the Esplanade improvements and elevation of tracks in Toronto ready for submission to the Board of Railway Commissioners by Aug. 1. The plans for the Union Station would not be finally prepared until the Esplanade plans had been approved and accepted by all the parties interested.

Brock Ave. Subway.—The subway to be built under the tracks at Brock Ave., Toronto, is to be 56 ft. wide, with two 21 ft. roadway, and two sidewalks. The cost has been apportioned by the Board of Railway Commissioners as follows: G.T.R., 48%; C.P.R., 32%; $5,000 from the Dominion grade crossing fund, and the balance by the city of Toronto.

New Station at Guelph.—The new passenger station at Guelph, Ont., was opened for business, June 2. The grounds surrounding the building are now being laid out.

Branch in Sarnia.—The Board of Railway Commissioners has authorized the operation of a branch line south of Tunnel and North Sts., Sarnia, Ont. (June, pg. 521.)

A Railway to Hudson Bay.

The Department of Railways will receive to Aug. 1 tenders for the construction of a section of about 185 miles of the projected railway to Hudson Bay, from Pas Mission to Thicket Portage. The plans and specifications were completed June 1. The work is to be done under the immediate supervision of the Department of Railways, with J. Armstrong, who has had charge of the surveys, as Chief Engineer. The amount available for work at present is $2,000,000, that being the sum recently voted by Parliament on account of construction. It is expected that the contract will be awarded sufficiently early to enable contractors to take in supplies and plant in the fall. The section is expected to be completed by 1912.

Three survey parties are in the field working towards Hudson Bay, with a view of locating the balance of the line, and two parties are engaged in locating harbors at Fort Churchill and Port Nelson, to enable a decision to be made as to what should be chosen as the terminus. It is expected that this will be decided by the end of the year, and that tenders will be asked early in 1912 for the construction of the balance of the line. (June, pg. 513.)

Great Northern Ry. Lines in Canada.

Emerson to Winnipeg.—L. W. Hill, President, G.N.R., is quoted, June 11, as saying that the company would built its own line into Winnipeg. For some time negotiations have been in progress with the Canadian Northern Ry. for running powers over its line from the International boundary, near Emerson, to Winnipeg, but some hitch has occurred, and it is understood that even if an arrangement is made it will be only temporary.

Midland Great Northern Ry.—Under the agreement recently made with the city, the company must build a line into Winnipeg from a few miles south of the Assiniboine River. The total length is about five miles, and it will connect the C.N.R., over which the company is running its St. Paul-Winnipeg traffic, with the company's own freight station on Paulin St. The building of this line, including several subways, has to be completed by Dec. 31. A contract has been let to I. E. Guthrie and Co., St. Paul, Minn., and work was started June 9.

A pile driver was towed up the river to about 200 ft. below the C.P.R. bridge, and work started in driving piles for the bridge to be built across the river, which is to be completed by Dec. 1.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—Survey parties are in the field completing location plans for the line westerly from the present end of steel to near Hope, B.C. J. H. Kennedy, Chief Engineer, is quoted as having stated that the company had definitely abandoned the idea of building a line between Sumas Landing and Hope, but would use, under an agreement, the Canadian Northern Pacific Ry. for 38 miles between these points. This suggests that the V. V. and E. Ry. surveys will link up with the C.N.P.R. near Hope, and that its trains will run on to Sumas Landing, and there be switched off again to the V. V. and E. Ry. now under construction. Tenders have been asked for the construction of 13 wooden bridges between Sumas Landing and Abbotsford, in the building of which some 5,000,000 ft. of timber will be used. These bridges are to be built over the small low lying ravines into which the Sumas River overflows. More than half of the grading between Sumas Landing and Abbotsford has been completed, and it is expected to go on with track laying at an early date.

The Board of Railway Commissioners has ordered the company to build a proper sewer through its fill from Front St. to False Creek, near George St., Vancouver. This portion of the foreshore was filled in a couple of years ago.

J. M. Gruber, General Manager, G.N.R., and other officials, visited Vancouver, recently, and inspected the work in progress. It was decided to put concrete under the tracks on Main St., and plans for other work were discussed with the city authorities.

Other officials were in Vancouver, June 7, in connection with the proposal to take over an additional 700 ft. of frontage west of the sugar refinery. This will give the company an aggregate of 1,700 ft.

Waterfront on Burrard Inlet.—It is proposed to expend a large sum upon the building of docks, piers and warehouses, the plans for which, it is expected, will be submitted to the city early in July. (June, pg. 503.)

The G. T. Pacific Ry. inaugurated a daily service between Winnipeg and Edmonton, in 26 hours running time, June 18, a week later than it was originally announced the service would be started. On June 15, a regular passenger train service was started from Prince Rupert eastwards for 150 miles.

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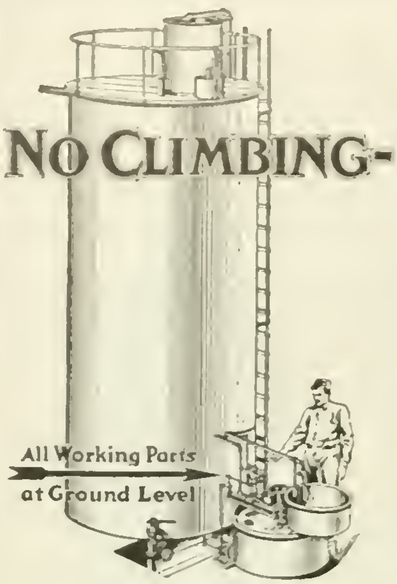

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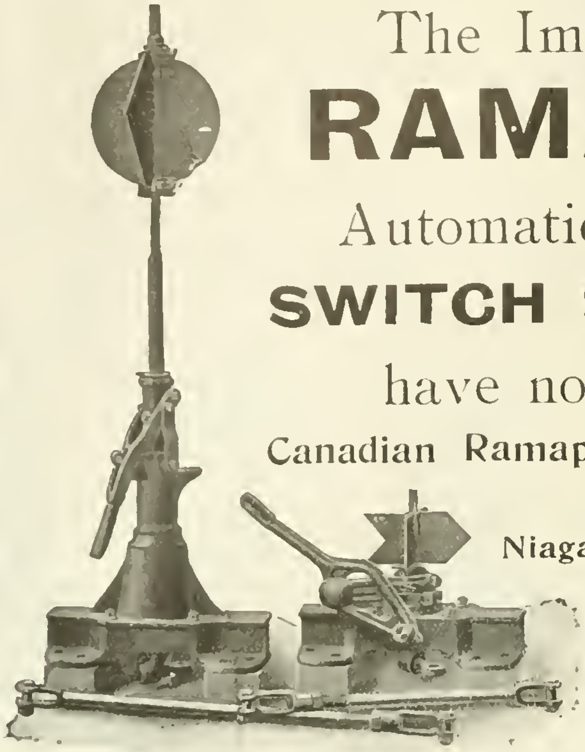

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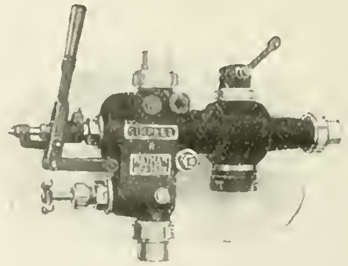

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New Brunswick Southern Ry.—The Board of Railway Commissioners has authorized the C.P.R. to use bridges 30.5, 50.54, and 19.32 on the N.B.S. section of its Atlantic Division.

Orford Mountain Ry.—The Board of Railway Commissioners has authorized the operation of trains over the extension of the line from Mansonville, Que., to the International boundary, 3.77 miles.

St. Lawrence Boulevard.—The Board of Railway Commissioners has authorized the operation of trains over the subway at St. Lawrence Boulevard crossing, St. Louis, Montreal.

Windsor St. Station.—The erection of the steel framework of the extensions at the Windsor St. Station, Montreal, has been practically completed by the Dominion Bridge Co. Good progress has also been made with the stone, concrete and other work on the structure.

Place Viger Station, Etc.—Satisfactory progress is being made with the building of the new station at Place Viger, Montreal. The work of getting in the foundations presented considerable difficulty, as the river is only a couple of blocks away, and the floor of the boiler room is only 6 ft. above low water. The building is two stories high, and the walls are strong enough to carry a higher building should it be desired to add to it at any time.

New Montreal Branch.—Application is being made to the Board of Railway Commissioners for approval of location plan from the main line west of Moreau St., easterly to lot 396, Longue Pointe, about 4.5 miles. The branch line is to serve an important manufacturing district.

Montreal to Quebec Jct. Second Track.—The Board of Railway Commissioners has authorized the building of additional tracks across various streets and highways in Montreal, St. Martin, St. Laurent, and Sault au Recollet, Que., in connection with the second track work between Montreal and Quebec Jct., 7.5 miles, and the opening of same for traffic.

Ottawa Improvements.—The Ottawa city council will, July 3, hear any persons interested in opposing the sale to the C.P.R. of the road allowance between concessions A and I, Ottawa Front, Nepean tp., and portions of Alongo and Richmond streets, for which a by-law has been under discussion.

Smith's Falls—Bathurst Second Track.—A sub-contract has been let to A. and W. D. Wheaton, for grading a section of second track work between Smith's Falls, and mileage 9, near Perth, Ont.

Georgian Bay and Seaboard Ry.—The Board of Railway Commissioners has approved the line being built across a number of highways, and location plan of the line from lot 23, con. 9, near Bethany, at mileage 87.41 south-easterly to connect with the Ontario and Quebec Ry. in lot 2, con. 7, at mileage 91.13; has authorized the operation of the line from lot 24, station 2030, con. 6, Ops tp., mileage 71.68, to a connection with the Lindsay, Bobcaygeon and Pontypool Ry., in Lindsay, at mileage 72.91, and authorized the building of an overhead crossing for three lines at Colborne St., Lindsay.

South Ontario Pacific Ry.—The Board of Railway Commissioners has approved location plans from lot 5, con. 2, Nassagaweya tp., to lot 15, con. 1, Nelson tp., Ont.

Toronto.—While in Toronto, June 1, D. McNicoll, Vice President, is quoted as having stated that the viaduct and Union Station could both be built at the same time, and there were many reasons why they should be constructed together.

The question of the plans for the new office building at the corner of King and Yonge Sts. was still unsettled, June 20. The city council desires to round off the corner, but the company is unwilling to give up the land. Expropriation was threatened, but on June 13, a suggestion was made that additional land could be secured in the rear so as to permit the widening of the street. The company is calling for tenders for the erection of the building, to enable the work to be started as soon as the plans are passed by the city authorities.

West Toronto Yards, Etc.—Considerable progress has been made with the building of the new passenger station, and the bridge over the tracks at West Toronto, and something like order is beginning to appear round about the old station. At Jane St. and adjoining streets a good deal of work is being done, getting ready for the construction of the subways and levelling up for the yard extensions. The first subway to be built will be that under Jane St., and tenders were received to June 30, for building the concrete abutments.

Tillsonburg, Lake Erie and Pacific Ry.—St. Mary's and Western Ontario Ry.—The piece of line which connects these two lines, and enables a through service to be given between Ingersoll, and Embro, St. Mary's, and other points, was opened for traffic, June 6. It connects Ingersoll Jct. and Ingersoll North.

London Improvements.—A permit for roundhouse and other buildings, value $60,000, was issued to the C.P.R., in London, Ont., May 31. Considerable progress is reported to have been made with the work.

Stratford, Ont.—D. McNicoll, Vice President, accompanied by other officials, was in Stratford, June 1, looking over routes for the projected line from St. Mary's, through the city to connect with a branch of the Guelph and Goderich Ry.

North Bay Shops.—We are advised that there is nothing in the report that plans and estimates have been prepared for extensive additions to the company's shops at North Bay, Ont.

Lake Superior Division.—Roadmaster Coughlin reports that six extra gangs and some work trains are engaged in ballasting and other work along the division.

Port Arthur.—G. J. Bury, General Manager, Western Lines, is quoted as saying that the building of the new dock east of the C.P.R. dock, will be commenced right away. An agreement has been made with the city council by which it will be built, and it is understood that the C.P.R. will handle the Grand Trunk Pacific terminal passenger business over it.

Press reports state that it is expected contracts will be let at an early date for the erection of water tanks at Port Arthur. The supply is to be drawn from small lakes in the vicinity, and brought in by gravity.

Port Arthur—Fort William Second Track.—The grading for the second track between these two points was practically completed June 1, and track laying is proceeding. It is expected that it will be completed early in July.

Shop Enlargement at Winnipeg.—A contract is reported let to Carter-Halls-Aldinger Co., Ltd., Winnipeg, for the building of an addition to the tender and wheel shops at Western, Man. The addition will be 220 ft. by 54 ft. 8 in.

Brandon Station.—Tenders are under consideration for the erection of a new station at Brandon, Man.

Buffalo Lake Bridge.—On the petition of residents of Rosenfeld, Man., and vicinity, the Board of Railway Commissioners has ordered the company to build a bridge, with a 40 ft. clear span, across Buffalo Lake, by Mar. 1, 1912.

Boissevain to Lauder.—It is reported that it has been decided to proceed, this season, with the construction of a line from Boissevain, on the Deloraine branch, to Lauder, on the Souris branch.

Bredenbury, Sask.—Large gangs of men are engaged in completing the new yards, terminal buildings and waterworks plants at Bredenbury, Sask., on the old Manitoba and North-Western Ry.

Regina Union Station.—A contract has been let to the James McDiarmid Co., Winnipeg, for the erection of the station building in Regina, Sask., which is to be used by the Canadian Northern Ry., under the terms of an agreement with the C.P.R. The building will be three stories high, with two wings, and is to be completed by May 1, 1912. The contractors started clearing the site June 12.

Hawarden to Saskatoon.—We are advised that a reconnaissance survey has been made from near Hawarden, Sask., on the Outlook branch running from Moose Jaw northwesterly, to the Pheasant Hills branch, on the east side of the Saskatchewan River. The survey work was done this season, but there is no possibility of any construction being done this year.

Swift Current, Southeasterly.—The Department of Railways has approved revised location maps of the branch from Swift Current, Sask., for 45 miles.

Estevan Westerly.—Press reports state that 33 miles of grading on the branch line under construction westerly and northerly from Estevan, Sask., had been completed June 8. The point of junction with the Weyburn extension had not then been determined.

Weyburn-Lethbridge Line.—The Vice President of the Lethbridge, Alta., board of trade received a letter, June 8, from Wm. Whyte, Vice President, C.P.R., to the effect that he hoped the company would be able in the near future to arrange for the construction from Lethbridge easterly to meet the extension westerly of the Weyburn branch.

Bassano to Langdon Branch.—Press reports state that a contract has been let to J. G. Hargrave & Co., Winnipeg, and J. Timothy, Edmonton, Alta., for the building of a line from Bassano, Alta., to a junction with the line running northerly from Langdon, Alta. The branch will be about 40 miles long and serve a large section of the irrigation block. This line will complete a loop through the irrigation block, between Langdon and Bassano, passing through Irricana.

Langdon Branch.—The revised route maps of the branch from Langdon, Alta., northerly, for 62.1 miles, have been approved by the Department of Railways.

Lacombe Station.—A contract has been let to J. McLaughlin, Lacombe, Alta., for the building of a station there. It is to be erected opposite Dolmage St., and will be of brick and Calgary sandstone.

Medicine Hat to Calgary.—Press reports, June 4, state that C.P.R. engineers are making surveys about 40 miles north of Taber, and south of the Bow River, Alta., for the location of a new line into Calgary. The party is in charge of J. R. Paget.

Shops in Alberta.—We are advised that the proposal to build car and other repair shops at some point in Alberta is at present under consideration. The interests of Medicine Hat, Bassano and Calgary are being advocated by residents and deputations have waited upon the company's officials. Sir Thos. G. Shaughnessy is expected to make a trip to the West shortly, when a decision will probably be reached.

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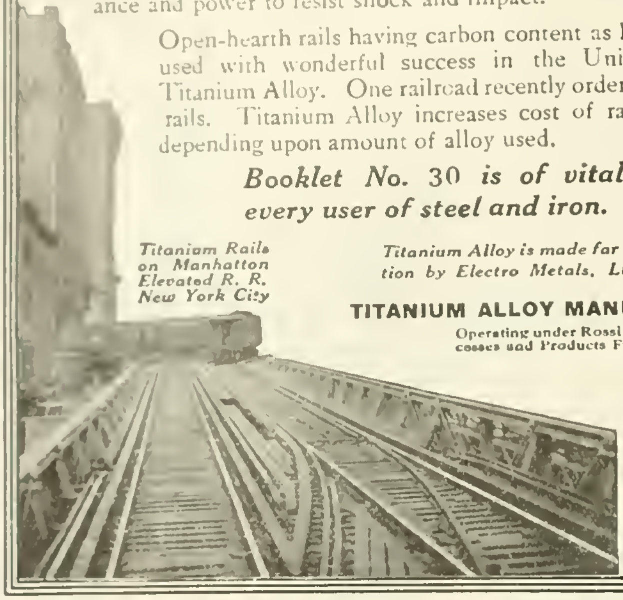

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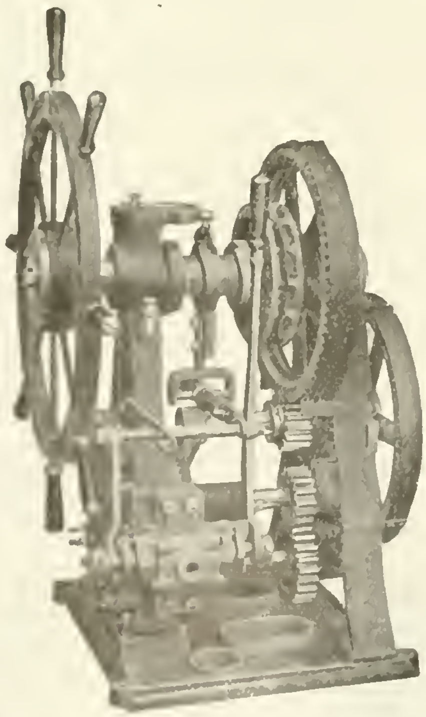

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Calgary Station, Etc.—General Superintendent Price is quoted as stating, June 8, that contracts will be let at an early date for an extension of the station building at Calgary, Alta. The present building will be utilized for ticket offices, washing rooms, etc., and in the new wings there will be a lunch counter, express rooms, offices, etc. The west wing will be built to within 40 ft. of the proposed new hotel.

The ratepayers of Calgary voted, June 29, upon a bylaw confirming an agreement under which the city agrees to accept $4,000 a year in lieu of all taxes upon the hotel to be built by the company, and also accepting certain sums towards street paving works.

Kaslo to Three Forks.—No definite decision, we are advised, has been reached with reference to the proposal to build a line of four miles from Kaslo to Three Forks, B.C., to serve some mines.

Wharf at New Westminster.—Plans have been filed with the Minister of Public Works at Ottawa, and at the Registry Office, New Westminster, B.C., of the new wharf which the company proposes to build on the Fraser River at New Westminster.

Kootenay Central Ry.—Work has been started on the bridge across the Kicking Horse River at Golden, B.C. Grading is also being pushed in the direction of the Crow's Nest Pass branch.

Vancouver Improvements.—In an interview at Vancouver, B.C., June 14, G. J. Bury, General Manager, Western Lines, is quoted as saying that the present plans for the station at Vancouver, have been abandoned and that the whole situation was being reviewed so that the new plans could be prepared upon a larger scale than had previously been contemplated.

W. Whyte, Vice President, who returned to Winnipeg, June 17, stated in an interview that certain improvements would have to be undertaken at Vancouver, and alternative plans were being considered. The proposed yards at Coquitlam would be sufficiently large to provide for the development of many years. The plans provide for a series of 90 tracks, paralleling the main tracks for two miles, making in all 180 miles of side tracks. On the opposite side of the track there is an area equally large for the shops with a tract a mile long on the Fraser River for industrial sites.

Victoria Wharf.—Tenders are under consideration for the building of a 240 ft. extension to the wharf at Victoria, B.C. The wharf will also be extended to 60 ft., in order to relieve the congestion of traffic.

Esquimalt and Nanaimo Ry.—We are advised that it is the company's intention to proceed immediately with the construction of the Cowichan Lake branch, a contract for which was expected to be let by the end of June.

The press reports as to the construction of the extension to Comox, we are advised, are premature, as nothing has yet been decided.

Seattle, Wash.—Negotiations are reported to have been completed by which the C.P.R. will lease pier no. 1 at Seattle, Wash., for the accommodation of its steamers, from the Northern Pacific Rd. The company has hitherto used the Pacific Coast Steamship Co.'s docks.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—Track is reported laid on the bridge over the St. Croix River, west to Withrow, Minn., on the cut-off from New Richmond, Wis., and it was expected to have the whole cut-off completed by June 30. The construction of the line from Frederick, Wis., to Duluth, Minn., is being pushed forward by the contractors, Foley, Welch and Stewart, and it is expected it will be completed in the fall. (June, pg. 515.)

Railway Contracts for 1911.

In his annual address to the shareholders of the Imperial Bank recently, President D. R. Wilkie said: "It must be borne in mind that the prosperity of the country at the moment is largely due to the enormous expenditures of money borrowed from abroad for railway construction. At the present moment there are no less than 1,681 miles of railway actually under construction, and no less than 10,000 men employed in the work, in addition to which a further mileage of about 3,000 will shortly be under way."

The mileage mentioned is a very conservative estimate, when the fact is taken into consideration that on the National Transcontinental Ry. alone there is some 400 miles of grading to be completed, out of the total of 1,804 miles, all of which is under contract. Up to June 20, we had been advised of the letting of contracts this season for upwards of 1,400 miles of new lines. Tenders are under consideration for the construction of over 650 miles of lines for the Canadian Northern Ry. system, and it is understood that tenders will be asked at an early date for something like 650 miles of other lines, including the 450 mile section in British Columbia to link up the prairie section of the G.T. Pacific Ry. with the section under construction easterly from Prince Rupert.

Following is a list of the contracts for new lines already let this season, with the names of the contractors:—

Alberta Eastern Ry.—This line was formerly known as the Manitoulin and North Shore Ry. A contract for the section from Crean Hill to White Fish Bay, 46 miles, has been let to the Lake Superior Construction Co.

Canadian Northern Quebec Ry. — Short line from Hawkesbury, Ont., to Montreal, 55 miles; J. P. Mullarkey, Montreal.

Canadian Northern Ontario Ry.—Toronto to Deseronto, Angus Sinclair; two short pieces of grade revision on Bay of Quinte Ry. between Deseronto and Sydenham, about four miles, Angus Sinclair; Sydenham to Ottawa, 163 miles; J. P. Mullarkey, except so far as the grading and timber work from mileage 180 to mileage 200, which will be done by Ewen Mackenzie.

From Gowganda Jct. northerly for 15 miles, Angus Sinclair.

Tenders were received to June 30 for the construction in three sections of the line from Port Arthur easterly to Sellwood Jct., Ont., about 500 miles, the work to be completed in 1913

Canadian Northern Ry.—New contracts have been let as follows:—Completion of Vegreville-Calgary line, from Red Deer to Calgary, Alta., Northern Construction Co.; Brazeau extension westerly from the Vegreville-Calgary line near Stettler westerly for about 100 miles, Northern Construction Co. Completion Maryfield extension to Moose Jaw, Sask., 30 miles, Cowan Construction Co. Completion of the Rossburn extension to near Canora, Sask., about 12 miles, Molloy Bros., Winnipeg. Main line from Pembina River westerly towards Yellowhead Pass, for 100 miles, Cowan Construction Co.; from Onoway, on the main line, for 40 miles towards Peace River, Northern Construction Co.; from Morinville to Athabasca Landing, Alta., 73 miles, Northern Construction Co.

Canadian Northern Pacific Ry.—From Port Mann to Hope, B.C., 77 miles. The Northern Construction Co. has a considerable portion of the grading completed. Tenders were received to May 12 for the grading, etc., on 163 miles from Hope to Kamloops, B.C., but the contracts had not been awarded on June 20.

From near Victoria for 40 miles in the direction of Alberni, Grant, Smith and Co.

Canadian Pacific Ry.—In addition to second track work at Montreal and Fort William, which is being done by the company's own staff, second track work between Smiths Falls and Bathurst, Ont., under contract to Jones and Girouard, Ottawa, and easterly and westerly from Moose Jaw, in all 23 miles, under contract to J. G. Hargreave, Winnipeg, the company has put the following new lines under construction:—

Georgian Bay and Seaboard Ry.—Completion of line to Bethany Siding, Ont., 38 miles, Toronto Construction Co.

South Ontario Pacific Ry.—From Hamilton to Guelph Jct., Ont., 16 miles, Toronto Construction Co.

Branch Lines in West.—Estevan to Forward, 35 miles, J. D. McArthur. Extension of Weyburn branch towards Lethbridge, 20 miles, Foley, Welch and Stewart. Swift Current southeasterly for 45 miles, and from Swift Current southwesterly for 35 miles, Foley, Welch and Stewart; extension of Moose Jaw branch to a junction with the Lacombe branch, about 35 miles, Foley, Welch and Stewart; from Wilkie north to Cut Knife district, 25 miles, and from Wilkie south to Tramping Lake district, 25 miles, Dutton and Timson; from Castor easterly for 65 miles, Foley, Welch and Stewart.

Kootenay Central Ry. — From 10 miles out of Golden, B.C., for 25 miles, and from 30 miles out of Galloway to Baynes Lake, B.C., 12 miles, Janse and McDonald.

Great Northern Ry. Lines in Canada.—Manitoba Great Northern Ry.—From Winnipeg to junction with C.N. Ry. Emerson line, four miles, A. Guthrie and Co., St. Paul, Minn. Vancouver, Victoria and Eastern Ry.—From Abbottsford to Chilliwack, B.C., 12 miles, J. W. Stewart. A contract is expected to be let shortly for the extension of the line from near Princeton, westerly to Hope.

Ha Ha Bay Ry.—From Riviere du Moulin to La Terriere, Que., seven miles, Boulianne and Boulianne.

Kootenay and Alberta Ry.—Grading, etc., of a line at Pincher, Alta., 13 miles, Grant, Smith and Co., Spokane, Wash.

Grand Trunk Pacific Ry. Branch Lines.—Regina to International boundary, an additional 90 miles to complete the line, J. D. McArthur, Winnipeg; Regina to Moose Jaw, to complete about '9 miles, Rigley, Hyland and Plummer; Biggar, Sask., towards Calgary, Alta., 50 miles, Foley, Welch and Stewart; Mountain Park branch of the Alberta Coal branch, 54 miles, Foley, Welch and Stewart.

Prince Edward Island Ry.—Branch from Harmony to Elmira, 9.9 miles, Whitehead Bros., Fredericton, N.B.

Quebec and Saguenay Ry.—From terminus of Quebec Ry. Light and Power Co.'s line near Cap Tourmente to Pointe a Pic, Que., 56 miles, O'Brien and Doheny, Quebec; from Pointe a Pic to East Canada Power and Pulp Co.'s mills, 7.5 miles, Bishop Construction Co., Montreal and Toronto.

Reid Newfoundland Co.—The company is building, under charge of its own staff, a branch from St. John's to Trepassey, about 100 miles.

Temiskaming and Northern Ontario Ry.—An extension of the newly built Porcupine Branch (29 miles in length from Iroquois Falls to Porcupine Lake, Ont.) is being built by the Commissioners' staff to the Hollinger Mines, about five miles.

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Canadian Northern Ry. Construction, Etc.

In an interview in London, Eng., June 8, Sir Wm. Mackenzie, President, is quoted as saying the company's construction programme for the present season was the largest yet undertaken. It will mean the addition of 700 or 800 miles of new lines or branches in the prairie provinces. These branch lines will open up large agricultural areas for settlement; the Stettler-Brazeau River line will open up large coal areas at the foot of the Rocky Mountains. During 1910 the company built about 600 miles of branch lines. The construction of the Port Arthur-Sudbury-Ottawa link would be pushed as fast as possible, and the end of 1914 would possibly see its completion.

Canadian Northern Quebec Ry.—W. A. Kingsland, Auditor, C.N.E. Ry., is quoted as stating, June 15, that it was the intention of the company to build shops at Limoilou, Que., and that land was being purchased as a site. The laying out of the plant would be proceeded with as soon as possible after the land had been acquired.

Some large purchases of land have recently been made on Montreal Island, along the route of the short line now being built from Hawkesbury, Ont., into the city. One report states that altogether some 8,000 acres has been purchased for between $7,000,000 and $8,000,000. One of the sellers said he had sold to the C.N.R. interests, while E. R. Decary, who does C.N.R. notarial business, states that the company had not either directly or indirectly purchased an inch of land on Montreal Island. The land is being acquired by a syndicate, a real estate agent states, the funds coming from London, Eng., but nothing is known of the purposes for which they are being acquired. The question of terminals in Montreal is yet unsettled, and it is stated that an arrangement may be made with the C.P.R. for the use of that company's terminals at Place Viger.

The revised location plans of the Hawkesbury-Montreal line through Chatham tp., Que., being mileage 7.58 to mileage 9.12 from Hawkesbury Jct., Ont., have been approved by the Board of Railway Commissioners. The contractor for the building of this line is J. P. Mullarkey, and it is understood that he has been instructed to push the line to completion as fast as possible. The work includes the building of a new bridge across the Back River, between Montreal Island and the mainland. The water is not deep at the point of crossing, the bottom is good, and there are no engineering difficulties in the way of construction. The line is expected to be completed and in operation within two years.

Canadian Northern Ontario Ry.—A start was made at Dwyer Hill, midway between Ottawa and Smiths Falls, June 12, upon the grading of the remaining section of the Toronto-Ottawa line. At this point a subcontract covering six miles has been let to Ross and McCombe. Another subcontract is reported let to —. Harrison, at Smiths Falls. Other contractors are reported to have their plants ready to move in as soon as the general contractors have assigned them mileage. The locating engineers are busy completing their work, so as to let the contractors start work.

The Board of Railway Commissioners has approved location plans for the line through Loughborough, Storrington, Bedford, South Crosby and Bastard tps. The line through these townships is an extension of the line from the terminus of the Bay of Quinte Ry. at Sydenham, towards Ottawa.

The Department of Railways has approved route maps of two small revisions of line between Deseronto and Sydenham, on the Bay of Quinte, which is being made part of the C.N.O.R. between Toronto and Ottawa. The deviations are about five miles and 1.5 miles respectively.

The Board of Railway Commissioners has dismissed the application of the ratepayers of Cobourg, Ont., for a subway under the tracks at William St., and has ordered the company to remove certain obstructions to the view near the crossing.

The Department of Railways has approved location plans for the projected lines through Wentworth and Halton counties, including Hamilton, about 30 miles.

Tenders are under consideration for the construction of that portion of the line from Port Arthur to Sellwood Jct., Ont., about 500 miles. The work is to be let in three sections, as follows: from Port Arthur to the boundary between Thunder Bay and Algoma; from the Thunder Bay-Algoma boundary to Kapuskasing Lake, and from the latter point to Sellwood Jct., on the line from Toronto northerly. The work to be done under the contracts will include clearing, grubbing, and grading, the erection of bridges, trestles, culverts and masonry work, the fencing of the line, tracklaying and ballasting, and the erection of a telegraph line. The contracts call for the completion of the work by Oct. 1, 1913. The eastern portion of this mileage, it is reported, will run through a comparatively easy country for construction, but on the western portion there is a good deal of very rough country to be gone through, involving a good deal of rock work and bridging.

The Board of Railway Commissioners has approved the revised route maps of the line from Port Arthur to Nipigon, 73.9 miles; the proposed crossing under the C.P.R. near Nipigon, and authorized the building of the line through unsurveyed territory in Algonquin district, mileage 280 to 300 from Sudbury Jct.

It is stated that plans for the construction of 240 miles westerly from Sellwood Jct., and for 150 miles easterly from Port Arthur have been completed ready for the contractors. By a slight deviation near Sudbury connection will be made with the Algoma Eastern Ry. (formerly Manitoulin and North Shore Ry.). A Port Arthur report states that the C.N.O.R. route between Port Arthur and Nipigon is so close to the C.P.R. that it is probable that an arrangement will be made by which the two companies will run their trains, as over a double track line.

Canadian Northern Ry.—The Department of Railways has approved the route map of the proposed connection between the C.N.R. at Fort Frances, Ont., and the International Bridge and Terminal Co., about 800 ft., at International Falls, Minn., and the Board of Railway Commissioners has approved the location of the connection with the Canadian Northern Ry. at Fort Frances, Ont., and the crossing of the Rainy River to International Falls, Minn., and for the International Bridge and Terminal Co.

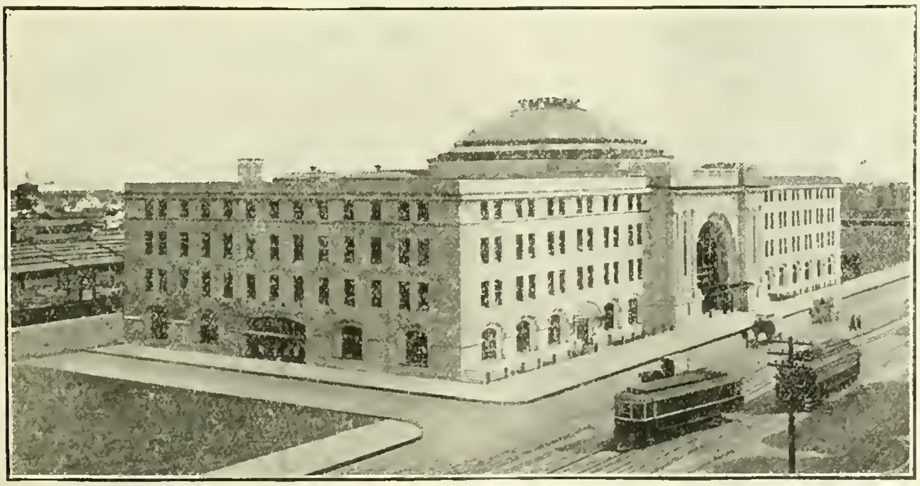
The company is desirous of securing permission from the Winnipeg city council to lay spur tracks across lots 8, 9, 10, D, and 11 of plan 208, and the city engineer has been requested to report as to the subways which would be necessary in order to secure public access to the river.

The question of the entrance to the new terminal at Fort Garry has not been settled. The city demands that the track coming from the freight yards and crossing Main St., should be elevated, so as to be brought in over the viaduct. This, the company's officials state to be impossible owing to the short distance in which to make the 15 ft. rise. As a result the building of the viaduct has been suspended, and temporary arrangements are being made for the entry of trains. The Board of Railway Commissioners has already approved plans showing location and entrance to the Union Station, and the crossings at River Ave., Main St., South and Bell Avenues, and a route map showing a piece of line 0.305 mile long, as an entrance to the Union Station, has been approved by the Department of Railways.

The question of the using of branch lines for the conveyance of freight before they had been passed for traffic by the Government officials was before the Board of Railway Commissioners at Winnipeg, June 15. J. H. Ashdown, on behalf of the board of trade stated that it had always been the custom to carry freight over new railways before they had been inspected. At present there were about 750 miles of C.N.R. lines, and 250 miles of G.T.R. lines which could be used for the freight, but which have not been inspected.

The C.N.R. mileage stated to be affected is estimated by one newspaper at 615 miles, on nine different lines. Following is a table showing the mileage laid on each of these lines, with the starting and terminal points:

	Miles
Vegreville to Munson, Alta.	162
North Battleford to Mervin	50
Maryfield to Lampman, Sask	68



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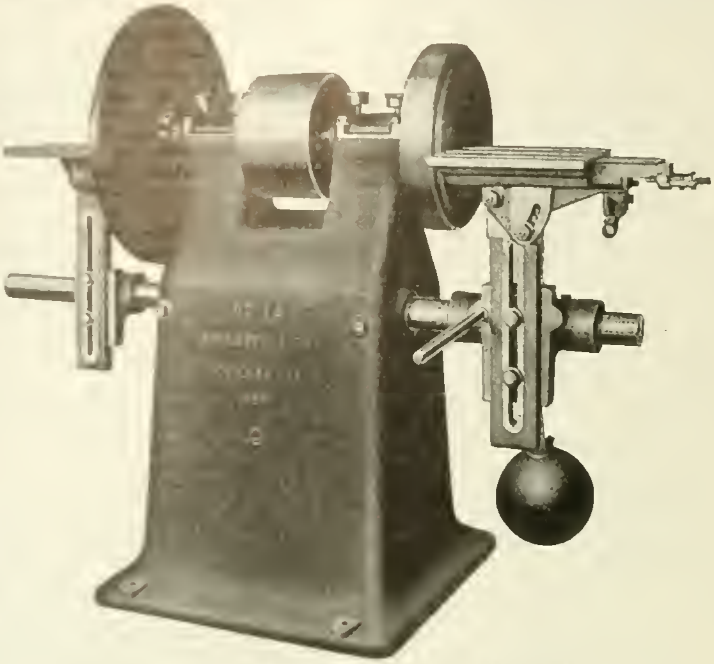

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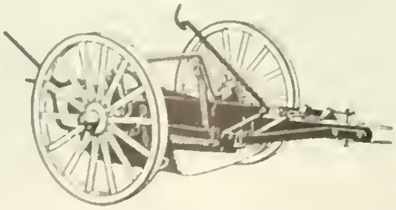

Luxton to Bienfait, Sask.	16
Paddington to Bird's Hill, Sask. ..	8
Hallboro to Beulah, Man.	75
Hudson Bay Jct. to Le Pas, Sask...	87
Shellbrook to Alsack, Sask.	49
Oak Point to Gypsumville, Man...	160

The Department of Railways has approved route maps of a line from Grosse Isle, Man., on the Oak Point branch, northerly for 36 miles; and of a line from Wassewa to Deloraine, Man., about 15 miles. It has also approved of revised route maps of part of the line from Davidson, Sask., westerly for about 20 miles, and of the line from Vonda, Sask., northeasterly for about 35 miles.

A contract has been let to Molloy Bros., Winnipeg, for the completion of the Rossburn extension to a junction with the main line at Canora, Sask., 12 miles.

A revised route map of the Prince Albert-Battleford line, between tp. 44, r. 8, and Denholm in tp. 42, r. 14, w. 3 m.; 73.9 miles has been approved by the Department of Railways.

On the Maryfield extension, which is being pushed westerly, approximately 60 miles of grading was done in 1910, and there is still about 30 miles to build. We are advised that a contract has been let to the Cowan Construction Co. for the completion of the line to Moose Jaw, Sask.

By an arrangement made, June 3, between M. H. McLeod, General Manager and Chief Engineer, the company's terminals in Calgary will be located on Seventeenth Ave. The arrangement was confirmed by the city council, June 12, and plans of the lay-out are to be submitted at an early date. The location of the line entering the city has not been finally disposed of, but it is expected that everything will be got in order so as to have the route pegged out by the fall. The company's engineers are making surveys for a line from Calgary to Lethbridge.

The Canadian Northern Alberta Ry. is being built under a Dominion charter, and being given by a guarantee of bonds to the amount of $13,000 a mile for the first 50 miles, and $25,000 a mile for the next 100 miles. The line proposed starts from near Strathcona, and proceeds in a generally southwesterly direction into the Brazeau River coal fields, and on to the headwaters of the McLeod River. M. H. McLeod, General Manager and Chief Engineer, in an interview at Strathcona, Alta., June 8, said construction would be started at an early date upon a line from Calgary southwesterly. The survey follows the C.P.R. for about six miles, bending northwesterly to east of Pigeon Lake, thence almost directly southerly to Red Deer, where connection will be made with other lines now under construction.

Press reports state that work was started June 1, by Macdonald and Davis, on the grading for a line from Strathcona to Camrose, on the Vegreville-Calgary branch. These contractors, it is reported, had expected to get to work on the line from Stettler, through Red Deer to the Brazeau River coal fields, but were stopped, and told to go on with the Strathcona-Camrose line.

The branch which has been in operation for some years from Edmonton to Morinville, Alta., 23 miles, is to be extended to Athabasca Landing, a further 75 miles. The contract for this has been let to the Northern Construction Co., and the work is in progress.

The line to Peace River starts at Onoway, on the main line, west of St. Albert, and near Lac Ste. Anne, and runs northwesterly. A contract has been let to the Northern Construction Co. for building 50 miles, and it is expected that 40 miles will be completed this year.

Canadian Northern Pacific Ry.—T. H. White, Chief Engineer in charge of construction and surveys, and S. H. Sykes, Assistant Chief Engineer, recently completed an inspection of the work in progress on the line under contract between Port Mann and Hope. The work is well advanced all the way and it is expected to have the track laid on the section by Nov. 1. An arrangement has been made by which the Great Northern Ry., through the Vancouver, Victoria and Eastern Ry., will connect with the C.N.P. Ry. at Sumas, run over the C.N.P. R. to Hope, 38 miles, switching off to its own line, which is now being pushed westerly from Peneticton to Hope.

We were advised, June 20, that contracts for the grading, etc., of the three sections from Hope to Kamloops, 163 miles, had not then been let.

The work of revising the surveys for the line between Kamloops and the Yellowhead Pass was begun, June 1, by a survey party in charge of W. I. Basset, who will work from the Pass to Albrida Summit, 183 miles, where he will meet a second party working easterly from Kamloops.

Vancouver Island.—A meeting has been held at Victoria, B.C., when the Minister of Public Lands and representatives of the various railways discussed the question of the utilizing of the Soughees Reserve, which has been acquired, under the authority of the Dominion Parliament for railway and other purposes.

The location surveys are reported to have been completed to Cowichan Lake, about 80 miles from Victoria, and four parties are working on the surveys between that point and the Alberni canal.

Canadian North-Eastern Ry.—We are advised that all grading and track laying will be completed to Red Cliff, B.C., mileage 13.5, the proposed terminus, by Aug. 1. The track end at June 1 was at Glacier Creek, mileage 5.7. A spur, 1,500 ft. long, to the Portland Canal concentration at Stewart, is expected to be completed July 1, when ore shipments will be started. Ore bunkers are under construction at Red Cliff, and are expected to be completed by Aug. 1. The following structures have been erected at Stewart: Station and freight shed, freight shed or wharf, engine shed, machine shop, blacksmith shop, storehouse, watertank and turntable. Freight sheds will be erected as necessity requires at Glacier Creek, Bitter Creek and Red Cliff.

A general meeting of citizens was held at Stewart, June 7, when a resolution was passed requesting the Provincial Government to aid in the building of the line from Stewart to a connection with the Canadian Northern Ry. (June, pg. 525.)

◆

C.P.R. Hotels.—The Hotel Kootenay Lake, at Balfour, B.C., which is expected to be open for business July 1, contains 50 rooms. T. Kenna, heretofore rooming clerk at Chateau Frontenac, Quebec, and formerly manager Roberval Hotel, Roberval, Que., has been appointed manager. A new hotel will shortly be erected at Calgary, Alta., containing 250 rooms. P. Shulz, formerly connected with the Hyde Park Hotel, London, Eng., has been appointed assistant manager, Royal Alexandra Hotel, Winnipeg. G. H. Rawlins, heretofore assistant to the manager, Banff Springs Hotel, Banff, Alta., has been appointed manager. H. L. T. Pigou, heretofore at Chateau Frontenac, Quebec, has been appointed manager, Mount Stephen House, Field, B.C. F. L. Hutchinson, manager, Chateau Frontenac, Quebec, will act as assistant to Hayter Reed, Manager in Chief, C.P.R. Hotels, during the summer, in the west, and will also be succeeded, temporarily, by F. McMahon, assistant manager.

N.T.R. Shops at Transcona.

The National Transcontinental Railway Commissioners will receive to July 11, tenders for the construction of the following car shops:—

At Transcona, near Winnipeg.

Scrap Platform and storage bins, 200 by 35 ft.

Dry kiln 40 by 70.

Wheel and machine shop, 74¾ by 164¾ ft.

Freight car shop, 604¾ by 199¾ ft.

Planing mill, 304¾ by 104¾ ft.

Paint storehouse, 39 ft. 7 ins. by 48 ft. 7 ins.

Coach paint shop, 344¾ by 91¾ ft.

Coach shop, 204¾ by 124¾ ft.

Car Department office, 68 by 60 ft.

Motive Power Department office, 68 by 60 ft.

Contractors are requested to send in a bulk price for the work. The 10 buildings, with their equipment, are estimated to cost about $2,500,000, which will bring up the cost of the whole of the shops at this point to upwards of $6,000,000.

A plan of the entire layout of the shop plant at Transcona was given in our issue of Sept., 1910, pg. 717, and a detailed description of the whole of the buildings was given in our issue of Aug., 1910, pg. 633. The buildings to be erected under the contract now being arranged are shown in the plans in our September issue as being north of the tracks running through the centre of the yard, north of the water tank and power house. The dimensions of certain of the buildings to be erected vary from the figures given in the article referred to, but the variation is unimportant. The contractors are also called upon to furnish an indirect heating apparatus and a yard crane runway for these buildings, together with the necessary lumber sheds.

◆

Locomotives for Government Railways.

The Minister of Railways, in answer to a question in the House of Commons recently stated that the following locomotives had been bought from 1896 to 1910. The figures in the column after the year show the number of locomotives bought. The price mentioned is per locomotive:—

INTERCOLONIAL RAILWAY

1898	2	Canadian Locomotive Co............	$14,500 00
	2	Baldwin Locomotive Works	10,000 00
1899	1	Canadian Locomotive Co.	14,500 00
	2	Canadian Locomotive Co............	12,000 00
	20	Baldwin Locomotive Works.......	9,700 00
1900	1	Canadian Locomotive Co..... ..	9,798 40
	1	Canadian Locomotive Co........ .	12,000 00
1901	10	Manchester Locomotive Co.	15,500 00
	9	Manchester Locomotive Co.	13,500 00
	20	Canadian Locomotive Co.	19,000 00
	6	Dixon Locomotive Co.	15,000 00
	10	Richmond Locomotive Co....	14,817 65
1902	6	Dixon Locomotive Co......	15,000 00
	4	Canadian Locomotive Co	17,681 88
1903	11	Canadian Locomotive Co.	20,270 00
1904	15	Canadian Locomotive Co.	20,270 00
	5	Canadian Locomotive Co.	17,500 00
1905	10	Canadian Locomotive Co.	20,300 00
	12	Canadian Locomotive Co.	23,950 00
1906	5	Canadian Locomotive Co.	18,430 00
	1	Canadian Locomotive Co.	21,950 00
	15	Locomotive and Machine Co	21,000 00
1907	19	Canadian Locomotive Co..	21,950 00
1908	32	Canadian Locomotive Co	21,950 00
	3	Canadian Locomotive Co............	18,430 00
	10	Locomotive and Machine Co.	24,000 00
1910	10	Canadian Locomotive Co............	19,600 00
	1	Locomotive and Machine Co........	22,500 00

PRINCE EDWARD ISLAND RAILWAY

1899	2	Canadian Locomotive Co.	8,250 00
1900	2	Canadian Locomotive Co.	8,780 00
1902	2	Canadian Locomotive Co.	10,150 00
1904	4	Canadian Locomotive Co.	9,450 00
1905	1	Canadian Locomotive Co.	9,450 00
1907	4	Canadian Locomotive Co.	13,250 00

◆

W. Fair, agent Canadian Northern Ry. at West Fort William, Ont., was arrested June 10 on a charge of embezzling about $700.

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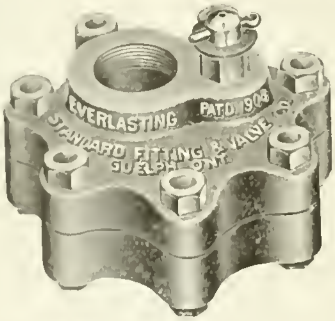

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Railway Commissioners' Traffic Orders.

Summaries of other traffic orders are given on another page under "Orders by Railway Commissioners":—

White Pass and Yukon Ry. Rates.

13765. May 29. Re order 7246, June 16, 1909, made upon the application of the Board of Trade of Dawson, Yukon, directing the British Yukon Ry. Co., the British Columbia Yukon Ry. Co., the Pacific and Arctic Ry. and Navigation Co., and the White Pass and Yukon Ry. Co. to file with the Board (1) tariffs of the companies' tolls covering all through traffic received at Skagway and destined to White Horse, or to any intermediate point or points between the International boundary line between Alaska and British Columbia, upon the line of railway, and White Horse: covering all through traffic received at any point or points upon the railway between White Horse and the International boundary, and destined to Skagway. And re the tariffs filed in pursuance thereof: Upon reading the application of the companies, for an extension of time for filing the tariffs required by order 12783, Jan. 18, 1911, and order 13292, Mar. 23, 1911, and for the written reasons given, it is ordered that the application be refused, and that the companies are declared to be subject to a penalty of $100 a day for every day's default in compliance with order 12783, as extended or amended by order 13292.

Chief Commissioner Mabee gave the following judgment:—Under the order of March 4, formally issued on March 23, the effective date for the tariffs required to be filed under the order of Jan. 18, was extended to June 1, because it was thought that the appeal to the Governor-in-Council could not be heard and disposed of before the date that the tariffs were required to be put into effect. By letter of May 23, received by me on May 28, application is now made to extend this date to Nov. 15 or Dec. 1. No reasons are given for this extension, except it is alleged that "it is quite evident now that it will be impossible to dispose of the appeal to the Governor-in-Council until some time in the autumn." Nothing whatever is said about the delay from March until the present time. On the other hand the Board learns that when it made the order extending the time to June 1, Mr. Berdoe, General Manager of the road, telegraphed to White Horse as follows: "Application of order reducing rates suspended indefinitely." This was a misleading message, quite contrary to the fact, as the time was definitely fixed as June 1. The telegram, however, probably is an indication that it was thought all the company need do was to make another application and it could get further extensions, perhaps "indefinitely." In addition to this, the company, by a general notice, withdrew after April 1, all tariffs naming through freight and passenger rates between Seattle, Tacoma, Port Townsend, Vancouver and Victoria, and points on the White Pass and Yukon Route, and connecting lines via Skagway, the result of which is disclosed by the following telegram from the Secretary of the Dawson Board of Trade, dated May 25: "Dawson Board of Trade finds White Pass Ry. tariff April 1 has by the cancellation of through rates from Seattle, Vancouver, to Dawson, and abolishing of commodity group rates raised freight rates from $2 to $15 a ton on staples mostly used in the territory over rates of last season basing steamship charges from Seattle or Vancouver to Skagway at $10 a ton." The Board's order required tariffs filed effective April 1 reducing the tolls upon the railway by 33⅓%. As matters now stand the extension of time already given to these companies seems to have enabled them to increase their already burdensome tolls, as appears in the telegram from Dawson. The Board is asked to perpetuate this state of affairs until Nov. 15 or Dec. 1, if not "indefinitely." Instead of so doing an order should issue subjecting these companies to a penalty of $100 a day for every day they are in default in filing and bringing into effect tariffs in compliance with the order of Jan. 18, 1911.

The White Pass and Yukon Ry. appealed to the Governor in Council, and a press dispatch states that the Board of Railway Commissioners has been directed to re-open the matter.

Supplement to Canadian Classification

13850. June 2.—Re application of Canadian Freight Association, under sec. 321 of the Railway Act, for the approval of proposed Supplement 1 to Canadian Classification 15, and re application of the Philips Manufacturing Company, Toronto, for a reduction in the present ratings of plate or mirror glass. It is ordered that the new and amended ratings embodied in the said proposed Supplement 1 to Canadian Classification 15 be approved, with the exception of the proposed ratings of the following articles, the application with respect to which is hereby refused, namely:—Common window glass, united outside measurement over 120 ins., in carloads; cathedral glass, rolled, comprising all varieties of cast or colored glass, not framed or leaded; chipped or ground glass; wired glass, not polished; tin cans, oil, with or without woodboard jackets, or not otherwise specified; loose, in carloads; tin cans, not nested, in crates, boxes, or barrels, in carloads; tinware, loose, in carloads; empty crates. And it is also ordered that the following amended or new ratings be provided, namely:—(a), Glass, ribbed or rough, cathedral (rolled, comprising all varieties of cast or colored glass, not framed or leaded), chipped or ground, and wired (not polished), at the same ratings as provided for common window glass; (b), tin cans, not nested in crates, boxes or barrels, c.l., minimum weight 20,000 lbs. per car, 5th class; (c), crate stuff, in bundles or shooks, l.c.l. 4th, c.l. 10th class; to be added to the lumber list, also, the words "set up" to be added to the present ratings for empty crates; (d), cordwood and pole saws, l.c.l., set up, 1½ 1st class, knocked down, 2nd class, to be added to the agricultural implement list, with permission to add also to the machinery list should the applicant so desire; (e), lead washers, in boxes, c.l., 5th class. And it is also ordered that in view of the apparent misunderstanding and lack of evidence with respect to the proposed ratings for meats, etc., in glass or earthenware, the said proposed ratings be withdrawn, with leave to renew the application after reconsideration by the applicant. And it is further ordered that the application of the Philips Manufacturing Co. for a reduction in the ratings of plate or mirror glass, not exceeding 80 united inches, from l.c.l. 1st, c.l. 3rd class, to l.c.l. 2nd, c.l. 4th class, be refused.

Rates on Rice.

13852. June 1.—Re application of Mount Royal Milling and Manufacturing Co., of Montreal, complaining that the G.T.R. and C.P.R. Companies unjustly discriminate against rice manufactured in the province of Quebec by giving preferential rates to cleaned rice from Great Britain, arriving at Montreal by ocean steamships, and re-shipped from Montreal Wharf in competition with the product of the applicant's mills to the same Canadian destinations; and that the rates on cleaned rice from Montreal are unreasonably high in comparison with the rates from Boston to the said destinations in Canada, through Montreal. Upon the application of the Chairman of the Advisory Committee of the Canadian Freight Association, and the consent of the applicant, and upon the recommendation of the Chief Traffic Officer of the Board, it is ordered that "Rice, not otherwise specified, in packages," as described in item 15, pg. 37, Canadian Classification 15, be carried between all points in Canada east of and including Fort William, Ont., by all railway companies subject to the jurisdiction of the Board, at 4th class rates in less than carload lots; the said rates to be provided for by special commodity tariffs to take effect not later than June 15, 1911. And it is further ordered that order 12275, April 29, 1910, be rescinded

Trespassers on Railway Right of Way

—The following circular, signed by James Oborne, General Superintendent, Ontario Division, C.P.R., Toronto, has been issued to sectionmen, bridgemen, station and yard staff, signalmen, watchmen and constables on the division: "Government statistics having shown that 75% of the people killed in Canada during the past year were trespassers, you are hereby instructed that trespassing on the company's right of way must not be allowed, even though it may be necessary to invoke the aid of the law in suppressing it."

Manual of Statistics.—The 23rd annual issue of this valuable work of reference for investors has been issued. The new edition contains 1,092 pages of general information, and the annual reports of railway, steamship and industrial corporation, giving the latest available facts about them. The 200 pages at the end contain a large amount of information in tabular form, showing the movement of the principal stocks on the important exchanges during the year. Everything is so arranged that the information desired on any one point, or in reference to any single company, or any group of companies, is readily accessible. It is published by the Manual of Statistics Co., 20 Veysey St., New York City, and the price is $5.

Montreal to Hudson Strait.—A London, Eng., syndicate, the Canadian end of which is headed by Sir Wm. Mackenzie, Toronto, is reported to be promoting a scheme of development in northern Quebec. The reports state that the syndicate has acquired coal mining properties in Nova Scotia, large holdings of real estate in Quebec, and mining areas in the Porcupine district of Ontario. While these will be developed, it is stated that the principal undertaking will be the building of a railway giving connection between Montreal and Bearon Point on Hudson Bay Strait, about 1,000 miles. The report adds that this will be known as the St. Lawrence and Ungava Ry.

The Dominion Steel Corporation has declared a quarterly dividend of 1%, payable July 3 to shareholders of record June 20.

The G. T. Pacific Ry. is taking action in the British Columbia courts to have various companies restrained from using the words "Grand Trunk Pacific" as part of their titles. It is alleged on behalf of the railway that the use of the words gives rise to a belief that these companies are associated and operated in connection with the G. T. Pacific Ry.

Canadian Vickers, Ltd., has been incorporated under the Dominion Companies Act, with a capital of $5,000,000, and offices at Montreal, to carry on a general business as steel makers and manufacturers and all operations incidental thereto; also the business of shipbuilders, shipwrights, etc., and to build, repair and deal in vessels of every description, and all kinds or ordnance, arms and ammunition. The incorporators are A. Vickers, Sir A. T. Dawson, Sir V. H. P. Caillard, of Vickers, Ltd., London, Eng.; F. O. and J. G. Lewis, Sir H. Montagu Allan and P. Mackintosh, Montreal.

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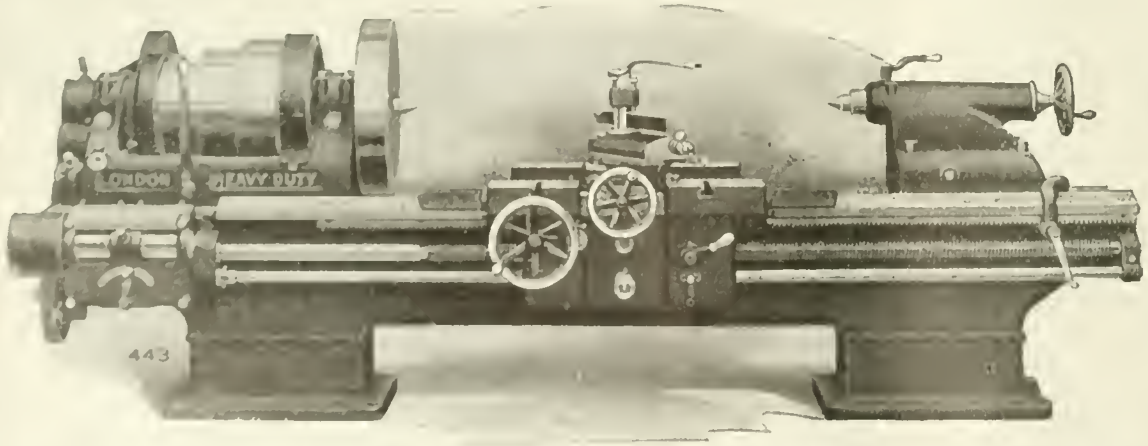

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Railway Rolling Stock Notes.

The Duluth, Winnipeg and Pacific Ry. has ordered 350 box cars and 150 flat cars in the U.S.

The Intercolonial Ry. has ordered three colonist cars from the Canadian Car and Foundry Co., Montreal.

Kennedy and McDonald, railway contractors, have received 10 flat cars from the Nova Scotia Car Works, Ltd., Halifax.

The G.T.R. has ordered 1,000 36 ft. steel under frame box cars from the Canadian Car and Foundry Co., Montreal.

The G.T.P.R. has ordered 20 consolidation, 15 Pacific type, and 10 switching locomotives from the Montreal Locomotive Works.

The G.T.P.R. has received four colonist cars, nos. 3020, 3025, 3026 and 3027, from the Canadian Car and Foundry Co., Montreal, and 10 sleeping cars from the Pullman Co.

The Grand Trunk Pacific Ry. has placed an order with the Montreal Locomotive Works, for 20 consolidation, 15 Pacific type and 10 switching locomotives, for delivery between July and October.

With reference to the report mentioned in our last issue that the C.P.R. was to build a number of observation cars for the Austrian State railway system, we are officially advised that the statement is entirely incorrect.

The C.P.R. is reported to be considering the question of installing soda fountains on its transcontinental trains. No definite decision has been arrived at, and we are advised that it is not improbable that such an innovation may be tried.

A mortgage agreement has been deposited with the Ontario Secretary, between the Algoma Central and Hudson Bay Ry., the Superior Rolling Stock Co. and the National Trust Co., regarding certain rolling stock covered by a conditional sales agreement, to secure a bond issue by the car company.

The Board of Railway Commissioners notified railway companies June 8 to file within 60 days a statement showing the number, class and weight of each locomotive on the line, and whether or not equipped with dump ash pans to avoid the necessity of men going underneath the locomotive.

The Canadian Northern Ry., between May 15 and June 15, ordered 40 flat cars, 30 tons capacity, from the Canadian Car and Foundry Co., Montreal; 10 second class coaches, from the Crossen Car Manufacturing Co., Cobourg, Ont., and 10 switching locomotives from the Montreal Locomotive Works.

In reference to the information published in our last issue as to the use of crude oil for fuel on C.P.R. locomotives on the Pacific Division, we are officially advised that it is the intention to use it between Vancouver and Revelstoke should it prove economical. The question is in abeyance at present, but will be again considered a little later on.

Following are the chief details of the 60 Hart-Otis steam shovel clay cars, which the Laprairie Brick Co. has ordered from the Hart-Otis Car Co., Montreal:

Length over end sills	8 ft. 9 ins.
Length inside	4 ft. 9 ins.
Width inside	4 ft. 6 ins.
Height inside	3 ft. 9 ins.
Height from rail to top	5 ft. 10½ ins.
Wheel base	6 ft. 6 ins.
Capacity	3 yds.

The Canadian Northern Ry., between May 15 and June 15, received the following additions to rolling stock: 50 box cars, five first class cars, from the Canadian Car and Foundry Co., Montreal; 190 box cars from the Nova Scotia Car Works, Halifax; four second class cars, 65 stock cars, from the Crossen Car Manufacturing Co., Cobourg, Ont.; 60 Hart cars from the Hart-Otis Car Co., Montreal, and 14 locomotives from the Montreal Locomotive Works.

The C.P.R. is building at its Angus shops, Montreal, some parlor-buffet cars, with observation room on each. This latter feature extends the full width of the car, with 12 chairs, and communicates direct to the observation platform. The main part of the car has seating capacity for 24 persons, with writing table and lavatory accommodation. Following are the chief dimensions:—

Length of car	72 ft. 8 ins.
Observation room	18 ft. 11¼ ins.
Main compartment	37 ft. 2 ins.

The C.P.R., between May 15 and June 12, placed the following orders for rolling stock: 12 switching locomotives, one first class car, 1,210 box cars, four freight refrigerator cars, 19 stock cars, six vans, one ore car and seven ballast cars, at its Angus shops, Montreal; 15 N. 3 locomotives, at the Montreal Locomotive Works; 500 steel frame box cars, and 13 steel flat cars at the Canadian Car and Foundry Co., Montreal; and 500 steel frame box cars, 402 steel coal cars in the U.S.

The C.P.R., between May 15 and June 12, received the following additions to rolling stock: Two D. 10 locomotives, one hump switching locomotive, one Mallett locomotive, 26 suburban cars, 230 box cars, 17 refrigerator cars (passenger), five sleeping cars, eight vans, 258 stock cars, 21 box baggage cars, and one superintendent's business car, from its Angus shops, Montreal; two D. 10 locomotives from the Canadian Locomotive Co., Kingston, Ont.; 329 steel flat cars from the Canadian Car and Foundry Co., Montreal, and one pile driver from the U.S.

Following are the chief details of the 20 Hart convertible cars, which the C.P.R. has ordered from the Hart-Otis Car Co., Montreal, and which are being built by the Canadian Car and Foundry Co., Montreal, as previously reported:

Length over end sills	36 ft. 8 ins.
Length inside as gondola	34 ft. 8 ins.
Length inside as hopper car	20 ft. 10 ins.
Width over side sills	8 ft 10 ins.
Width inside	8 ft. 8 ins.
Width overall	10 ft 2¼ ins.
Width st top	9 ft. 10 ins.
Height from rail to top of floor	4 ft. 4⅛ ins.
Height from rail to top of car	8 ft. 1⅜ ins
Height inside	3 ft. 9¼ ins
Bolsters and brake beams	Simplex
Side bearings	Susemihl

Following are chief details of the 15 Hart convertible cars, which the Prince Edward Island Ry. is building at its Charlottetown shops, under license from the Hart-Otis Car Co., Montreal, as mentioned in our last issue:

LeLngth over end sills	34 ft. 8 ins.
Length inside as gondola	32 ft. 8 ins.
Length inside as hopper	20 ft. 10 ins.
Width inside	7 ft. 5½ ins.
Width overall	9 ft.
Height from rail to floor	4 ft. 1⅝ ins.
Height inside	3 ft. ¼ ins.
Height from rail to top	7 ft. 1⅞ ins.
Length of hopper opening	16 ft. 9 ins.
Width of hopper opening	2 ft
Number of hopper doors	1
Number of side doors	12
Couplers	Tower
Brakes	Hand and Westinghouse air
Bolsters and brake beams	Simplex

The C.P.R. is building, at its Angus shops, Montreal, a number of sleeping cars, each consisting of seven state rooms with the corridor along the side, with drawing room and observation room. The staterooms, each 6 ft. 2¼ ins., are equipped with complete toilet accommodation, the drawing-room is located at one end of the car, and the observation room at the other. The latter, which is 10 ft. 11½ ins. long, the full width of the car, has eight chairs, and communicates direct to the observation platform. Following are the chief dimensions:

Length of car	72 ft. 8 ins.
Length over buffer beams	78 ft. 1 in.
Observation platform	3 ft.
Observation room	10 ft. 11½ ins.
State rooms, each	6 ft. 2¼ ins.
Drawing room	6 ft. 3 ins

Following are chief details of the 11 D-10g locomotives which the C.P.R. is building at its Angus shops, Montreal, 10 of which were mentioned in our last issue:—

Weight on drivers	142,000 lbs.
Total weight	193,000 lbs.
Cylinders, diar. and stroke	21 by 28 ins.
Valves	Piston, 11 ins.
Boiler, type	Extended wagon top
Boiler, pressure	200 lbs.
Heating surface, tubes	2,238 sq. ft.
Heating surface, firebox	180 sq. ft.
Heating surface, total	2,418 sq. ft.
Heating surface superheater	409 sq. ft.
Equivalent heating surface	3,032 sq. ft.
Tubes, no. and diar.	240 2 ins., 24 5 ins.
Tubes, length	11 ft. 2⅞ ins.
Firebox	8 ft. 6⅛ ins. by 5 ft. 9⅞ ins.
Grate area	49 sq. ft.
Capacity, coal	10 tons
Capacity, water	5,000 galls.
Axles, main	9½ by 12 ins.
Axles, other	9 by 12 ins.
Air brakes	Westinghouse ET 6
Headlight	Pyle National Electric
Valve gear	Walschaert
Superheater	Vaughan and Horsey

Following are the chief details of the five consolidation and five ten-wheel locomotives (nine being mentioned in our last issue), which the Duluth, Winnipeg and Pacific Ry. (C.N.R.) has ordered from the American Locomotive Co., and the Baldwin Locomotive Works, respectively:—

	Consolidation.	Ten-wheel.
Weight on drivers	165,000 lbs.	129,000 lbs.
Weight, total	186,000 lbs.	169,000 lbs.
Cylinders	23 by 26 ins.	22 by 26 ins.
Boiler, type	Extended wagon top	
Boiler, pressure	200 lbs.	
Heating surface, tubes	2,259 sq. ft.	1,746 sq. ft.
Heating surface, firebox	176 sq. ft.	183 sq. ft.
Heating surface, total	2,435 sq. ft.	1,929 sq. ft.
Tubes, no. and diar.		185 2 ins. 26 5⅜ ins.
Tubes, length	13 ft. 2½ ins.	
Firebox	114 by 41¾ ins.	113 by 40¼ ins.
Grate area	33.1 sq. ft.	31.6 sq. ft.
Capacity, water	6,000 gals.	5,000 gals.
Capacity, coal	12 tons	10 tons

The special equipment is the same in each case, as follows:—

Boiler lagging	H. W. Johns-Manville Co.
Brakes	Westinghouse
Brake beams	Simplex
Brake shoes	Diamond S
Journal boxes	McCord
Sight feed lubricators	Detroit
Springs	Wrought iron
Steam heating	Gold system 2 in. pipes
Superheater	Type B
Valve gear	Walschaert

The 10 sleeping cars which the G.T.P.R. has received from the Pullman Co. will be named Africa, Australia, Bermuda, Canada, Gibraltar, India, Tasmania, Trinidad, Victoria and Wales. They have steel underframes of the fish-belly type, with cast steel platforms and bolsters combined. The framing is a combination of steel and wood of the latest improved pattern, the bulkheads being re-inforced with heavy steel framing, representing an efficient anti-telescoping construction, sufficient to take all strains in the event of collision. The berths have been arranged to have increased head room, and are longer and wider than is customary. The inside finish is of polished Cuban mahogany, and the upholstering is of a closely woven plush, so that the chances of dust collecting are reduced to a minimum. The lavatories are equipped with all the most modern and most effective sanitary appliances. The lighting is a combination of electricity and gas, and improved oscillating fans and heating equipment with increased heating surface have been installed. Following are the chief details:

Length over end sills	73 ft. 6 ins.
Length over buffers	81 ft. 10 ins.
Width of body at lower deck crown moulding	10 ft. 3½ ins.
Width of upper deck	6 ft.
Height from rail to top of lower deck crown moulding	11 ft. 7½ ins.
Height from rail to top of roof	14 ft. 1 in.
Height from rail to top overall	14 ft. 5 ins
Height from rail to centre of coupler	2 ft. 11 ins.
Wheel base, on truck	10 ft. 6 ins.

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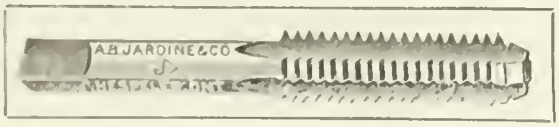

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There are no better Tools than "Jardine" Tools.

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Wheel base, total	68 ft.
Length of drawing room	6 ft. 4 ins.
Width of drawing room	6 ft. 8⅛ ins.
Smoking room	9 ft. 5 ins. by 6 ft. 6¾ ins.
Compartment	6 ft. 4 ins. by 6 ft. 8⅛ ins.
Parlor	31 ft. 9 ins. by 9 ft. 2½ ins.
Height, floor to under deck rails	8 ft. 2 ins.
Length inside	72 ft. 9 ins.
Width inside	9 ft. 2½ ins.
Roof	Standard
Weight	147,150 lbs.
Journals	9 ins. by 5 ins.
Journal box	McCord M.I. with steel inserts
Platforms	Steel
Couplers	Tower
Brakes	Westinghouse high speed and independent hand
Heating	Gold duplex system
Lighting	Gas and electric
Lamps	Safety Car Heating and Lighting Co.
Hoppers	Duner Co.

Railway Finance, Meetings, Etc.

Atlantic and Lake Superior Ry.—In the course of the proceedings arising out of the liquidation of the Charing Cross Bank, London, Eng., it was stated June 13, that the contract for the sale of the line to the Quebec Oriental Ry., which was financed by the bank, called for the payment of £50,000 cash to complete the purchase. It was understood that £20,000 had been paid.

Brockville, Westport and North-Western Ry.—An action has been entered in the Ontario courts by the Knickerbocker Trust Co. to recover $450,000 alleged to be due on account of principal of the company's bond issue, and $72,000 interest claimed to be due thereon.

The line was purchased at a foreclosure sale by U. S. interests, Jan. 20, 1903, and the company reorganized under this title, the only change from the old one being that "North-Western" replaced "Sault Ste. Marie." In June, 1910, the line was acquired by the Mackenzie, Mann and Co. interests, in connection with the development of the Canadian Northern Ontario Ry. and the Ontario and Ottawa Ry. Co. was incorporated with power to take over this as well as other lines.

Canada Southern Ry., Niagara, Grand Island Bridge Co., Niagara River Bridge Co.—The annual meeting was held at St. Thomas, Ont., June 7, under the chairmanship of N. Kingsmill, K.C. Following are the directors for the current year: W. K. Vanderbilt, F. W. Vanderbilt, C. M. Depew, W. H. Newman, W. C. Brown, J. E. Brown, E. A. Wilkes, L. C. Ledyard, New York, and H B. Ledyard, Detroit, Mich.

Canadian Pacific Ry.—There has recently been sold on the London, Eng., market $6,161,000 additional of the company's consolidate 4% debenture stock, to provide for the construction of 553 miles of branch line in Manitoba, Saskatchewan and Alberta.

Dominion Atlantic Ry.—Gross earnings for Apr., $82,400, against $86,236 for Apr., 1910. Aggregate gross earnings for 10 months ended Apr. 30, $1,046,600, against $1,136,171 for same period 1909-10.

Great Northern Ry.—An official announcement was made from the head office at St. Paul, Minn., May 31, of the issue of $600,000,000 of bonds to retire an issue of $330,000,000 of existing bonds, and to provide for the construction of new lines, additional rolling stock, etc. J. J. Hill, Chairman of the Board, stated that it was not intended to issue this amount of bonds at once, but to spread it over a number of years, according to requirements.

Quebec and Lake St. John Ry.—Total earnings for May, $46,881.11, against $44,804.13 for May, 1910. Aggregate total earnings for five months ended Mar. 31, $210,537.29, against $213,074.84 for same period 1910.

Quebec Central Ry.—Gross earnings for April, $103,715.54; expenses, $66,308.80; net earnings, $37,406.74, against $88,518.05 gross earnings; $57,184.77 expenses; $31,333.28 net earnings for Apr., 1910. Aggregate gross earnings for 10 months ended Apr. 30, $962,885.67; expenses, $660,355.63; net earnings, $302,529.94, against $885,440.80 aggregate gross earnings; $612,882.02 expenses; $272,558.78 net earnings for same period 1909-10.

Rutland Rd.—C. S. Mellen, L. C. Ledyard, and W. Skinner have been elected directors to represent the New York, New Haven and Hartford Rd. interests.

Temiscouata Ry.—Profit on operation for April, $5,194. Aggregate profit for four months ended Apr. 30, $6,964.

Temiskaming and Northern Ontario Ry.—Earnings for May, $113,515, and for week ending June 7, $37,284, against $116,889 and $26,971 for same periods, 1910.

United States and Canada Rd.—Following are the officers and directors for the current year:—President, C. M. Hays; Vice President, S. W. Foster; Treasurer and Assistant Secretary, F. Scott; Secretary, J. W. Gaudion; other directors, W. Wainwright, M. M. Reynolds, G. E. Britton, H. J. Elliott, F. J. Watson.

White Pass and Yukon Ry.—Gross earnings from Jan. 1 to May 7, $141,390, against $163,326 for same period 1910.

York and Carleton Ry.—The annual meeting was held at Stanley, N.B., June 6. Following are the officers and directors for the current year: President, D. R. Moore; Secretary, M. W. Crathy, other directors, F. Brown, Jas. Malone and Alex. Gibson, Jr. It is expected that this line will shortly be transferred to the Dominion Government to be operated as an I.C.R. branch.

A Few Words to Ticket Agents.

The following has been contributed by W. R. Russell, Agent, Canadian Northern Railway, Humbolt, Sask., who is a member of the Canadian Ticket Agents' Association, the International Ticket Agents' Association, and the National Association of Railway Agents:—

All ticket agents have a commodity to sell. It therefore behooves us to get all the information possible for the sale of that commodity. A great many never give a thought beyond the counter over which they hand the pasteboard, that the purchaser will ever come their way again. This is a very wrong idea, no matter who they may be, they have friends, and as such will talk about the treatment received from the ticket agent at such and such a point. This will travel very fast, and if not of a very cheerful nature, will travel more rapidly than that which will tend to raise the hopes in the breast of a ticket agent, therefore see that the talk is of such a satisfactory nature that it will get to the ears of the general passenger agent and other general officers of the company you represent, and will be of such a nature as to please the most fastidious official. If you are under the impression that you are not watched by the general officers, banish that from your mind. You are watched closely, and may never know it, therefore do as well as you can, give to each passenger as pleasant a smile as you possibly can, no matter whether they are dressed in silks, satins or cotton. Rich or poor, old or young, one passenger's money is just as good as another's. Never judge people simply by the clothes they wear.

Every ticket agent should take pride in his appearance. Look neat and clean, do not let your whiskers grow for a week without a shave. If you are at a small station and have baggage, etc., to handle, clothe yourself accordingly; it goes a long way with the travelling public. Show the knowledge you have, and impart it to those who are in need of it; sooner or later it will be appreciated.

When you get a tariff do not throw it in any old place and say to yourself, "I will never need that." This is a wrong idea, and the sooner you drop it the better. Place the tariffs when you get them in their proper place, if at all possible, or if your time is limited at the moment, place them where they will be seen by you when the duties of train service are past, then place them where they belong. You will need to refer to them some day sooner or later, then they will be where you can find them. Read them all, they are sent to you for that purpose. When you get a letter from the general passenger agent, give him all the information possible; you are on the spot, he is not; his duties are multifarious compared to yours, help him with your knowledge, he will appreciate it; if he does not he should. Keep a file for your correspondence, no matter how small it may be; see you have a copy of it, so you can refer to it at any time. In my opinion a great many remarks in this letter will apply to freight agents as well, or to those who act as freight and ticket agents.

There is one thing that should be taken into consideration by the managing officials of all railways, and that is, that each superintendent should have a division agent, who would be in a position to give his experience to the more inexperienced agent, and assist him in explaining things that he does not thoroughly understand. It would in time save a vast amount of work in the general offices. By a division agent I do not mean that he would be called upon to do the work of travelling auditor, special agent, or any duties that would be a drawback to that for which his appointment was made. Make his duties so that the average station agent would greet him with pleasure, and have a very friendly talk over matters in general and if anything should come up that would be of benefit to the company he would be in a position to lay the matter before the superintendent or other official who would require it.

I would like all ticket, freight, station agents and other employes to read the letter in the May issue of The Railway and Marine World, written by Mr. C. Murphy, General Superintendent of Transportation C.P.R. Eastern Lines, it has the right tone to it. To make a railway financially successful every employe must do his level best, and all work together, the same as all parts of a locomotive must work together, or it cannot do the work for which it is intended. All parts must work, therefore every employe must, or should do the same, to make it a paying investment for those who have their money invested. It is bread and butter for us.

The Canadian Freight Association will not have a trip in connection with its summer meeting this year, but will meet in Montreal.

The C.P.R. is offering a prize of $1,000 for the best 100 lbs. of hard red spring or winter wheat raised by any farmer in North or South America.

Coquitlam Terminal Co.—A company has been incorporated under the British Columbia Companies Act, with a capital of $750,000, to build electric or other tramways for the conveyance of passengers and freight: to build logging railways; to operate steam and other vessels; to build grain elevators; and to enter into agreements with companies carrying on similar enterprises. The offices of the company are to be in Victoria.

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TRANSPORTATION APPOINTMENTS.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Board of Railway Commissioners.—We were officially advised, June 14, that no appointment had then been made to fill the position of Assistant Chief Operating Officer, heretofore held by A. F. Dillinger, who has resigned.

Canadian Northern Ry.—W. Dixon, heretofore Soliciting Freight Agent, Montreal, has been appointed City Freight Agent, Montreal.

J. J. McKeown, heretofore in division freight office, C.P.R., Montreal, has been appointed Soliciting Freight Agent, C.N.R., Montreal.

R. W. Johnston, heretofore in the Freight Office, Canadian Lake Line, Montreal, has been appointed Soliciting Freight Agent, C.N.R., Montreal.

I. L. Boomer, heretofore train dispatcher at Port Arthur, Ont., has been appointed Chief Dispatcher, District 1, Port Arthur, Ont., vice W. A. Stuart, resigned to enter private business.

M. Helston, heretofore Chief Dispatcher, District 5, Saskatoon, Sask., has been appointed Chief Dispatcher, District 2, Winnipeg, Man., vice W. E. Roberts, promoted.

W. E. Roberts, heretofore Chief Dispatcher, District 2, Winnipeg, has been appointed Superintendent, District 6, with territory, Arizona Jct. to Canadian Northern Jct., Maryfield to Lampman, under construction; Luxton to Bienfait, under construction; M. & B. Jct. to Hartney Jct.; Brandon Jct. to Rossburn Jct.; Rossburn Jct. to Calder; Calder to Reihm, under construction; Hallboro to Beulah, under construction, a total of 701.1 miles. Office, Brandon, Man. This is a new district.

W. I. Munro, heretofore Chief Dispatcher, District 3, Dauphin, Man., has been appointed Chief Dispatcher, District 6, Brandon, Man. This is a new position.

F. T. Peebles, heretofore dispatcher at Dauphin, Man., has been appointed Chief Dispatcher, District 3, Dauphin, Man., vice W. I. Munro, transferred.

J. W. Crane, heretofore dispatcher at Saskatoon, Sask., has been appointed Chief Dispatcher, District 5, Saskatoon, Sask., vice M. Helston, transferred.

J. Madill, heretofore City Ticket Agent, C.P.R., Windsor, Ont., has been appointed City Passenger and Ticket Agent, C.N.R., Edmonton, Alta., vice W. C. Dodds, assigned to other duties.

Canadian Pacific Ry.—H. W. Newman has been appointed Travelling Freight Agent, Atlantic Division, St. John, N.B., vice C. J. Street, transferred to Montreal.

P. B. Motley, heretofore Assistant Engineer of Bridges, has been appointed Engineer of Bridges, vice C. N. Monsarratt, resigned, on his appointment as Chairman of the Board of Engineers in charge of the erection of the Quebec Bridge. Office, Montreal.

F. L. Ellingwood has been appointed Superintendent of Building Construction. He will have general charge, under the supervision of the Vice President, of such of the larger station buildings, hotels and other work as may be designated by the President or Vice President from time to time. He will appoint the requisite local superintendents, foremen and inspectors to insure proper workmanship on the part of contractors and others. Drawing and specifications for work under his charge will be issued through his office. Orders for extra work in connection with contracts will be issued by him and countersigned by the Architect. The circular announcing this appointment was signed by the President.

W. B. Way, heretofore Assistant Superintendent District 3, Eastern Division, Montreal, has been appointed Assistant Superintendent, District 3, Eastern Division, with jurisdiction over Quebec, St. Gabriel, Piles, St. Maurice Valley and Berthier subdivisions. Office, Montreal.

G. Curran has been appointed Assistant Superintendent, District 3, Eastern Division, with jurisdiction over Ottawa, Laurentian, St. Lin, St. Eustache and Buckingham subdivisions. Office, Montreal.

C. J. Street, heretofore Travelling Freight Agent, Atlantic Division, St. John, N.B., has been appointed Contracting Freight Agent, Montreal, vice W. O. Bovard, resigned to enter other business.

C. W. Lott, heretofore first trick dispatcher at Smiths Falls, Ont., has been appointed Chief Dispatcher, District 2, Eastern Division, Smiths Falls, Ont

F. W. Perry, heretofore Foreman Passenger Car Repair Shops, West Toronto, has been appointed Divisional Car Foreman, vice J. W. Kelly, assigned to other duties. Office, Toronto.

C. E. Rice, heretofore chief clerk, city ticket office, Brantford, Ont., has been appointed City Ticket Agent, Windsor, Ont., vice J. Madill, resigned to enter Canadian Northern Ry. service.

R. T. Moran, heretofore trick dispatcher, Sudbury, Ont., has been appointed Chief Dispatcher, District 1, Lake Supertor Division, Sudbury, Ont., vice J. O'Meara, who has been granted extended leave of absence.

E. J. Brien has been appointed Trainmaster, District 2, Lake Superior Division, Schreiber, Ont., vice W. Bartlett, transferred.

J. H. Hughes, heretofore acting Superintendent, District 2, Lake Superior Division, during the absence of W. B. Cronk, on leave, has been appointed Superintendent, vice W. B. Cronk, resigned. Office, White River, Ont.

W. J. Fidler has been appointed Storekeeper at Kenora, Ont., vice A. J. Forrest, promoted.

W. B. Lanigan, Assistant Freight Traffic Manager, Western Lines, issued a circular, June 15, announcing the organization of the Freight Traffic Department, Western Lines, as follows:—W. B. Lanigan, Assistant Freight Traffic Manager, Winnipeg, with general supervision of freight traffic, Western Lines, including British Columbia Coast steamers and Esquimalt and Nanaimo Ry., all matters relating to freight traffic under jurisdiction of the Board of Railway Commissioners, all questions relating to rates and divisions and transcontinental rates affecting Western Lines.

W. C. Bowles, heretofore General Freight Agent, Pacific Division, Vancouver, B.C., has been appointed General Freight Agent, Western Lines, covering all lines west of and including Port Arthur, Ont., in charge of interchange of traffic with connecting lines and freight solicitation. Office, Winnipeg.

G. H. Smith, heretofore District Freight Agent, Winnipeg city and terminals, has been appointed Division Freight Agent, Manitoba Division, with territory from Port Arthur and Fort William, Ont., to Harrowby, McAuley, Kirkella, Ebor, Sinclair and Pierson, Man., inclusive, and intervening lateral lines and branches. Office, Winnipeg. The position of District Freight Agent at Winnipeg has been abolished.

T. S. Acheson, General Grain Agent, in charge of grain traffic. Office, Winnipeg.

R. G. Holmes, Chief of Tariff Bureau, in charge of freight traffic publications and distribution of same. Office, Winnipeg.

D. C. Macdonald, heretofore City Freight Agent, Winnipeg, has been appointed Division Freight Agent, Saskatchewan Division, with territory, Marchwell, Welwyn, Fleming, Antler, Maryfield and Gainsborough to Macklin and Cummings, Sask., inclusive, and intervening lateral lines and branches. Office, Regina, Sask.

W. H. Allison, heretofore City Freight Agent, Regina, Sask., has been appointed District Freight Agent. main line Yorkton to Macklin, Sask., inclusive, reporting to Division Freight Agent, Regina, Sask. Office, Saskatoon, Sask.

John Halstead, heretofore Division Freight Agent, Western Division, Calgary, Alta., has been appointed Division Freight Agent, Alberta Division, with territory, Hayter and Walsh to Edmonton, Laggan and Sentinel, inclusive, and intervening lateral lines and branches. Office, Calgary, Alta.

H. C. McMullen, General Live Stock Agent, in charge of live stock traffic. Office, Calgary, Alta.

R. W. Drew, heretofore District Freight Agent, Saskatoon, Sask., has been appointed Division Freight Agent, Kootenay and Boundary Divisions, with territory, Crowsnest, B.C., to Kootenay Landing, Midway, Rossland, Trout Lake City, Nakusp to Sandon, and Slocan Jct. to Slocan City, inclusive, and intervening lateral lines and branches, including Arrow and Kootenay Lakes steamers. Office, Nelson, B.C.

R. E. Larmour, heretofore Division Freight Agent, Central Division, Winnipeg, Man., has been appointed Division Freight Agent, British Columbia Division, with territory, Stephen to Vancouver, inclusive, and intervening lateral lines and branches, and Esquimalt and Nanaimo Ry., Okanagan Lake service, B.C. Coast service, and all Pacific coast freight traffic. Office, Vancouver.

A. J. Cambie has been appointed District Freight Agent, with territory, Vancouver and Westminster terminals, Okanagan branch and Lake service. Office, Vancouver.

F. H. Clendenning, District Freight Agent, B.C. Coast service and Trans-Pacific steamers. Office, Vancouver.

W. H. Gardner. District Freight Agent, Esquimalt and Nanaimo Ry., Victoria, B.C.

A. J. Forrest, heretofore storekeeper at Kenora, Ont., has been appointed Assistant Stores Inspector, Western Lines, Winnipeg. This is a new position.

A. T. McKean has been appointed City Freight Agent, Winnipeg. Man., in charge of Winnipeg and St. Boniface terminal freight traffic.

R. A. Gamble, heretofore Fuel Agent, Calgary, Alta., has been appointed Car Service and Fuel Agent, Moose Jaw. Sask., vice R. R. Smart, who has been appointed a trick dispatcher there.

S. Lenard has been appointed Locomotive Foreman at Arcola, Sask., vice J. M. Mack, transferred.

K. Hove has been appointed acting Roadmaster, Mountain West and Arrow Lake Subdivision, British Columbia Division, vice T. H. Nichols, resigned.

R. K. Scarlett, heretofore city solicitor, Vancouver, B.C., has been appointed city ticket agent at Nelson, B.C., vice H. W. Edwards, transferred.

F. H. Daly has been appointed Travelling Passenger Agent, Western Lines west of Revelstoke, B.C. Office, Vancouver. B.C.

J. H. Fox has been appointed City Freight Agent, Vancouver, B.C., in charge of city freight traffic.

H. W. Edwards, heretofore City Ticket Agent at Nelson, B.C., has been appointed city ticket agent at Seattle. Wash.

The Nordisk Reisebureau have been appointed agents for the C.P.R., with office at 19 Belshaja Kenjushenaja, St. Petersburg, Russia.

Grand Trunk Pacific Ry.—N. B. Walton, heretofore Trainmaster, Districts 4, 5 and 6, Wainwright, Alta., has also

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Niagara River Line Steamers

Buffalo - Niagara Falls - Toronto
Route

The Gateway to Canada

Niagara Navigation Co., Limited
Toronto, Canada

been appointed Assistant to General Superintendent. Office, Winnipeg.

G. S. Cooke, heretofore Trainmaster, Districts 1, 2 and 3, Melville, Sask., has been appointed Superintendent, Lines Winnipeg to Watrous, Sask., both inclusive. Office, Melville, Sask. The position of Trainmaster, Districts 1, 2 and 3, has been abolished.

H. McCall, heretofore Trainmaster, Districts 7 and 8, Edson, Alta., has been appointed Superintendent, lines west of Edmonton, Alta. Office, Edson, Alta. The position of Trainmaster, Districts 7 and 8, has been abolished.

The following agents have been appointed:—Coblenz, Sask., J. O'Leary; Camrose, Alta., C. J. Mitchell.

Grand Trunk Ry.—W. H. Sample has been appointed Master Mechanic, Ottawa Division, vice R. Cowan, assigned to other duties. Office, Ottawa, Ont.

The following agents have been appointed:—Lisgar, Que., E. D. Auclaire; Stottsville, Que., J. A. Perrier; Laprairie, Que., J. P. Lazure; Findley, Ont., T. F. O'Neill; Bowmanville, Ont., E. R. Chapman (acting); North Bay, Ont., freight, R. Tyner; Toronto, Exchange, passenger, W. A. Lang; Hamilton, Stuart St., passenger, H. E. Everett; Thamesville, Ont., J. A. Pollock; Nelles Corners, Ont., C. W. Staib; Aylmer, Ont., F. H. Burthwick; Rouses Point, N.Y., passenger, J. L. O. Colomb; Kingsville, Ont., outside, C. P. Cooper.

Temiskaming and Northern Ontario Ry.—W. Oldham, heretofore Supervisor of Bridges, has been appointed Inspector of Bridges and Buildings, vice J. J. O'Neill, resigned to enter private business. Office, North Bay, Ont. The position of Supervisor of Bridges has been incorporated with that of Inspector of Bridges and Buildings.

Union Pacific Rd., Oregon Short Line Rd., Oregon-Washington Rd. and Navigation Co., Southern Pacific Co.—G. W Vaux, formerly General Passenger Agent, G.T.R., Montreal, has been appointed Travelling Passenger Agent for the above companies, at Toronto, vice J. O. Goodsell, transferred.

J. O. Goodsell, heretofore Travelling Passenger Agent at Toronto, has been appointed Travelling Passenger Agent, Detroit, Mich.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers to distinctly understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalant. Advertising contracts will not be taken with any conditiou that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

The Detroit Lubricator Co. has issued a leaflet about its "500" lubricator for air compressors.

The Ohio Brass Co., Mansfield, Ohio, has issued Catalogue K. devoted to Ohio valves and steam specialties, including the Ohio gauge cock, water gauge and pressure regulating valve.

The Baldwin Locomotive Works, Philadelphia, Pa., has been registered in British Columbia under the Companies Act, with C. W. Stancliffe, of Vancouver, as Agent.

The Buffalo Brake Beam Co., of New York City and Buffalo, N.Y., has established a factory at Brantford, Ont., to manufacture for its Canadian trade, brake beams for all classes of locomotives and cars, steam and electric.

The Consolidated Car Heating Co. held its annual meeting, June 12, when Cornell S. Hawley, theretofore Vice President, General Manager and Treasurer, was elected President and Treasurer, and C. C. Nuckols, theretofore Superintendent and Purchasing Agent, was appointed General Manager.

The Western Wheeled Scraper Co., Aurora, Ill., has issued a thoroughly illustrated catalogue of machinery for handling earth and stone, devoted to scrapers and plows, dump, quarry, rail and spreader cars, dump carts and wagons, ditching machines, elevating graders and wagon loaders, rock and oil crushers, and road graders.

The American Vanadium Co., Pittsburgh, Pa., in its American Vanadium Facts for May, gives a complete report of the address on vanadium in cast iron, before the American Foundrymen's Association, by G. L. Norris, the company's engineer of tests, also complete particulars of the exhibitors who co-operated in the production of cast vanadium products.

N. Curry, President Canadian Car and Foundry Co., visited Amherst, N.S., recently and arranged for the rebuilding necessary on account of the fire which occurred in May. A machine shop and grey iron foundry are to be provided for in one building 300 by 70 ft. Only a part of the forge shop was burned. This is being rebuilt; it will be 180 by 65 ft. The new buildings will be of concrete, with steel roofs, and are expected to be completed and in operation by Sept. 1. In the meantime operations are being carried on in the passenger car shop, rolling mill, axle shop, wheel shop, and malleable iron foundry.

The American Steel Foundries, Chicago, has issued a circular stating that the United States Circuit Court of Appeals for the Second Circuit has affirmed the decision of the Circuit Court in the case of the Simplex Railway Appliance Co. against the Pressed Steel Car Co. for infringement of the A.S.F. Simplex bolster patent. This makes permanent the injunction against the Pressed Steel Car Co. restraining it from the manufacture of the reliance bolster, and awards an accounting for damages for those already made. In the Circuit Court for the Northern District of Illinois, Judge Kohlsaat has entered a decree sustaining the Hardie patent, which covers the Andrews side frame, and holding that the Wolff truck frame, manufactured under the Harrington patent by the Scullin-Gallacher Iron & Steel Co. was an infringement.

Telegraph and Cable Matters.

The Canadian Northern Telegraph Co. has opened an office at Kakabeka Falls, Ont.

H. D. Windeler, heretofore at the Commercial Cable Co.'s station at Canso, N.S., has been appointed Superintendent at St. John's, Nfld.

The Order of Railway Telegraphers, which held its convention at Toronto recently, has decided to hold the next convention in 1913, in Baltimore, Md.

The C.P.R. has opened telegraph offices at French and Moffat, Ont.; Chelsea, Herbert and Ivry, Que.; Esk, Kandahar, Luseland and Salvador, Sask.

The cable steamer Mackay-Bennett recently completed the repairs to the cable between Port aux Basques, Nfld., and Canso, N.S., and proceeded to Halifax.

The Old Time Telegraphers' and Historical Association and the Society of the U.S. Military Telegraph Corps will hold their joint convention at Atlantic City, N.J., Sept. 5-7.

C. C. Wilson, President, United Wireless Telegraph Co., and four others have been sentenced to terms of imprisonment in U.S. penitentiaries for frauds in connection with the flotation and operation of the company.

A party of Western Union Telegraph Co. officials visited Vancouver early in June for an inspection of the company's property, and to arrange for the establishment of a faster and more efficient service with eastern and southern points. A new office is to be established at New Westminster, B.C.

The annual convention of the Association of Railway Telegraph Superintendents was held at Boston, Mass., June 26-30. A number of interesting papers were read and discussed, and an article was added to the constitution regarding the submission of various questions pertaining to railway operations as recommendations to the American Railway Association.

The Nova Scotia Telephone Co. decided, June 1, to accept the offer of the Maritime Telegraph and Telephone Co., to acquire its franchises and property, as from July 14. The terms offered are $135 for each $100 share, or in the alternative one $100 bond of the Maritime Telegraph and Telephone Co., at 6%, and $35 in cash, or $100 in 6% bonds, $30 in 6% preferred stock, and $30 in common stock, the option to be exercised by Sept. 20.

Press reports state that the Marconi Wireless Telegraph Co. has recently been conducting wireless telegraph communication with the west coast of Africa, by way of the Eiffel Tower in Paris, France, and that an efficient service was to be established between Canada and France. Our doubts as to the reliability of these reports have been fully justified, by an official statement, issued from the company's London, Eng., office, to the effect that no such communications have taken place, and that with the present plant, and under present conditions, the only points between which wireless communication is, and can be, efficiently carried on, across the Atlantic, are at Glace Bay, N.S., and Clifden, Ireland.

At the Imperial Conference held in London, Eng., during June, the question of cable rates and the laying of a cable between the United Kingdom and Canada, and the erection of land lines across Canada connecting with the Pacific cable, was under consideration. It was stated that the cost of laying a cable from Killala in Ireland to Newfoundland, with a connection to Nova Scotia, would be £480,000, and the cost of the land line across Canada, £120,000. The expense of operating was estimated at £215,000 and £32,500 respectively, and it was stated that there would be a saving of expense at present incurred, and an immediate revenue of about £36,000. After considerable discussion the following resolution was unanimously agreed to, on the motion of the British Postmaster General: "That in the event of considerable reductions in trans-Atlantic cable rates not being effected in the near future, it is desirable that the laying down of a State-owned cable between England and Canada be considered by a subsidiary conference."

Grain Elevator Notes.

The Goose Lake Elevator Co. is building an elevator at Wadena, Sask.

The Manitoba Elevator Commission has received tenders for dismantling the Winnipeg elevator at Roland, and rebuilding it at Jordan Siding.

The C.P.R. has awarded the contract for alterations and repairs to its Steel elevator D at Fort William, Ont., to John S. Metcalf Co., Ltd., Montreal. The work is to be completed in time for handling this year's crop.

W. White, in the employ of the John S. Metcalf Co., in the construction of

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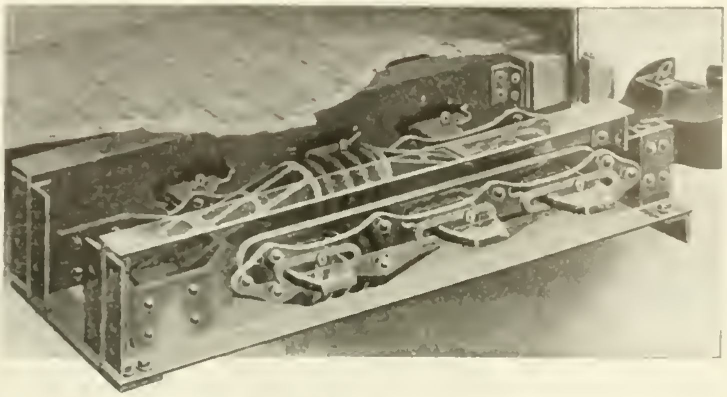

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The Ohio Brass Co., Mansfield, Ohio, U. S. A.

the addition to the G.T.R. elevator at Windmill Point, Montreal, was presented with a travelling bag recently, on his leaving for Fort William, Ont., to take charge, for the company, of the rebuilding of the C.P.R. elevator D.

The Saskatchewan Co-operative Elevator Co. will hold its first general meeting at Moose Jaw, July 6, the necessary 25 local companies having been arranged, as provided for by the act, before the company can be permanently organized.

The Dominion Flour Mills, Ltd., has awarded a contract to John S. Metcalf Co., Ltd., Montreal, for the construction of a re-inforced concrete grain elevator in connection with its new flour mill at St. Henri, Montreal. The capacity of the new erection will be 300,000 bush., and there will be a small working house built in connection with it.

The Montreal Harbor Commissioners have entered suit against the G.T.R., for an injunction to stop the erection of the extension to the elevator system at Windmill Point, on the ground that the site is the property of the Commission, and was leased to the company on the understanding that grain conveyors only would be permitted to occupy the ground, and that the ground on which the bins are being erected, is included in the general plan of amelioration for the harbor and covers what is proposed as a new opening to the Lachine canal, when the plan is fully carried out. The G.T.R. answers that the extension is required for its own benefit and for the benefit of the harbor, and that the work should not be held up by problematical works, to be carried out at an indefinite date. The application has been taken under consideration.

Among the Express Companies.

F. M. Smith has been appointed route agent for lines west of Fort William, Ont., with headquarters at Winnipeg, Man.

D. G. MacKenzie, heretofore Agent, Dominion Ex. Co., Calgary, Alta., has been appointed Agent at Brandon, Man., vice F. R. Jelfs, appointed to Calgary, Alta., as mentioned in our last issue.

The order of the Board of Railway Commissioners, extending the delivery limits of express companies, in cities, to the city boundaries, went into effect June 1.

Express companies in Canada are applying to the Board of Railway Commissioners to cancel section D of the classified rates, which covers general printed matter. It is stated that the hearing will not take place until the fall.

W. H. Plant, Traffic Auditor, Dominion Ex. Co., has been appointed Auditor in charge of all accounting, including the Western Ex. Co. The positions of Traffic Auditor and Auditor of Money Order Accounts have been abolished.

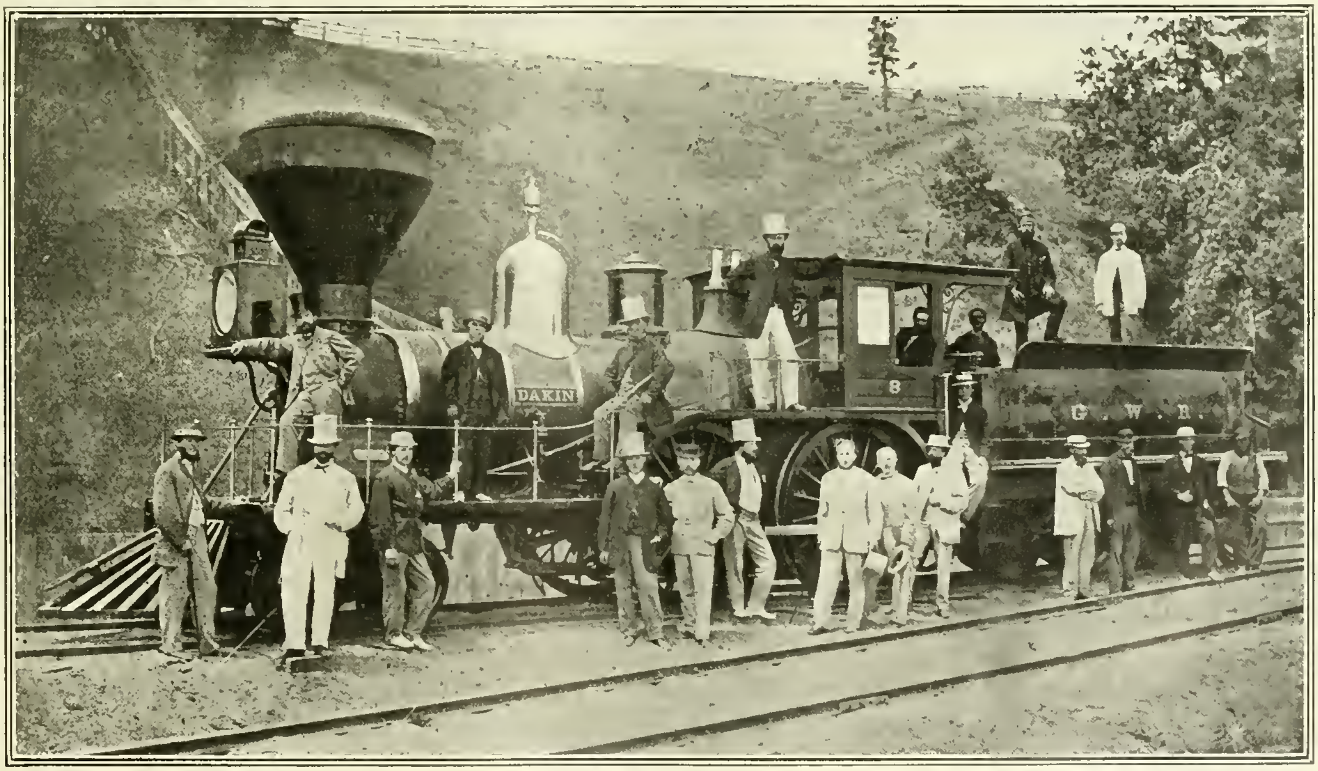
The Dominion Ex. Co. has announced that it has discontinued the practice of allowing shippers to use their own forms of receipt for shipments forwarded by express, and it has instructed its agents that its employes must sign no forms other than the regular forms supplied by the company.

The Canadian Northern Ex. Co. was fined $1,000, at Winnipeg, Jan. 12, for not obeying the injunction of the court restraining the returning officer in the Beautiful Plains election in 1909, from sending his official return to the chief clerk of the executive council. A stay was granted for 14 days.

The U.S. Treasury Department has approved placing on express way bills of the transportation entry numbers to appear in the upper right hand corner of the carriers' special manifests, and the placing on the special manifests accompanying goods, of the numbers of the express waybills, to aid in the identification of the goods covered by waybills.

The Dominion Ex. Co. notifies that it has made arrangements for the transportation of shipments to Gowganda and Wigwam. Value shipments will be held at Elk City and the consignee notified, and c.o.d. shipments will be held at the same place until the amount has been paid, after which, it will be forwarded to destination. All shipments are waybilled to Latchford, Ont.

The Board of Railway Commissioners has issued order 13881, June 7, re Note 18 to Scale N, Express Classification C.R.C. 2, substituting the following:—Note 12, includes grain (whole or cracked), chopped feed, bran, meal, ground meat (dried), dried bone, alfalfa meal, cut clover, ground screenings and crushed shells, but does not include condition powders, condiments or medicated or patented articles.



A LOCOMOTIVE ON THE GREAT WESTERN RAILWAY AT HAMILTON IN 1864.

The photograph from which this illustration is made, and for which we are indebted to the Hamilton Spectator, was taken at Hamilton in 1864, on the occasion of the visit to Canada of Sir Thos. Dakin, chairman of the G.W.R. Co., and Brackstone Baker, the Secretary, W. A. Robinson, of the D. Moore Co., Hamilton, who was then assistant mechanical superintendent of the line, has supplied the names of all the persons shown, except the conductor, whose name he cannot remember. The names are as follows:—

Upper Row—W. A. Robinson, Assistant Mechanical Superintendent; Geo. Forsythe, general foreman locomotive shops; Wm. McMillan, fuel buyer; Samuel Sharp, Mechanical Superintendent; J. Robertson, locomotive driver; W. Paine, fireman; conductor, name forgotten; —. Penny, attendant on official car.

Lower Row—Geo. Low Reid, Engineer; W. Wallace, Traffic Agent; G. H. Howard, W. Orr, G. B. Spriggs, J. Howard, Purchasing Agent; Thos. Swinyard, General Manager; Brackstone Baker, English secretary of the company; T. Bell, J. Hall, Foreman of Running Department; J. Weatherstone, Track Superintendent; J. A. Ward, Mechanical Accountant; P. Neilson, Station Agent at Hamilton; W. Wilson, Track Foreman.

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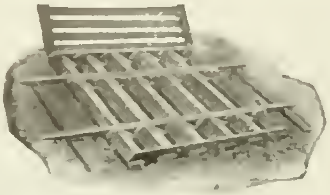

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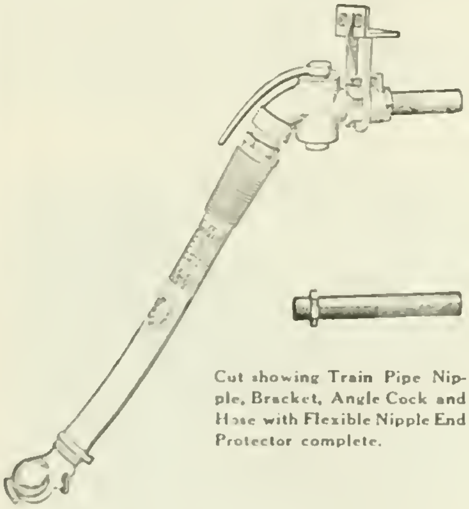

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ELECTRIC RAILWAYS

Canadian Street Railway Association.

President, James Anderson, General Manager Sandwich, Windsor and Amherstburg Ry.; Vice President, P. Dubee, Secretary, Montreal St. Ry.; Secretary-Treasurer, Acton Burrows, Managing Director Railway and Marine World.

Association's Office, 70 Bond St., Toronto.

Executive Committee.—E. P. Coleman, Manager of Railways, Dominion Power and Transmission Co.; H. M. Hopper, General Manager, St. John Ry.; J. E. Hutcheson, Superintendent, Ottawa Electric Ry.; C. B. King, Manager, London St. Ry.; D. McDonald, General Manager, Montreal St. Ry.; M. N. Todd, President, Galt, Preston and Hespeler St. Ry.

Assistant Secretary, Aubrey Acton Burrows, Secretary and Business Manager Railway and Marine World.

Official Organ, The Railway and Marine World.

Canadian Street Railway Association.

The annual meeting opened at Windsor, Ont., June 6, there being a large attendance of representatives of member companies from as far east as Halifax and as far west as Vancouver. In the unavoidable absence through pressing business of the President, Duncan McDonald, General Manager, Montreal St. Ry., Montreal, the Vice President, James Anderson, General Manager Sandwich, Windsor and Amherstburg Ry., occupied the chair.

The Executive Committee having reported in favor of admission to membership of the Chatham, Wallaceburg and Lake Erie Ry. Co., the Galt, Preston and Hespeler St. Ry. Co., Ltd., the Levis County Ry. Co., and the Peterborough Radial Ry. Co., they were unanimously elected.

The Secretary-Treasurer, Acton Burrows, presented an exhaustive report dealing with the Association's work during the past year, reviewing the Dominion and Provincial legislation affecting electric railways, the actions of the Board of Railway Commissioners and the various Provincial Boards having jurisdiction over electric railways, and giving a large amount of information on various subjects which had been collected at the instance of member companies.

The following papers were read and discussed:—"Let the Public Know," by A. Dexter B. Van Zandt, Publicity Manager, Detroit United Lines; "Private Plants versus Niagara Power," by J. Milne, Consulting Engineer, Sandwich, Windsor and Amherstburg Ry.; "Notes on Distribution of Power in Street Railway Operations," by Donald S. Barton, Consulting Engineer, Quebec Railway, Light, Heat and Power Company; "Shop Accounts," by F. P. Griffith Superintendent of Shops, Dominion Power and Transmission Company; "Checking Power Consumption on Cars," by D. E. Blair, Superintendent of Rolling Stock, Montreal Street Railway; "The Use of Tee Rails In Street Railway Construction," by F. G. Simmons, Superintendent Construction and Maintenance of Way, Milwaukee Electric Railway and Light Co.

The Board of Railway Commissioners having requested the appointment of a committee to compile a code of rules for the operation of electric railways to be submitted to the Board for approval, the following were appointed as the committee to deal with the matter:—J. Anderson, General Manager, Sandwich, Windsor and Amherstburg Railway; E. P. Coleman, Manager of Railways, Dominion Power and Transmission Co.; P. Dubee, Secretary, Montreal Street Railway; A. Eastman, General Manager, Windsor, Essex and Lake Shore Rapid Railway; G. Gordon Gale, General Superintendent, Hull Electric Co.; J. E. Hutcheson, Superintendent, Ottawa Electric Railway; W. R. Robertson, Superintendent, Niagara, St. Catharines and Toronto Railway.

The second day's meeting was held in Detroit, Mich., when J. Kerwin, Superintendent of Tracks, Detroit United Railway, gave an address on "Modern Track Building."

Considerable time was devoted to interesting topical discussions on various questions submitted by representatives of member companies relating to operating and other matters.

The election of officers for the current year resulted unanimously as follows:—President, James Anderson, General Manager, Sandwich, Windsor and Amherstburg Ry.; Vice President, Patrick Dubee, Secretary, Montreal Street Ry.; Secretary-Treasurer, Acton Burrows, Managing Director of the Railway and Marine World.

Executive Committee.—The President and Vice President, and E. P. Coleman, Manager of Railways, Dominion Power and Transmission Co.; H. M. Hopper, General Manager, St. John Ry.; J. E. Hutcheson, Superintendent, Ottawa Electric Ry.; C. B. King, Manager, London Street Ry.; D. McDonald, General Manager, Montreal Street Ry.; M. N. Todd, President, Galt, Preston and Hespeler St. Ry.

Assistant-Secretary-Treasurer, Aubrey Acton Burrows, Business Manager, Railway and Marine World.

A letter was read from R. H. Sperling, General Manager, British Columbia Electric Ry., inviting the Association to meet in Vancouver in 1912, and was referred to the Executive Committee.

On the evening of June 6 the representatives attending the meeting were the guests of the Sandwich, Windsor and Amherstburg Railway Co., being taken over the line from Windsor to Sandwich, and from there crossing to Bois Blanc Island, in Detroit River, where they were entertained at dinner, one of the chief features of which was delicious planked white fish. On June 7, Elmer J. Smith, Secretary and Treasurer of the Peter Smith Heater Co., Detroit, entertained a number of the representatives at luncheon at the Detroit Motor Boat Club, the automobile ride to and fro being much enjoyed. Late in the afternoon of June 7 the representatives went by special car accompanied by a number of the D.U.R. officials, whose guests they were, from Detroit to Toledo, Ohio, making the 70 mile trip in a little under 2 hours, including the slow run through both city limits and a stop of some 15 minutes at Munroe, Mich., to inspect the power house. At Toledo they were charmingly entertained at dinner by the D.U.R officials, and returned to Detroit about 10 p.m. James Anderson, General Manager, Sandwich, Windsor and Amherstburg Ry., who presided at the meetings in his capacity of Vice President, in the absence of the President, D. McDonald, and who also took the chair at the dinners at Bois Blanc and Toledo, was most assiduous in his attentions, and was ably assisted by a number of other D.U.R. officials, including H. Bullen, General Superintendent; T. Fullerton, Auditor; A. E. Peters, Assistant-Secretary; E. J. Burdick, Superintendent of Power.

The Peterboro Radial Ry. has ordered three 18½ ft. semi-convertible, pay-as-you-enter car bodies, 29½ ft. over all, mounted on 21-E trucks, and one heavy double broom electric snow sweeper from the Ottawa Car Co., Ottawa.

Toronto Suburban Railway.

The control of this company has passed into the hands of Sir William Mackenzie and associates. On June 20th an issue of £540,000 sterling 4½% debenture stock was offered in London, Eng., through the British Empire Trust Co., for the purpose of improving the existing lines and building extensions. We are advised that the present line will be relaid with heavier rails and otherwise improved and that an extension will be built from either Lambton or Weston to Guelph, so as to give a through line from the north end of Toronto to that city. A survey has already been made west as far as Brampton. Nothing is likely to be decided about construction until after Sir Wm. Mackenzie's return from England. But it is said to be likely that some work will be gone on with this year.

The company's capitalization, prior to the recent issue, was $1,500,000 common stock. The directorate was as follows: President, Allan H. Royce; Vice President, R. L. McCormick; other directors, G. C. Royce, Dr. G. Royce, R. B. Henderson. The officials are: G. C. Royce, Secretary-Treasurer and General Manager, and Agent; J. Rankin, Engineer of Power Station; J. Boyd, Master Mechanic; D. Kinsman, Roadmaster.

The company buys its power from the Electrical Development Co. of Ontario, which is also controlled by Sir Wm. Mackenzie. It has 10.26 miles of track, 4 ft. 10¾ in. gauge and has 15 motor and 2 other cars. It owns an amusement park at Lambton Mills..

Under the provisions of the Ontario Joint Stock Companies Act, and the Street Railway Act, there was incorporated by letters patent Nov. 12, 1890, the Weston, High Park and Toronto Street Street Ry. Co., and in the following year the Legislature changed the name of the company to the City and Suburban Electric Ry. Co., with power in addition to building railways between certain points to acquire not exceeding 100 acres of land for park purposes. On Oct. 5, 1891, an agreement was signed by J. S. McMurray, President, and L. L. McMurray, Secretary and Treasurer, on behalf of the company, with the Corporation of Toronto Junction, for a franchise for the building of an electric railway on any street or highway within the municipality, except such as had been included in the franchise granted June 8, 1891, to the Davenport St. Ry. Under this agreement a specific line was to be built along Conduit St., from the city limits to Keele St., thence northerly to Humberside Ave., thence westerly along the most direct route to Elizabeth St., thence northerly to Dundas St., to city limits, also along Keele St. northerly to the north limit of the town, on or before Sept. 1, 1892; connection to be made with the Toronto Ry. as soon as that system had been extended to any point to which the company has power to build. An indenture of mortgage securing an issue of $140,000 of 6% first mortgage bonds was given to the Trusts Corporation of Ontario, under date Feb. 1, 1893, in which it was set out that the company had built an electric railway (provided with power house and other equipment) on the following streets: Keele St., from St. Clair Ave. to Dundas St.; Dundas St., from Humberside Ave. to Lansdowne Ave.; Humberside Ave., from Dundas St. to Glendonwynne Road; Glendonwynne Road to Glenholme Drive, along Glenholme Drive to Fairview Ave., on to Louisa St., along Loulsa St., to Lans-

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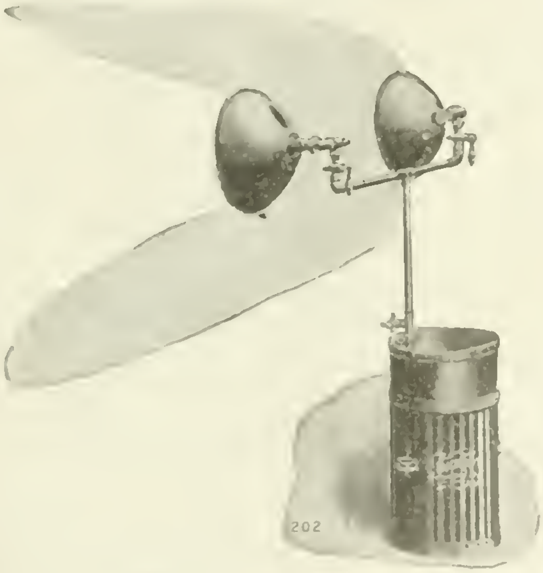

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downe Ave., and along this avenue to Dundas St. It was also set out that the company had acquired the Davenport Street Ry., built by a company incorporated by letters patent Feb. 11, 1891, under an agreement with the township of York, and the town of Toronto Junction. This line is described in the mortgage as extending from the crossing of Bathurst St., by the C.P.R., to St. Clair Ave., thence westerly along Davenport Road to St. Clair Ave., and along that avenue to Toronto Junction.; and the mortgage also covered the franchise granted within the limits of Toronto Junction. F. Turner was President and Allan Royce Vice President of the D.S. Ry. in 1891, and M. D. Barr was President in 1892. On April 20, 1893, a further agreement was made between the township of York and the D. S. Ry., by which rights of construction were granted from the southern boundary of Toronto Junction to the Lake Shore Road.

The D. S. Ry. was built by the Street Railway Construction Co., and in order to satisfy the claims of this company, a company was incorporated by the Ontario Legislature, May 5, 1894, with the title of the Toronto Suburban Street Railway Co., Limited, having power to acquire the railways, property, franchises and other assets of the two companies named, and amalgamate them under the title of the Toronto Suburban St. Ry. Co., Ltd.. The capital was fixed at $250,000, power being given to issue bonds to the amount of $20,000 a mile of line built. The provisional directors were: R. W. Smith, J. Torrance, A. W. Atwater, Montreal; R. H. Fraser, Toronto; H. W. Darling, Toronto, and Boston, Mass.

Having completed the amalgamation, the Toronto Suburban St. Ry. Co., Limited, operated 9.89 miles of line, extending from what was then the Toronto city boundary on Dundas St., along Dundas St. to Lambton, with a branch southerly to Evelyn Crescent; a line to Weston, branching from the Dundas St., at Keele St., and the Davenport Road line branching off from the Weston line easterly to Bathurst St. Owing to lack of patronage the Evelyn Crescent line was abandoned for some years, but traffic on it was resumed on the general revival of business. In 1899 an arrangement was made with the Toronto Ry., by which that company operated its lines to Keele St., the T. S. Ry. operating its lines in two sections, one along Dundas St. to Lambton, with the Evelyn Crescent branch, and the other along Keele St. to Weston, with the branch to Bathurst St.

In 1901, the company began to look forward to an extension of its lines, and secured authority to extend its Lambton Mills line to Hamilton, and in the following year was given a franchise through the township of Etobicoke, the extension to be completed in 1903. Nothing was done under this agreement. In 1904, the Legislature granted an extension of time for building the lines authorized in 1901, and authority to build the following additional lines: From Hamilton to Niagara Falls; a line from near Weston to Woodbridge; a line from near Lambton Mills to Brampton; and other branch lines in Niagara Peninsula. At the last session of the Legislature, an extension of time for one year was granted for the building of the lines, and power was given to build a line from Cooksville.

By the Act passed in 1904 the company was authorized to issue bonds to the amount of $30,000 a mile in respect of its lines built or to be built, and in 1909, a mortgage to the National Trust Co. covering an issue of bonds to that amount was confirmed. The mortgage provided that no portion of the bond issue beyond that for the existing mileage should be issued unless with the previous consent of two-thirds in value of shareholders present or represented at a general meeting called to authorize the issue of bonds.

Electric Ry., Finance, Meetings, Etc.

British Columbia Electric Ry.—Gross earnings for April, $368,233; working expenses, $243,097; net operating earnings, $125,136; renewal funds, $29,770; net earnings, $95,366; approximate income from investments, $20,000; net income, $115,360, against $247,307 gross earnings; $153.776 working expenses; $93,581 net operating earnings; $17,852 renewal funds; $75,679 net earnings; $16,500 approximate income from investments; $92,179 net income for Apr., 1910. Aggregate gross earnings for 10 months ended Apr. 30, $3,440,733; net income, $1,336,479, against $2,471,631 aggregate gross earnings and $1,047,717 net income for same period 1909-10.

Calgary Municipal St. Ry.—Total earnings for May, $28,731.85; expenses, including a contingent account amounting to 5% of gross earnings and $2,715.88 for interest and sinking fund, $17,720.81; surplus, $11,010.44.

Edmonton Radial Ry.—The report of the city auditor upon the operation of the street railway for the year 1910, forms a part of the report of the city commissioners for Edmonton, Alta., recently issued. The auditor sets out that the revenue account for the year shows a deficit of $29,269.74, which added to the deficit of 1909, makes a total deficit of $38,754.38. The liability for tickets sold and not collected, $4,219.62, has been charged against revenue account. The number, 108,412, of tickets outstanding, appears to be abnormally large, but no statistics are available for comparison in this matter, with cities of similar size elsewhere. The financial loss is accounted for by the lowness of the fares charged, the high cost of labor, and the haste with which the line was built, which rendered considerable reconstruction necessary on the tracks.

The amount raised on capital account during the year was $434,500, and after liquidating the balance of the capital expenditure for 1909, and deducting the cost of extensions during 1910, there is on hand $247,133.06 to meet future expenditures. The amount charged by the power house department for power for street railway purposes was $46,480.75.

The receipts for the year were $148,294.17.

Halifax Electric Tramway.—Receipts for May, $17,198.82, and for two weeks ended June 14, $12,631.23, against $15,- ...., and $12,417.59 for same periods 673.97 and $12,417.59 for same periods

London St. Ry.—A dividend of 3% for the half year was declared at the semi-annual meeting of directors, June 15.

Montreal St. Ry.—Passenger earnings for May, $419,459.55; miscellaneous earnings, $12,229.97; total earnings, $431,689.52; operating expenses, $216,730.32; net earnings, $214,959 20; city percentage on earnings, $38,776.01; interest on bonds and loans, $15,963 07; rent leased lines, $607.10; taxes, $5,000; total charges, $60,346.18; surplus, $154,613.02; expenses per cent. of earnings. 50.21, against $360,480.85 passenger earnings; $9,753.28 miscellaneous earnings; $370,234.13 total earnings; $199,616.79 operating expenses; $170,617.34 net earnings; $29,442.27 city percentage on earnings; $14,982.37 interest on bonds and loans; $552.90 rent leased lines; $4.000 taxes; $48,977.54 total charges; $121,639.80 surplus; 53.92 expenses per cent. of earnings for May, 1910. Aggregate total earnings for eight months ended May 31, $3,006,913.47; operating expenses, $1,787,921.86; net earnings, $1,218,991.61; total charges, $339,889.47; surplus, $879,102.14; expenses per cent. of earnings, 59.46, against $2,707,235.45 aggregate total earnings, $1,607,443.21 operating expenses; $1,099,792.24 net earnings; $306.147.51 total charges; $793,644.73 surplus; 59.38 expenses per cent. of earnings for same period 1909-10.

Ottawa Electric Ry.—We are advised that while there have been repeated rumors during the last few months of a merger of the O. E. Ry., the Ottawa Light, Heat and Power Co., and the Ottawa Car Co., nothing is likely to be done in the way of bringing it about in the immediate future.

Port Arthur and Fort William Electric Ry.—Net earnings for Apr., $4,675, against $2,851 for Apr., 1910. Gross earnings per car mile, 23.672c.; net earnings per car mile, 8.961c.

Toronto Ry.—Gross earnings for April, $364,458; working expenses, maintenance, etc., $188,341; net earnings, $176,117, against $328,785 gross earnings; $171,146 working expenses, maintenance, etc.; $157,639 net earnings for Apr., 1910. Aggregate gross earnings for four months ended Apr. 30, $1,432,422; net earnings, $671,138, against $1,303,050 aggregate gross earnings; $605,102 net earnings for same period, 1910.

A quarterly dividend of 1¾% has been declared.

Winnipeg Electric Ry.—Gross earnings for April, $308,113; working expenses, $148,096; net earnings, $160,017, against $238,054 gross earnings; $124,642 working expenses; $113,412 net earnings for Apr., 1910. Aggregate gross earnings for four months ended Apr. 30. $1.280,472; net earnings, $615,387, against $1,051,534 aggregate gross earnings, $509.159 net earnings for same period 1910.

Toronto P.A.Y.E. Car Requirements.

The following Act was passed at the Ontario Legislature's recent session:

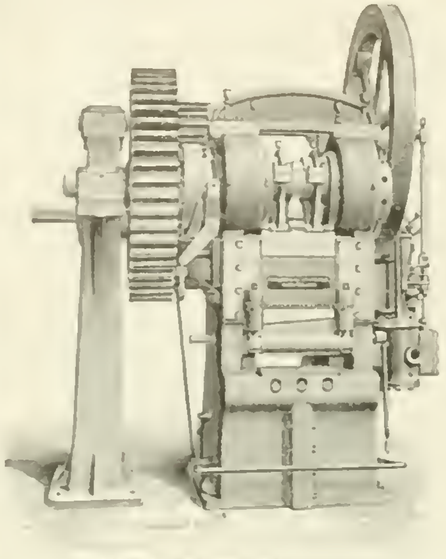
1. The Ontario Railway Act, 1906, is amended by adding the following as section 214a:

214a—(1) What is known as the "pay as you enter system" of collecting fares shall not be operated on any street railway car unless such car complies with the following requirements: (a) It must have a rear platform at least 72 ins. deep with a folding step not less than 54 ins. long. (b) The rear platform must be enclosed and properly heated, and provided with a door or doors having an aggregate width of at least 54 ins., so arranged as to permit of the entrance and exit of passengers at one and the same time. (c) If there is a partition between the rear platform and the body of the car such partition must have doors or openings so arranged as to permit of the entrance and exit of passengers at one and the same time. (d) The front platform must be enclosed and properly heated. It shall be provided with an exit door at least 30 ins. wide and a folding step of the same width. If there is a partition between this platform and the body of the car it must be provided with an exit door or opening not less than 30 ins. wide.

(2) This section shall only apply to cities having a population of 100,000 or over.

(3) Every company or person who violates the provisions of this section shall, on summary conviction therefor, incur a penalty of $100 per day for each car operated contrary to the provisions of this section.

(4) The provisions of the preceding sub-sections may from time to time be varied or extended by the Ontario Railway and Municipal Board on any application made to the board for such purpose.



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LET THE PUBLIC KNOW

By A. Dexter B. Van Zandt, Publicity Agent Detroit United Railway.

The following paper was read before the Canadian Street Railway Association at its meeting in Windsor, Ont., recently:—

Let the public know; tell them all about yourselves. It is a duty you owe, not only to the people, but to yourselves as well.

Of all the modern inventions of urban and suburban life developed within the past half century—inventions that are now classified as public utilities, whether in the form of transportation service, lighting service, heating service or the service of transmitting messages by wire—none has been so wonderful in its growth and ramifications as the public utility you here today represent, the electric street railway. Yet because of the misrepresentation of those with ulterior motives, supplemented by the non presentation by those who know, no other necessity of modern civic life has been subjected to such abuse as is heaped upon the calling to which you are devoting your lives.

The English speaking nations are broad, liberal minded peoples, by natural bent prone to have faith in their fellow beings, for only because of this faith in the honesty of purpose have we been able to become what we have, great nations in the uplifting of mankind. Some day there will be more of this faith in what you have done and are doing, and this confidence in your work, when it does come, will redound to your glory as well as to the peace and welfare of town and country.

Today you introduce to a municipality this wonderfully comfortable means of annihilating time and space, and you are hailed as a giver of new life. but a year from today and the same people will not be greatly adverse to placing you on the cross of carping criticism. Today you invest all the money at your command, adding to it all the credit you can obtain, in rails, cars and power, all the best products of the art, and then give a service far beyond the wildest dream of the most optimistic citizen, but a year from now your track, your cars, your power and your service are condemned as being antiquated. Your critic continues to live in his same house, use his same furniture, and eat from the same dishes, content in the belief that he is doing what is proper. He can readily see the financial folly of wiping out his investment, but he doesn't understand why you shouldn't scrap a five thousand dollar car.

Today your average citizen goes to his butcher and, asking the worth of meat, is told and believes; he goes to his tailor and, asking the worth of clothing, is told and believes; then your same citizen comes to you, and asking what it costs to make his street car ride possible is told, whereupon you are made chief in the Ananias club. This is the condition that confronts you. Why the condition exists is, perhaps, rather hard for you to understand, and I am not certain that any one fully knows why these views are as common as Canadian thistles on the farm or as dandelions on the city lawn.

As I read the history of urban and interurban railway development I take it that the prevailing opinion of the public had its origin in your own lack of comprehension of what you started out to do. In the beginning all you planned was the substitution of motors for horses. You would give, you believed, the same service—perhaps a little better service—at a less cost. Your original cars and their duplicates would do; to them you would fasten motors and string up some wires from which to secure the current of electricity and save the cost of feed and loss of dollars by sickness, old age, or death of animal power. Coupled with these was the certainty of somewhat shortening the running time, so you figured it out that you could perform the public service of transportation not only better but cheaper. You proceeded by contractural relations to perform this service at rates that have since proven to be far less than they should have been. Others, lured by the pot of gold at the end of the rainbow, and with less knowledge than you, entered the field with even rasher promises than you believed you could fulfill. You found that the mystifying motors required larger cars, and then the larger cars required larger motors, and these in turn required larger cars. With larger cars and more powerful motors came greater speed, and greater speed and heavier equipment required rails and road beds of costly design—a constant succession of using capital and still more capital, with the scrap heap growing apace long before even a fractional portion of the original investment had been returned into the treasury from which it came.

In the meantime, as new discoveries and inventions came with startling rapidity, and they are still coming, placing into the discard today what in themselves were discoveries of but yesterday, the people have been served lavishly. You have made it possible for them to live far from the smoke and noise of shop and factory; you have given them a means of transportation within the city, faster, more frequent and more certain than human mind ever thought possible. You have spread the cities out into the country, with its free air and blessed sunshine, and you have given the man of broad acres all the peculiar joys of city life added to the beneficence of wheat field and woodland. You have done all these things, but so intent have you been with your work that even though through bitter experiences you learned that deficits are not surpluses, and depreciations must sometime be met, you have not set about it to tell the user of your street car that every five cent piece he pays is far from being all profit. I mean you have not gone about it scientifically. Today your car shops are scientifically organized; you employ engineers to do your track building; you make use of chemists; operating departments are in the hands of men of wide knowledge of the public's needs and your ability to supply these needs; you are quick to locate defects in your internal organization, but you have not yet brought to an equally high standard a public information department.

Today several of the states and provinces have begun a scientific study of the art of transportation through trained men in the employ of the railway commissions. There is more deep investigation of the problem than ever before, and as the years go by the knowledge gained will seep through to the minds of the people, but this knowledge should not all be theoretical in nature; the difficulties besetting practical men must be made known in order that there be a clear comprehension. Each railway should do an active work in properly educating the public with which it is in immediate and constant touch.

I know of no public utility that receives so much attention today in that greatest of all public utilities, the press, as is given the utility you represent. Day after day and year after year the name of your railway appears in public print, often in words of truth, often with words of falsity.

Occasionally you are being given credit for doing something for the public good and more often you are being accused of crimes you never committed. If a nagged conductor and a crabbed passenger have a quarrel, headquarters are given the blame; if a transfer is wrongfully issued it is done on the advice of the president of the company after months of consultation with the directors, and should some one coming around the rear end of one car be run over by the car going in the opposite direction, it is, of course, all deliberately planned by the general manager. Your patron may over-sleep, and, perforce, have to snatch an unsatisfactory breakfast, but you must have the car ready for him when he reaches the corner. As a matter of fact, it is your fault the alarm clock doesn't pull him out of bed and dress him. Similarly you are to blame because you do not buy cars enough, and build tracks enough, and have an abundance of car crews on hand to take back the armies from the shop, the factory and the ball game within the space of five minutes or less. That the butcher and the grocer cannot assuage one's wants promptly is no excuse for you of public utility service—that phrase so beautifully mouthed by the man in office and the man who wants to be in office.

Why not intelligently try to direct the information that goes out broadcast among the people whom you transport? They are entitled to know what you are doing and why you are doing it. You should tell them that your prosperity means their good service, and their prosperity means still better service. Let them see that there is a proper, decent relationship between you, the common carrier, and they, the riders. Take them into your confidence, and in time they will learn that while personally you are a quiet, sedate Christion gentleman, you are not officially a cut-throat, porch-climber and leper. I, myself of newspaper training, have no hesitancy whatever in saying that you have neglected your department of publicity, that department which is the connecting link between the railway and the people who ride.

No matter what may be the motive of the man higher up in newspaper control, it should be remembered that the reader believes in what his paper tells him. His newspaper is the source of his information and his school of instruction. The very fact that a man reads a certain print is the best of evidence that he believes in it from first column to last, including, sometimes, the advertisements. Your average citizen believes his newspaper is published primarily to furnish him with local and world information, and so he necessarily believes he is being honestly dealt with, but of the real purposes of the man higher up he has never had occasion to ponder.

Make the giving of news a definite department of organization, with the same attention to it as to other departments. Let the public know what you have done and what you are doing. Let the public know of your new appointments and of your accidents. Let the public know of your schedule changes, of where you add to the service, and where you take off, and why. Municipal corporations, through their clerks and departments, let the public know what is going on, because the public is interested. You should do no less. Don't be afraid of printer's ink. Let the public know

* * *

The action brought by W. Kerley against the London and Lake Erie Ry. and Transportation Co. to recover penalties under the Lord's Day Act, for the operation of cars on Sundays, came before Chancellor Boyd at St. Thomas, Ont., June 20. The company is operat-law. The Grand Valley Ry., which also that it is independent of the provincial law. The Grand Valley Rd., which also operates under a Dominion charter, is running cars between Brantford and Galt on Sundays.

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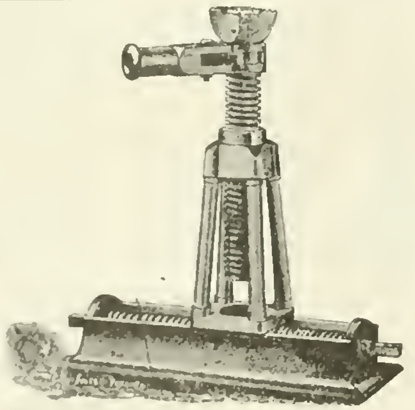

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AND ITS LESSON

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THE LESSON

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Projects, Construction, Betterments, Etc.

Brandon, Man.—A bylaw authorizing the construction of an electric railway in the city was passed by the ratepayers June 16. It provides for the building by the city council of about eight miles of line.

Negotiations are in progress with a syndicate represented by J. D. McGregor for the operation of the line. If these negotiations are completed the syndicate will assume the cost of the work done by the city, and complete the construction. The first lines to be built will lead to the Experimental Farm and the suburban park. (June, pg. 555.)

Brantford.—The Ontario Legislature has authorized the city council to pass bylaws for building and operating a street railway from the corner of Brant Ave. and Church St. to a point opposite the waterworks plant, and to raise $12,000 by debentures for such purpose. The council is also authorized to lease the line to any company.

British Columbia Electric Ry.—The freight yard which the company proposes to lay out at New Westminster will have a capacity of about 300 cars and will contain over two miles of track, with room for extension. It lies between the Eburne line and the proposed cut-off from McNeiley St. to Twelfth St.

General Manager Sperling informed the New Westminster City Council June 5, that plans had been approved for an extension to Millside, and for a new line in the city.

The Board of Railway Commissioners having authorized the opening for traffic of the Vancouver, Fraser Valley and Southern Ry. from Park Drive, Vancouver, to New Westminster, 10 miles. It was opened for traffic June 12.

Proposals are being discussed prior to submission to the company for a line from Vancouver to the Delta district; from Vancouver to Ladner, 14 miles, and for a further extension of the Lulu Island line. (June, pg. 555.)

Calgary Municipal St. Ry.—The special track work at the intersections is being put in, but it is slower work than was anticipated, and it is doubtful whether the extensions will all be completed by the date for opening the exhibition. The construction of the Hillcrest loop line this year is under consideration, and it is expected the work will be put in hand at once. (June, pg. 555.)

East Calgary Corporation Co.—Press reports state that application is being made for incorporation with this title for the purpose of building an electric railway for eight miles southeasterly from the present easterly terminus of the Calgary Municipal Street Ry. Colonel Walker and P. Burns are interested in the proposal.

Grand Valley Ry.—The plant for the power house at Galt, Ont., is being installed. This power house will receive the current from the Hydro-Electric line. (Feb., pg. 167.)

Guelph Radial Ry.—The contract for the construction of the extension of the line in St Patrick's Ward, Guelph, Ont., has been let to P. H. Secord and Sons, Brantford, Ont. The overhead work will be put up by the company. (May, pg. 453.)

Halifax Electric Tramway Co.—A press report states that the directors passed a resolution June 15 consenting to the extension of the line from Green Bank to Point Pleasant Park, Halifax, N.S., asked for by the city authorities. The work will be proceeded with as soon as the city engineer gives the necessary authority, and it is expected to have it completed by Aug. (May, pg. 453.)

Hamilton, Waterloo and Guelph Ry.—A representative of a London, Eng., financial house is expected in Hamilton, Ont., to look into the proposal for the building of this railway, according to a statement made by J. Patterson on his return from England, May 26. (April, pg. 365.)

Hamilton St. Ry.—The company has notified the Hamilton, Ont., city council that it will be unable to make any more extensions this year, but it has consented to shift its tracks on Barton St., east of Sherman St., from the side to the middle of the road. (May, pg. 453.)

Hamilton to Galt, Ont.—The General Manager of the Dominion Power and Transmission Co. is reported as stating, June 16, that the company intended to build a line from Hamilton to Galt, Ont., as soon as possible, but that its action will depend largely upon the action of the electors on the Hydro-Electric power bylaw, which is to be voted on in Hamilton at an early date. (June, pg. 555.)

Hull Electric Co.—Plans showing the car barns, repair shops and offices which it is proposed to build near Hull Jct., on the Little Farm, were filed at the city hall, Hull, Que., June 1. The estimated cost of the buildings is $25,000. The present shops are at Deschenes, and these will be turned into car barns when the new buildings are completed. (Sept., 1910, pg. 781.)

Lake Erie and Northern Ry.—W. P. Kellett and others interested in this projected electric railway from Port Dover to Brantford, Ont., went over the route, June 6. A bylaw was passed by the Brantford City Council, June 12, granting the company permission to build its line along Newport St. and across certain streets in the city. The municipalities through which the line will pass are being asked to guarantee the company's bonds, Brantford being asked to become responsible for $300,000, and the town of Simcoe and the village of Port Dover for $50,000 each. (June, pg. 555.)

Medicine Hat, Alta.—The city council instructed its finance committee, June 9, to apply next session of the provincial Legislature, for a charter for an electric railway.

Montreal Street Ry.—The question of a new franchise for the M.S.R. and its allied companies is still under consideration. The President informed the Board of Control, June 15, that it would be early in July before the company would be in a position to discuss the matter. (June, pg. 557.)

Mount McKay and Kakabeka Falls Ry.—Bylaws affecting this railway as constructed in Paipoonge tp., were confirmed last session of the Ontario Legislature as follows:—exemption from taxation for 21 years from 1911; grant of $4,000 in aid of the construction of a bridge over the Kaministikwia River at the boundary of lots 8 and 9; and a franchise for lines on any highway in the township. (Mar., pg. 259.)

Nanaimo, B.C.—A bylaw granting a franchise for the construction and operation of an electric railway in the city has been given a second reading by the council, and referred to the solicitor. Stewart and Rogers, Victoria, are solicitors for the syndicate with which the preliminary arrangement has been made. A local syndicate has submitted an offer to build a line, if the first named proposition is not carried through. (Feb., pg. 169.)

Niagara Frontier Ry.—A bylaw granting the company a 25 year franchise for an electric railway in Niagara-on-the-Lake, Ont., was passed by the taxpayers, June 6. (June, pg. 557.)

Oshawa Ry.—The Ontario Legislature has authorized the Oshawa town council to enter into an agreement with the Oshawa Ry. for the paving of the track allowance, and for the spreading of the cost over a period. (Mar., pg. 259.)

Ottawa Electric Ry.—The Ottawa City Council was authorized last session of the Ontario Legislature to borrow $14,500 for the purpose of providing for the cost of a roadway to enable the O.E.R. to extend its line to Beechwood and Notre Dame cemeteries in Gloucester tp. Negotiations are in progress with certain property owners at the corner of Carling Ave., in order to extend the Preston St. line and form a new loop line. (June, pg. 557.)

People's Ry.—A special meeting of shareholders was held at Berlin, Ont., June 26, to create 6% preference stock of an amount not exceeding 25% of the capital from time to time authorized; to confirm a bylaw passed by the directors as to the terms of the preference stock; to authorize the issue of bonds, debentures or other securities, and to create mortgages to secure the same; to confirm and ratify contracts for the building of the railway, and to ratify the acts of the directors up to the holding of the meeting. G. A. Wanless is Secretary and the company's offices are at Berlin, Ont. (June, pg. 557.)

Port Arthur and Fort William Electric Ry.—The Ontario Legislature has confirmed bylaws authorizing the raising of $90,000 for paying the street railway proportion of certain streets, and for the laying of 80 lb. steel rails on Cumberland St.

The taxpayers of Port Arthur will vote, July 6, on a bylaw authorizing the city council to raise $17,250 by debentures for extending the line from the present terminus at Current River Park for 1,800 ft. along Cumberland Ave.

In the act respecting Fort William, passed last session of the Ontario Legislature, it is set out that the amount of the debenture debt for street railway purposes is $372,500, in respect of which a sinking fund is being provided. The council is authorized to borrow money for the street railway's part of the cost of paving and macadamizing certain streets without obtaining the assent of the electors. The act also confirms a bylaw for borrowing $20,000 for street paving on Victoria Ave. and Simpson St., on which the street railway is double tracked (June, pg. 557.)

The Prince Rupert Hydro-Electric Co. has been incorporated under the Dominion Companies Act, with a capital of $5,000,000, and offices in Montreal, for electrical development purposes at Prince Rupert, B.C. The powers given to the company are general, and include the construction and operation of electric railways. The provisional directors are: O. B. MacCallum, G. V. Cousins, P. F. Brown, W. R. Ford, S. T. Mains, Montreal. This is the company which has taken over the charter of the Tsimpsian Light and Power Co., as well as other companies interested in electrical development in the Prince Rupert district. (See Tsimpsian Light and Power Co., June, pg. 559.)

Quebec Ry., Light and Power Co.—We are advised that it is the company's intention to electrify the Montmorency Division, between Quebec and Ste. Anne de Beaupre, but that it has not yet been decided when the work will be done. It is intended to establish a divisional point at Ste. Anne de Beaupre, and to operate the line from that point through to Murray Bay, on the Quebec and Saguenay Ry., by steam. The ownership of the Q. and S. Ry. is vested in the Quebec Ry., Light, Heat and Power Co., which owns the Q. Ry., L. and P. Co., but it will be operated as the Q. and S. Ry.

The extension to the Kent House was so far completed that a steam locomotive was run in on the new rails to the hotel grounds June 9.

Replying to a communication from the locality, R. Forget, President, has

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Department of Railways and Canals, Canada
HUDSON BAY RAILWAY.
NOTICE TO CONTRACTORS.

SEALED TENDERS addressed to the undersigned and endorsed "Tender for construction of Hudson Bay Railway," will be received at this office, until 16 o'clock on Tuesday, the 1st of August, for a section of about 185 miles from Pas Mission to Thicket Portage.

Plans, specifications and form of contract to be entered into can be seen on and after Wednesday, May 31, at the office of the Chief Engineer of the Department of Railways and Canals, Ottawa, and at the office of the Chief Engineer of the Hudson Bay Railway, Winnipeg, at which places forms of tender may be obtained.

Parties tendering will be required to accept the fair wage schedule prepared or to be prepared by the Department of Labour, which schedule will form part of the contract.

Contractors are requested to bear in mind, that tenders will not be considered, unless made strictly in accordance with the printed forms, and in the case of firms, unless there are attached the actual signature, the nature of the occupation, and place of residence of each member of the firm.

An accepted bank cheque for the sum of [illegible]00 000.00 made payable to the order of the Minister of Railways and Canal must accompany each tend[illegible] will be forfeited if the party tendering declines entering into contract for the work, at the rates stated in the offer submitted.

The cheques thus sent in will be returned to the respective contractors whose tenders are not accepted.

The cheque of the successful tenderer will be held as security, or part security, for the due fulfilment of the contract to be entered into.

The lowest or any tender not necessarily accepted.

By order,
L. K. JONES,
Secretary.

Department of Railways and Canals, Ottawa, May 26, 1911.

Newspapers inserting this advertisment without authority from the Department will not be paid for it.

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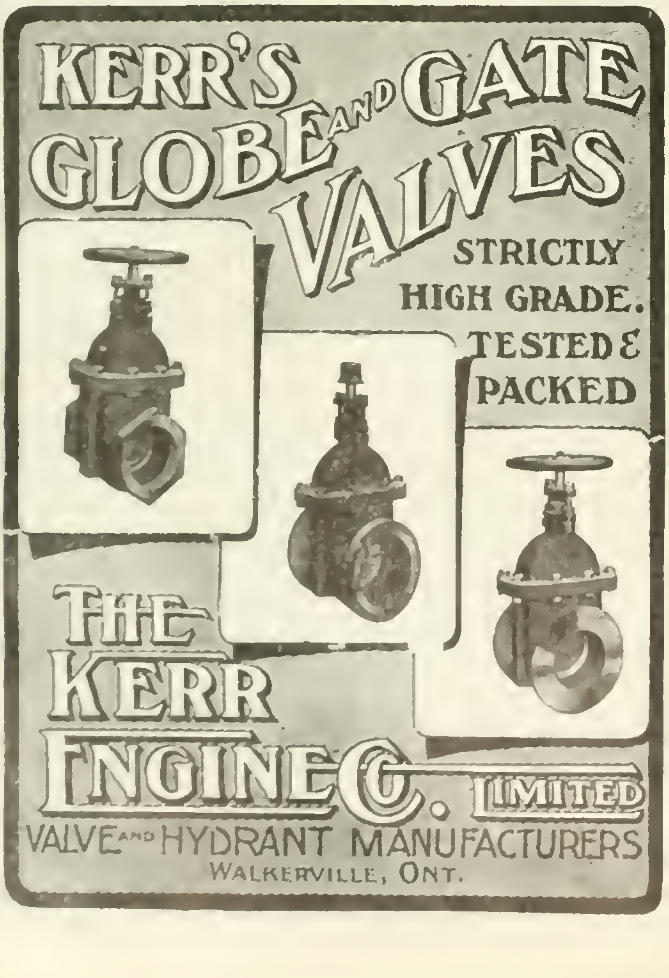
Gen Man. Western Canada, Toronto.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During April, seven employes were killed and one injured in the course of their work in connection with the navigation of Canadian waters. Of the fatalities, all of which were due to drowning, six were caused by a wreck off the B.C. coast, the non-fatal accident being caused by falling machinery.

written stating that the company will undertake the construction of a line from Charlesbourg to Lorette, as an extension of its lines, if the municipalities interested will secure the necessary right of way. (June, pg. 557.)

Regina Electric Ry.—H. Doughty, who is in charge of the building of the electric railway in Regina, Sask., under L. A. Thornton, City Engineer, stated recently that the line would be completed to the exhibition ground by July 1, and would be in operation for the fourth. No definite arrangements, we are advised, have been made for the operation of the lines, but in any case the City Commissioner will have the direction of the work. (June, pg. 557.)

St. John Ry.—An extension of the line as far as Kane's Corner is under construction, and if the arrangements are completed with the municipality, the extension will be carried as far as Fernhill cemetery. An addition to the power house is to be built immediately. It will have a frontage of 30 ft. on Nelson St., St. John, N.B., and will connect at the rear with the company's offices. (May, pg. 455.)

Sandwich, Windsor and Amherstburg Ry.—The Ontario Legislature has declared that sec. 11 of chap. 97, Vict. 56, "shall not prejudice or affect the rights, powers and privileges of the said town of Sandwich existing or enjoyed by the said town of Sandwich prior to the passing of the said act." The second section limits the company's franchise to a period of two years from the present year. (Mar., pg. 261.)

Saskatoon, Sask.—The taxpayers will vote, July 6, on a bylaw to authorize the city council to grant a franchise for an electric railway. The agreement which it is proposed to ratify is made with H. M. E. Evans, Edmonton, Alta., who has acquired the property, rights and franchises of the Saskatoon Power Co., and provides, so far as the street railway is concerned, that construction is to be started within three months after the agreement is made and completed within 15 months, subject to incorporation at the next session of the Saskatchewan Legislature. Special conditions are provided to come into operation if the special act be not obtained, or if the street railway be completed before the hydro-electric plant is ready. The franchise is for 20 years, and is exclusive, covering also any areas that may be added to the city in the future. The corporation may call upon the company to build extensions at any time under certain conditions; radial lines outside the city limits may also be built. The company will pay to the city, after the line has been in operation three years, 3% of the gross earnings every year for seven years, 4% a year for the next ten years, and 5% a year thereafter until the city exercises the right of purchase under sec. 27 of the agreement. (May, pg. 455.)

Sherbrooke St. Ry.—The Board of Railway Commissioners has authorized the company to change the location of its crossing of the C.P.R. at the corner of King and Belvidere Sts., Sherbrooke, Que.

It is expected that the reconstruction of the old company's lines in the city will be completed by July 31. (May, pg. 455.)

Toronto and York Radial Ry.—The additional lines which the company is authorized to build under the Act passed last session of the Ontario Legislature include extensions and branches of the different railways forming the T. and Y. R. R. upon highways, with the consent of the municipal authorities, or upon private rights of way; a line from the Toronto and Scarboro division to Markham; and a line from the Metropolitan Division at Sutton to Pefferlaw. The present Act does not extend the rights of the company under any existing agreement with any municipality so as to empower the company to lay double tracks upon any highway where such right does not expressly exist under such agreement.

Application is being made for the construction of additional switches on the Metropolitan division in North Toronto. The present switches are only short passing places, about 400 or 500 ft. long, and the proposed new ones extend from 1,050 to 1,650 ft. in length. The municipal authorities are opposing the plans before the Ontario Railway and Municipal Board. (June, pg. 559.)

Toronto Civic Street Railway Proposals.—The Act respecting the city of Toronto passed last session of the Ontario Legislature declared that the power to acquire the part of the Toronto and York Radial Ry. in the city, as set out in schedule B., was legal, and granted power to acquire it under the terms of the agreement of Dec. 23, 1890. The piece of line mentioned is the section of the Toronto and Mimico Electric Ry. from Sunnyside to the city boundary. The council may take possession of the line, Dec 23, of the current year, and may issue debentures to pay for the cost, subject to the passage of a bylaw. The city is also given power to extend the line easterly along the Lake Shore Road so as to connect with the Toronto Ry., and may make agreements with that railway for the interchange of traffic, or for running rights over the T. Ry. as far as the St. Lawrence Market, or to other points, subject to the approval of the Ontario Railway and Municipal Board. The city's application for rights in connection with the T. Ry. is under consideration by the Ontario Railway and Muncipal Board. (June, pg. 559.)

Toronto Eastern Ry.—The Board of Railway Commissioners will be asked, July 5, to recommend the Governor-in-Council to sanction an agreement made with the Canadian Northern Ontario Ry. for the running of the company's trains over C.N.O.R. tracks. A number of orders have been made by the Board of Railway Commissioners for the crossing of public highways in the townships of Darlington and Whitby East, Ont. (Apr., pg. 365.)

Toronto Ry.—Work on the new lines and new turnouts, etc., is being pushed forward, both by the company and the city, and it is expected that some of the new routes will be put in operation by the end of July. The Ontario Railway and Municipal Board has granted the company permission to lay a line on the Spadina Ave. line south to Front St., and to put in an intersection there. (June, pg. 559.)

Western Central Ry.—A special meeting of shareholders was held in Toronto, June 19, to authorize the directors to issue first mortgage bonds to the amount of $35,000 a mile of single track, and $55,000 a mile of double track line. J. L. McDiarmid is interim Secretary.

A. T. Drummond, who represents the company, stated June 11, that the company would agree to give over its passenger business destined to city points to the civic railway, if permitted to stop at certain points and allowed the use of certain streets to reach the civic lines. It is understood that a proposal will be submitted to the city at an early date. (June, pg. 559.)

Winnipeg Electric Ry.—The City Engineer was instructed, June 9, to get into communication with the railway officials with a view of deciding on the extensions to be built. It was announced, June 14, that the company was sending a representative to discuss extensions with the city of St. Boniface. (June, pg. 559.)

Electric Railway Notes.

The Pay-as-you-Enter Car Corporation has taken out patents in China.

Mrs. Butler, who died in Montreal, May 28, was wife of J. W. Butler, Supervisor of the Montreal Street Ry.

The Port Arthur and Fort William Electric Ry. has added to its rolling stock a baggage car, built at its own barns.

The Moose Jaw Electric Ry. has received two 21 ft. cars, 31½ ft. long over all, mounted on 21-E trucks, from the Ottawa Car Co., Ottawa.

N. C. Pilcher, General Manager, Sherbrooke Ry. and Power Co., has been gazetted provisional lieutenant in the Sherbrooke Regiment.

The Winnipeg Electric Ry. has completed two large open type cars, and has nearly completed a number of closed type cars at its shops.

The Toronto Ry. employes, at a meeting, June 10, instructed a committee to wait on the management and present a list of grievances, with a request for redress.

The Edmonton Radial Ry. has received two 28 ft. pay-as-you-enter cars, 44½ ft. long over all, mounted on 27-G-1 trucks, from the Ottawa Car Co., Ottawa, Ont.

The Montreal and Southern Counties Ry. is being asked to deliver 800 shares of stock to the Bank of Quebec. Argument was heard June 19, and judgment reserved.

The Montreal Street Railway on July 1 made a voluntary increase of wages of motormen and conductors of 1c. per hour, making the wages 20, 21 and 22c., according to length of service.

W. Meredith, Consulting Engineer, British Columbia Electric Ry., Vancouver, has been chosen by the Victoria city council as engineer to supervise the construction of the Sooke Lake power plant.

The British Columbia Electric Ry. has organized a publicity department. This has been deemed necessary on account of the expansion of the railway in the past year, and in view of prospective development.

G. H. Millar has been appointed Master Mechanic in charge of shops and sub stations, London and Lake Erie Ry. and Transportation Co., London, Ont., vice C. Johns, who resigned on his appointment as Superintendent in charge of hydro-electric power plant at St. Thomas, Ont.

Joseph D. Evans has been appointed Superintendent of Construction and Supervising Engineer, Montreal Street Railway. He was for a number of years in the J. G. White Company's service, and recently was in charge of the Canadian Power Company's construction at St. Timothee, Que.

The British Columbia Electric Ry. has ordered two 45 ton 0-4-0 locomotives, with quadruple equipment, 301D interpole railway motors, arranged for forced ventilation, from the Westinghouse Co. Following are chief details: cab arranged for double end operation; adhesive weight 90,000 lbs. on driving wheels; diameter of driving wheels, 36 ins.; arched wheel base, 6 ft. 8 ins.; length between coupler knuckles, 31 ft. 1 in.; nominal ratings, each motor 150 h.p. on 500 volts; unit switch, electro-pneumatic, hand accelerating control; brake equipment, Westinghouse type E.L.; continuous tractive effort with blower, 6,800 lbs.; tractive effort at 17½ miles an hour, for one hour, 12,800 lbs.; maximum tractive effort up to 15 miles an hour, 20,000 lbs., with 500 volts at the motors; momentary tractive effort with sand, 26,000 lbs.; motors arranged for working voltage of 600; car ratio, 17:60.

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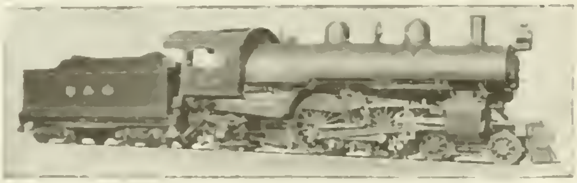

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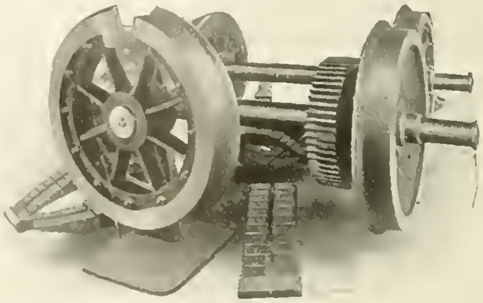

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Niagara St. Catharines and Toronto Railway Shop Devices.

The accompanying illustrations show four different labor and cost-saving methods devised by W. H. Horton, electrical engineer N., St. C. & T. Ry., St. Catharines, Ont., and used in the shops of that company. Fig. 1 is a commutator slotter made on the principle of a common slide rest. It carries a cutter made of an old file which is operated by a hand lever and link, as shown. With this slotter 99-bar commutators can easily be undercut in 15 minutes. Fig. 2 shows this device installed on the slide rest of a lathe.

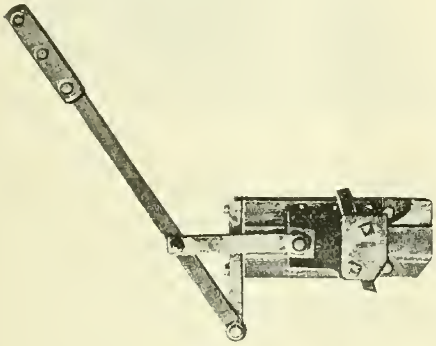

Fig. 1.—Commutator Slotter.

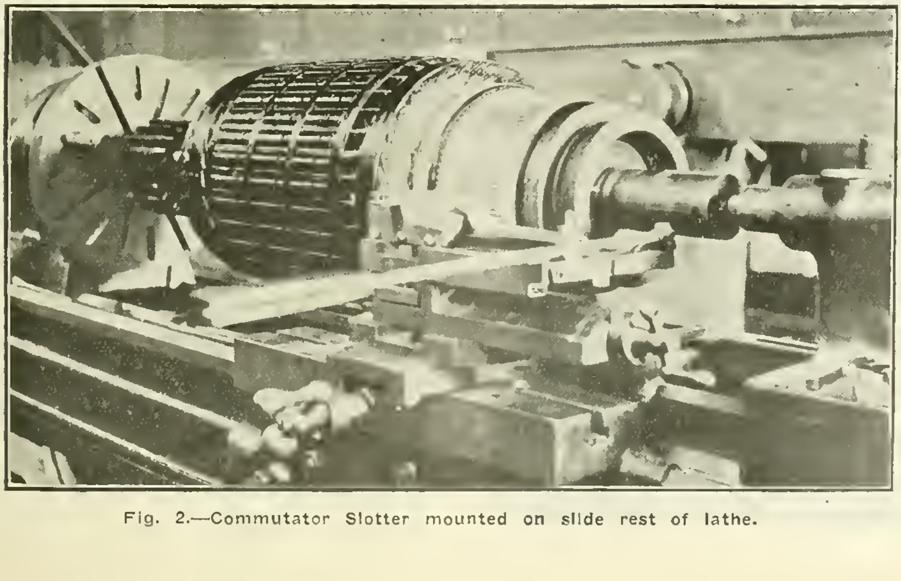

Fig. 2.—Commutator Slotter mounted on slide rest of lathe.

For boring armature and axle bearings the company uses a simple cylindrical chuck which is screwed on to the lathe spindle, as illustrated in fig. 3. This has proved a very satisfactory device since the bearing requires no centreing; all that is necessary is to push the bearing into the chuck and clamp it with the set screw. Bushings are used for odd-sized bearings, the single set screw passing through a clear hole in the bushing to clamp both the bushing and the bearing. No armature binding has been experienced with bearings bored in this chuck because the inner side, when bored, must be parallel with the outer side of the shell. One man can bore many bearings in a day with this chuck, as no time is lost in centreing. A large number of bearings can be bored, say 1-32 in. small, for stock, and when armatures require bearings the latter can be fitted with this chuck without disturbing the original alignment.

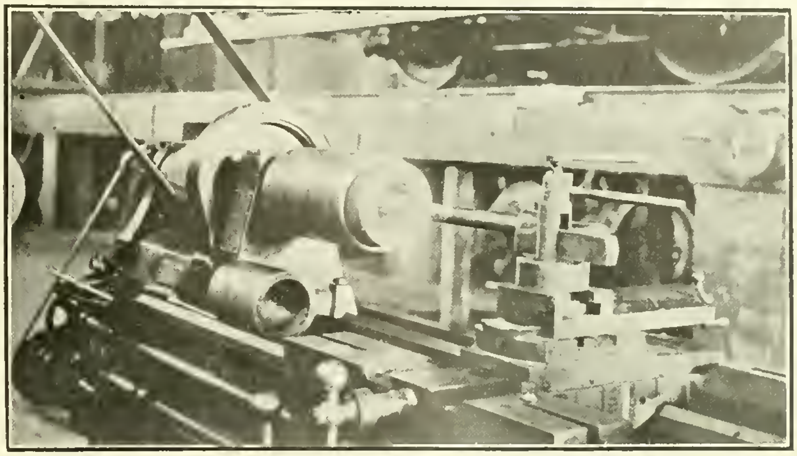

Fig. 3.—Armature Bearing Chuck.

Fig. 4 shows an armature bander which was made of a 15-in. diameter double-flange, cast-iron pulley, 1½ in. wide between the flanges. The banding wire is led from the spool seven or eight turns around the pulley, after which the wire is led in the right direction by the lower right-hand trolley wheel which serves for the sheave. A piece of trolley rope over the pulley is used for a brake. This rope is fastened to a bracket at one end and is kept taut by cast-iron weights at its free end. The tension of the wire is increased simply by adding more weight on the end of this rope. This banding outfit has been found efficient and simple and does as good work as more costly devices used for the same purpose.

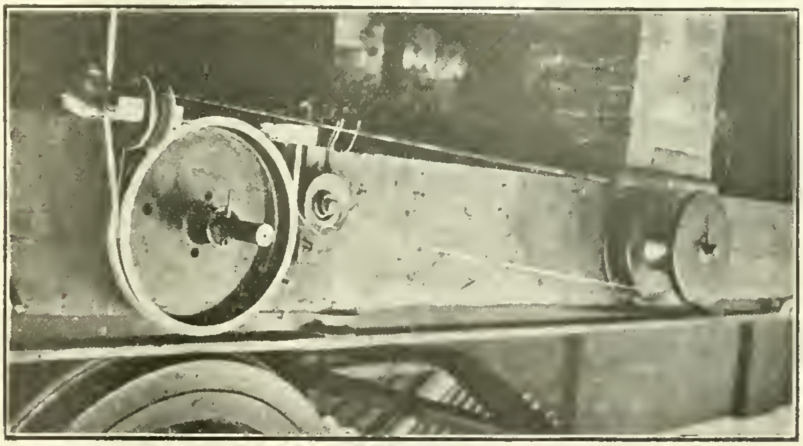

Fig. 4.—Armature Bander Wire Tighteners.

Fig. 5 shows a car wheel tire-heater consisting of a piece of 1½ in. pipe bent into a circle with ⅛-in. holes 1 in. apart drilled all around on the inside. Natural gas for heating is supplied through the valve on the left and air is furnished through the valve on the right from a forge blower driven by a 1 h.p. motor. The pipe circle rests on a 3-in. thick cast-iron ring which is surfaced on the upper side and ribbed on the lower side. The brick foundation has a large centre hole through which the water used for cooling the tire is drained away. A 2-ton chain hoist suspended from a trolley running on I-beams is used to lift the wheels and axles in position over the tire. When the tire is heated sufficiently the wheel is lowered into it and the tire cooled off. This apparatus has been found to be very satisfactory. For instance, four old tires have been taken off and four new tires put on for a total gas consumption of 830 cu. ft., the natural gas costing 30 cents per 1,000 cu. ft. The time taken to remove an old tire varied from 6 minutes 25 seconds to 10 minutes. The time taken to apply a new tire varied from 21 minutes 30 seconds to 25 minutes.

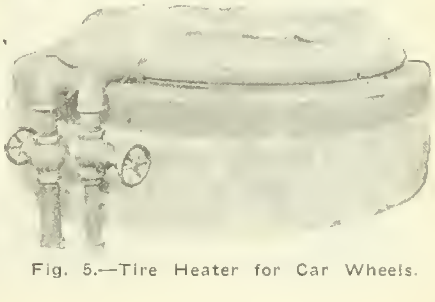

Fig. 5.—Tire Heater for Car Wheels.

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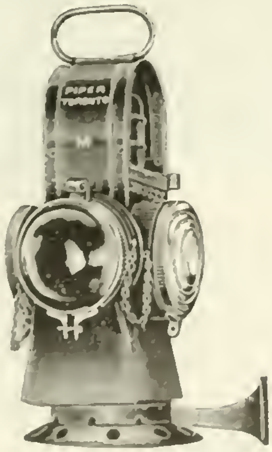

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Statistics of Canadian Shipping.

The total number of vessels of all kinds on the Canadian register at Dec. 31, 1910, was 7,904, representing 750,929 tons, an increase of 136 vessels and 32,376 tons over the previous year. Of this number, 3,332 are steamers with a gross tonnage of 554,974. With an assumed average value of $30 a ton, the net registered tonnage of shipping on the register is valued at $22,527,870. The number of new vessels built and registered during 1910 was 294, measuring 22,233 ton net register, which at an estimated value of $45 a ton amount to $1,002,735. During the year 247 vessels were removed from the register for a variety of causes, details of which, with the vessels registered, we have published each month. The number of vessels and their tonnage, according to provinces, is as follows:—

	Sailing ships and steamers.	Steamers.	Gross tonnage of steamers.	Net tonnage of sailing ships and steamers.
Ontario	2,027	1,485	240,658	227,457
Quebec	1,499	479	124,573	189,945
Nova Scotia	2,054	267	34,217	149,737
Brit. Columbia	1,109	781	93,693	105,414
New Brunswick	951	198	46,201	59,637
P. E. Island	150	20	4,465	10,100
Manitoba	94	85	7,673	5,565
Yukon District	16	14	3,213	2,784
Saskatchewan	4	3	281	290
Totals	7,904	3,332	554,974	750,929
Totals, 1909	7,768	3,229	513,962	718,553

Ports of registry are distributed as follows: Ontario 18, Nova Scotia 21, New Brunswick 7, Quebec 6, British Columbia 4, Prince Edward Island, Manitoba, Saskatchewan and Yukon District one each. No provision has been made for the registry of vessels in Alberta, though several vessels have been built, and are operating on the provincial waters. The chief vessels thus operating are registered at Kenora, Ont. The ports having a net tonnage of 10,000 and over are as follows:—

	Vessels.		Net
	Sailing.	Steam.	tonnage.
Montreal	789	288	136,407
Victoria, B.C.	307	191	60,089
Toronto	344	277	52,324
Quebec	625	162	46,271
St. John, N.B.	332	105	43,933
Vancouver, B.C.	607	469	35,175
Ottawa	394	294	31,297
Windsor, N.S.	78	16	26,222
Lunenburg, N.S.	279	13	22,751
Halifax, N.S.	424	93	21,375
Kingston, Ont.	204	138	21,339
Parrsboro, N.S.	95	7	17,726
Yarmouth, N.S.	311	34	15,906
Collingwood, Ont.	81	76	15,770
Hamilton, Ont.	41	33	14,936
Midland, Ont.	30	25	11,879
S. S. Marie, Ont.	68	58	11,298
Charlottetown, P.E.I.	150	20	10,100

Of the 247 vessels which were removed from the register, during the year, 13 were sold to foreigners; 26 wrecked; 8 stranded; 10 lost; 85 broken up; 6 abandoned at sea; 1 lost in collision; 7 foundered; 17 burnt; 3 condemned; 11 transferred to Newfoundland; 7 transferred to Barbadoes; 46 reported out of existence; 1 sank, and 6 were dismantled. During the same period, the names of 34 vessels were changed by orders in council.

The new vessels built and added to the register during the year, according to provinces, are as follows:—

	Vessels.	Tonnage.
Quebec	58	7,012
Nova Scotia	82	5,572
British Columbia	84	5,177
Ontario	46	3,612
Manitoba	5	490
New Brunswick	17	397
Prince Edward Island	2	23
Totals	294	22,283
Totals, 1909	327	25,306

C.P.R. Steamship Princess Alice.

The s.s. Princess Alice, which is being built for the C.P.R. service between Vancouver and Victoria, B.C., and Seattle, Wash., was launched at Wallsend-on-Tyne, Eng., May 29, being christened by Mrs. Arthur Piers, wife of the Manager C.P.R. Steamships.

The Princess Alice is about 300 ft. long and 46 ft. broad. She is built to the highest class of Lloyds and in accordance with the Dominion Government's requirements for passengers in channel or Pacific Coast service. In many respects she is similar to several vessels previously built for the same and other owners for service on the Pacific Coast.

The main engines will be triple expansion, with four cranks balanced to eliminate vibration. The vessel is designed for a speed of close on 18 knots an hour. In addition to the ordinary coal bunkers, she will carry fuel oil and the boilers will be fitted with a complete installation of oil-burning apparatus.

The arrangements for the accommodation and comfort of the passengers have been planned so as to be second to none in a vessel of this class. Both the ventilation and lighting of saloons, corridors, staterooms, kitchens, and so forth have been carefully studied and lavishly executed. The various public rooms and also the staterooms will be handsomely furnished, particular care being taken that the upholstery and all fittings are of the finest quality. In addition to the commodious cabins extending the whole length of both the upper and promenade decks, there will be several suites of bridal chambers. On the main deck aft will be the dining room, panelled in beautiful Italian walnut and finished with decorations in white enamel and gold. Below the dining room will be a restaurant with seating accommodation for about a hundred persons at small tables. On the promenade deck forward will be the observation room with large plate glass windows on three sides. This will be a particularly comfortable apartment provided with couches and easy chairs, from which may be had an interrupted view of the magnificent scenery through which the vessel will pass. At the after end of the same deck will be the first class smokeroom furnished in fumed oak. This will be another handsome and comfortable room, with wide and lofty windows and surmounted by a stained glass dome. The oak walls are to be relieved with hammered copper panels beautifully designed and representing scenes of North American Indian life and various Canadian subjects. On the upper deck, both forward and aft of the engine and funnel casing, will be large social halls or musicrooms. The corridors of the promenade deck will be specially lofty and well lighted by having a coach roof extending over their full length. This will be designed with a celerstory, which will be finished with panels of stained glass.

Grounding of the s.s. General Wolfe.

Following is the judgment delivered by Capt. L. A. Demers, F.R.A.S., Wreck Commissioner, June 2, concurred in by J. Bartlett and Capt. T. McGough, assessors, relating to the grounding of the s.s. General Wolfe in Harrington Harbor, Saguenay, Que., Nov. 6, 1910:

The court finds the testimony given by the captain and A. Gagne, second mate, somewhat contradictory, and holds that Capt. Young in transmitting his orders to the mate and second mate failed to make them sufficiently explicit and his conduct is therefore deserving of criticism, all the more so in view of the admitted deficiency of the second mate, who was given charge of the deck, and the court further holds that he was somewhat lax when in finding fault with the mode of keeping the log book; he failed to insist upon what he considered a desirable change being made. On the other hand the court is of opinion that the captain acted in a commendable manner subsequent to the stranding and by his judicious actions saved the ship from incurring more serious injury than she sustained.

As regards A. Gagne the court holds that he failed to carry out explicitly the orders he received, but in view of the fact that these orders thesmelves were somewhat inexplicit it will confine itself to severely reprimanding him for his lack of duty and informing him that should he again appear before this court, his certificate will be dealt with. He is furthermore instructed, in view of the reports made regarding his defective eyesight, that he be subjected by Dr. Page to the three sight tests, the retention of his certificate depending upon his successfully passing these tests. Capt. Young is warned to exercise more discretion in future and to insist upon what he considers a needed reform on his ship being acted upon by his officers and actually put into effect, or as master of a ship he must recognize that he is responsible for the doings on board and the line of conduct of the men under his command.

The Vessel Toiler's Oil Engines.

A great deal has been written of late about vessels, both large and small, driven by oil engines. As a matter of fact, the number of oil engine propelled seagoing vessels probably does not as yet number more than two or three, and by far the largest of these is the Toiler, built in England for the Canadian lake trade, which has already been described in these columns, and which has recently completed a voyage from the Tyne to Calais, France, and back. She is fitted with two sets of oil engines, as the speed on the canals, being limited, engines of

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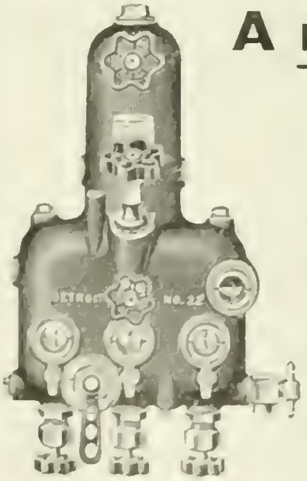

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relatively small power are sufficient to meet the requirements.

The Toiler is a twin screw vessel, 248 ft. p.p. by 42½ ft. beam by 19 ft. depth moulded, propelled by two sets of two-cycle reversible Diesel engines of a combined b.h.p. of 360, equal to about 400 i.h.p., working at about 250 revs.

On her voyage to Calais the Toiler was loaded with 2,650 tons deadweight of coal cargo, besides about 40 tons of oil fuel, fresh water and stores, a total deadweight of nearly 2,700 tons on a mean draft of 14 ft. She left the Tyne in very rough weather, notwithstanding which the engines are reported to have worked perfectly satisfactorily, and she completed her voyage to Calais at an average speed of 5.9 knots (or 6¾ miles). On her return voyage, light in ballast, the average speed was 8.2 knots (or 9½ miles). The consumption of oil fuel for the round voyage, including auxiliary compressor, was 6½ tons, say 1.65 to 1.75 tons per day.

It is claimed that in many ways the Toiler is more economical than a steam driven boat. She has a greater deadweight capacity, owing to the fact that the oil engines are much lighter than steam engines and boilers, the amount in this vessel being about 60 tons; the cubic capacity for cargo is also greater, as the boiler space is saved, and besides the oil fuel can be carried in the double bottom in place of water ballast, thus saving bunker space.

The consumption of oil is much less in weight than the consumption of coal for steam engines. In the Toiler the consumption at full speed does not exceed 1.75 tons per day of fuel oil of 18,000 b.t.u. calorific value, whereas with steam engines of equal power the consumption of coal would not be less than eight tons per day. The actual difference in cost depends, of course, upon the relative prices of coal and oil in the district where the vessel may be trading.

Not only is the economy of this vessel shown in the increased deadweight of cargo carried, the increased cubic capacity, and the low fuel consumption, but the staff on board to attend to the oil engines is less than the staff required for steam engines and boilers, the engine room staff being about the same, whilst firemen are not required.

The deck machinery and engine room accessories of the Toiler are driven by compressed air, being furnished by a compressor driven by a small oil engine. The electric light, with which the vessel is fitted, obtains its power from a small paraffin engine. The accommodation is heated by hot water, and the heat is obtained either from the exhaust gases of the main engine or by means of a coal fire. There is thus no steam on board the boat.

◆

Blue Book of American Shipping.—In issuing this standard marine directory the publishers announce that for the future it will be issued biennially instead of annually. While the volume aims at covering the marine interests of North America, and does so pretty thoroughly, it gives special attention to the marine interests of the Great Lakes. This field, which constitutes the largest feeders of the railways, and has an important bearing, particularly on the Atlantic Ocean trade, is thoroughly covered. This trade is of growing importance, and the statistics compiled in reference to it are of special value. The lists of vessels, owners, etc., and of shipbuilding and repairing yards, dry docks, and of the various interests connected with the owning and operation of vessels are complete. The Blue Book is published at $5 by the Penton Publishing Co., Cleveland, Ohio, and copies may be obtained from the Railway and Marine World Book Department.

Grounding of the s.s. Manchester Spinner.

An investigation into the cause of the grounding of the Manchester Liners, Ltd., s.s. Manchester Spinner on White Island reef, recently, was held at Quebec, June 16, before Capt. L. A. Demers, F.R.A.S., Wreck Commissioner, assisted by Capts. Clitt and Nash as nautical assessors. Following is the text of the judgment:

The court having fully weighed the evidence adduced finds that Pilot Lachance committed two errors of judgment, in the first instance by his neglect in concentrating his mind upon the location of the light ship, which he should have relied upon as a guide for his course, and secondly by his action in leaving such a wide margin between his vessel and the light ship, when he finally discovered his error and attempted to pass through the channel of half or three-quarters of a mile between the light ship and the reef, and the court holds that he should have kept in closer proximity to the light ship, thus permitting his vessel to pass clear of the reef, or that he shauld have starboarded his helm, turned his ship to the eastward and passed to the north and eastward of the light ship for the north channel, which, under the circumstances, would have been the most judicious course for him to have pursued. In view of the errors on his part above set forth, the court finds it incumbent upon it to condemn the pilot to a fine of $100, to be paid in two monthly installments, he, however, being allowed to retain his branch.

The court, furthermore, finds it necessary to issue a warning to Second Officer R. Stoker that he exercise better discretion in the future, and to realize that although there may be a pilot on the bridge that he is, nevertheless, the representative of the captain and as such assumes full responsibility for the happenings on the vessel throughout the period that he is in charge of the bridge.

◆

Great Lakes Wireless Telegraphy

With reference to the information on this subject published in our last issue, we are officially advised by the radio-telegraph branch of the Naval Service Department that it has been decided that the Dominion Government will install its own wireless telegraph system on the Great Lakes. There is already a station at Port Arthur, and other western stations will be established first. Sites have been secured at the following points, at which stations will first be built:—Sarnia, Midland, in the neighborhood of Cape Hurd, and at Sault Ste. Marie, Ont. Other stations will later on be established in the neighborhoods of Kingston, Port Colborne, and Port Stanley, and at Toronto. Tenders for the erection of these stations will be invited immediately. The stations will all be of the most up to date type and provided with duplicate apparatus.

The system, when completed, will form the western end of a chain of stations extending from Belle Isle Straits, Cape Race, or St. John, N.B., as the case may be, to Port Arthur, Ont. The chain will be a continuous one, and it will be possible to file a message in Port Arthur for delivery to a ship located anywhere between Port Arthur and 500 miles east of Cape Race or Belle Isle, the message being handled by wireless all the way.

We are officially advised that the C.P.R. intends to equip its steamboats on Lakes Huron and Superior with wireless apparatus, but that this will not be done until the necessary land stations are established.

Notices to Mariners.

The Department of Marine has issued the following:—

52. May 26. 127.—British Columbia, Clayoquot sound, Templar channel, Deadman passage, and Tofino, hydrographic information, uncharted rocks.

53. May 26. 128.—Ontario, Lake Ontario, Bay of Quinte, Telegraph narrows, shoal water in newly dredged channel, caution.

54. May 26. 129.—Nova Scotia, south coast, off Three Fathom harbor, gas and bell buoy established. 130. Nova Scotia, south coast, Petpeswick inlet, buoys established. 131. Prince Edward Island, south coast, Bedeque bay, Miscouche shoal, buoy established, change in color of gas and whistling buoy. 132. Prince Edward Island, North point reef, color of whistling buoy.

55. May 27. 133.—Newfoundland, east coast, Cape St. Francis, change in character of light. 134. Newfoundland, east coast, St. John's harbor entrance, Fort Amherst, change in character of light. 135. Newfoundland, east coast, Cape Spear, change in character of light. 136. Newfoundland, west coast, Flat island, non-existence of shoal westward of. 137. England, south coast, Needles channel, light buoy established.

56. June 2. 138.—Quebec, Gulf of St. Lawrence, position of telegraph cable between Great Fox river, Gaspe coast and southwest point Anticosti. 139. Newfoundland, Strait of Belle Isle, Flower island, explosive fog signal.

57. June 7. 140.—Quebec, Gulf of St. Lawrence, Magdalen islands, Alright island, Pointe Basse, light established on wharf. 141. Quebec, Gulf of St. Lawrence, Magdalen islands, Amherst island, Pleasant bay, Amherst, light established on wharf.

58. June 8. 142.—Ontario, Georgian Bay, Byng inlet, hydrographie notes, buoyage, day beacons, sailing directions.

59. June 13. 143. Prince Edward Island, south coast, Bedeque bay, Miscouche shoal, position of buoy. 144. Prince Edward Island, Northumberland strait, West reef, position of gas and whistling buoy. 145. Prince Edward Island, north coast, Cascumpeque harbor, Alberton, range lights not in operation. 146. New Brunswick, east coast, Northumberland Strait, Kouchibouguac bay, St. Louis gully, Kouchibouguacsis river, change in position of back range light.

60. June 14. 147. Quebec, River St. Lawrence, channel between Lachine Rapids and Victoria Bridge, shoal spot above Nuns Island. 148. Quebec, Ottawa river, Lake of Two Mountains, Pointe a Cadieux, light improved. 149. Quebec, River St. Lawrence, Lake St. Francis, St. Anicet, hand fog horn at light station. 150. Ontario, Georgian bay, Thornbury, temporary front range light. 151. Ontario, Georgian bay, Victoria Harbor, Flat point, color of buoy.

◆

An order in council has been passed granting permission to register the s.s. Scot, formerly registered at Southampton, Eng., at Toronto, under the name of Oceana. She is owned by the Bermuda Atlantic Steamship Co., Toronto, and has been purchased from the Hamburg-American Line, which acquired her from British owners in 1895. The name is to be changed again in a year if the Government require the company to do so.

A strike of British seamen in the early part of June caused a number of Canadian vessels to be held at British ports. C.P.R. and White Star-Dominion vessels were somewhat delayed. An increase of $5 a month was demanded, the C.P.R. compromising, June 15, on an increase of $3.75 a month.

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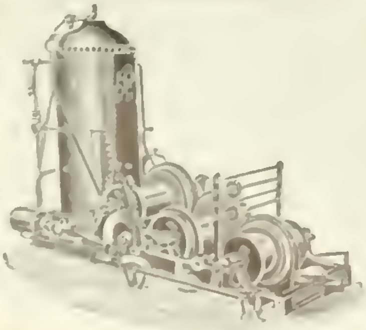

Richelieu & Ontario Navigation Co., Ltd.

The Dominion Parliament amended the company's act of incorporation recently by giving the shareholders power to increase the capital stock to an amount not exceeding $10,000,000 At a special meeting of shareholders on June 26 it was decided to increase the stock from $5,000,000 to $10,000,000, the new shares to be issued as decided by the directors. It was also decided to confirm the agreement made by the directors with the British Maritime Trust Co., Ltd., and others, providing for the purchase of a majority of the shares of the Northern Navigation Co., Ltd., and of the Inland Lines, Ltd., to be paid for by the issue of fully paid up R. & O.N. stock. Five additional directors were elected, the full board being: Hon. President, Lord Furness, of Grantley; President, R. Forget, M.P.; Vice President, W. Wainwright, Second Vice President, G.T.R.; G. Caverhill, Sir Henry M. Pellatt, E. Bristol, K.C., M.P.; W. Hanson, Jas. Playfair, C. O. Paradis, Hon. J. P. B. Casgrain, Hon. E. B. Garneau, H. M. Molson, C. A. Barnard, K.C.; A. H. Sims, J. R. Binning and W. G. Morden. The head office will remain at Montreal, and C. J. Smith will be retained as General Manager.

The Northern Navigation Co. of Ontario, Ltd., was organized in 1899, with a capital of $1,000,000, being an amalgamation of the Great Northern Transit Co. and the North Shore Navigation Co., and later the control of the Northwest Transportation Co. was obtained. A year or two ago the words "of Ontario" were dropped from the title. In the early part of this year, Jas. Playfair, President, Inland Lines, Ltd., made an offer, on behalf of himself and associates, chiefly the Furness interests, to purchase a controlling interest in the stock, and all but a small percentage of it was so acquired. The company has an agreement with the G.T.R. respecting traffic on the Great Lakes, and under this agreement, it has to build an additional steamship by the fall of 1912. Full details of the matters connected with the transfer of the stock, etc., were given in our Feb. and Mar. issues.

Inland Lines, Ltd., was incorporated under the Dominion Companies Act, May, 1910, with a capital of $3,500,000, and office at Hamilton, Ont., to take over the Inland Navigation Co., formerly operated under the name of R. O. and A. B. Mackay, together with the New Ontario Dock and Coal Co.'s wharf and coal business at Sault Ste. Marie, Ont.; R. O. and A. B. Mackay's wharf, cartage and coal business at Hamilton, Ont., and their wharf, shed and wharf privileges at Montreal; the property of the Midland Navigation Co., Midland, Ont., and the property of the Empress Transportation Co., Midland, Ont.

The R. and O.N. Co.'s combined fleet is now composed as follows:—Berthier, Belleville, Boucherville, Kingston, Longueuil, Montreal, Murray Bay, Quebec, Rapids King, Rapids Prince, Rapids Queen, St. Irenee, Saguenay (now en route to Canada, from England), Tadousac, Terrebonne, Trois Rivieres, Toronto, operated by the R. and O.N. Co.; Rochester, operated by the Richelieu and Ontario Navigation Co. of the United States; City of Midland, Doric, Hamonic, Huronic, Germanic, Ionic, Majestic, Waubic, operated by the Northern Navigation Co.; Donnacona, Dundee, Dundurn, Emperor, Empress of Fort William, Empress of Midland, Glenellah, Midland King, Midland Prince, Midland Queen, Neepawah, Rosedale, Stadacona, Strathcona, Wahcondah and Winona, operated by Inland Lines, Ltd.

Since the foregoing was put in type the s.s. Saguenay has arrived at Quebec.

Atlantic and Pacific Ocean Marine.

The Red Star Line s.s. Samland, which has been transferred to the Canadian Line, arrived at Montreal, June 3, on her first trip up the St. Lawrence.

The s.s. Sinbad, which recently arrived at Montreal, from Middlesbrough, Eng., with a cargo of scoria blocks, will, it is stated, be utilized in the Canadian river and lake trade. She is 538 tons register.

The Union Steamship Co., of New Zealand, which secured the Canadian mail contract recently, for a monthly service between Vancouver and New Zealand, is reported to be about to order the construction of an additional vessel of about 10,000 tons, for the service.

The Manchester Liners, Ltd., s.s. Manchester Spinner, ran aground at White Island, June 2, while on the way up to Montreal. She floated off with the tide and was taken to Quebec, where she was docked. Her tanks were found to be leaking badly, and repairs were made. An enquiry into the grounding has been held, and the judgment in the matter is given on another page.

G. M. Bosworth, Vice President, C.P.R., while in London, Eng., is reported to have stated that the C.P.R. had no intention of withdrawing from the North Atlantic Conference. The agreement expire June 30, and he saw no reason why it should not be renewed on the old basis. He continued that there were no serious differences between the various lines concerned and there was no likelihood of a rate war.

A press despatch from Rome, Italy, states that a parliamentary commission has reported favorably on the proposed law to establish a steamship service between Italy and Canada, and continues that Canada has offered a subsidy on condition that fast vessels of a certain tonnage be put into operation, and that certain ports be included in the route. It is expected that the line will be inaugurated this year, or early next.

Press reports from London, Eng., state that the Canadian Northern Ry. is moving towards the adoption of fast mail service between Great Britain and the Orient, by way of Canada, on the lines of what has become known as the all red route. It is also stated that as regards the Atlantic portion of the route, it has been well known for some time that vessels are under construction at Wallsend, which will cut down the time from land to land, to 3½ days.

Judgment in the cross cases of the C.P.R. as owners of the s.s. Montcalm, and J. Bryde, of Safuafjord, Norway, owner of the s.s. Kromprinz Olaf, each suing the other for damages sustained by the vessels, when in collision in the River St. Lawrence, Sept. 24, 1910, was delivered, June 13, to the effect that both vessels were in fault, and that damages arising out of the collision shall be borne equally by the two vessels, each party to the actions to bear their own costs.

G. M. Bosworth, Vice President, C.P.R., in an interview in London, Eng., early in June, stated nothing had been done regarding the building of any additional vessels for the Atlantic service, and as regards those for the Pacific service, he stated that although the contracts had not been definitely awarded, new vessels of from 14,000 to 15,000 tons would be ready for the Pacific in the early part of 1913. Each vessel will have accommodation for about 1,500 passengers, and be well adapted for the service.

C. M. Hays, President, G.T.R. and G.T.P.R., is reported to have stated recently that it is the company's intention to consider the question of establishing a steamship service on the Pacific Ocean in the near future, with Prince Rupert as the Canadian terminal point.

The Dominion Government has awarded a contract to Pickford and Black for one year from June 30, for a steamship service every 22 days from St. John, N.B., and Halifax, N.S., to the West Indies. A service between these points was previously operated on a joint subsidy by the British and Dominion Governments, but the former has now withdrawn.

The Cunard Line's s.s. Ascania arrived in Montreal, June 3, on her maiden trip, from Southampton, Eng. This vessel, which was acquired from the Cairn Steamship Line, recently, while it was under construction at Wallsend, Eng., under the name of Gerona, is of the following dimensions: Length, between perpendiculars, 466 ft.; beam, 56 ft.; depth to upper deck, 32 ft.; with a gross tonnage of 10,000. The machinery consists of triple expansion engines, with cylinders 26, 42 and 69 ins. diar., by 48 ins. stroke, of 4,400 i.h.p. There are four multitubular boilers. The equipment includes Marconi wireless telegraph apparatus, submarine signalling apparatus and complete electric lighting equipment. The vessel has been arranged for two classes only, and has accommodation for 200 cabin and 1,000 third class passengers.

At the Imperial Conference in London, Eng., early in June, it was proposed that it is desirable that Great Britain should be connected with Canada, and through Canada, with Australia and New Zealand, by the best mail service available, and that a mail service be established on the Pacific, between Vancouver, Fiji, Auckland and Sydney, of first class steamers of not less than 10,000 tons, capable of 16 knots, and in addition that fast service be established between Canada and Great Britain, the financial support for both purposes to be contributed by Great Britain, Canada, Australia and New Zealand in equitable proportions. A fast line of steamers was also proposed between Great Britain, Newfoundland and Canada, with a subsidy contributed on the basis of population, wealth and trade interests. After considerable discussion, the matter was left to be dealt with by a Royal Commission.

Maritime Provinces and Newfoundland.

The Department of Railways and Canals will receive tenders to July 20 for the construction of piers and sheds at Halifax, N.S.

The contract for the construction of a breakwater at Little Anse, N.S., at a cost of $21,500, has been awarded to T. D. Morrison, D'Escousse, N.S.

Browning Bros'. sealing steamer Aurora, which was built at Dundee, Scotland, in 1876, and has since operated out of St. John's, Nfld., has been sold to English parties.

The Labrador Whaling Co.'s steam whaler Cachelot, built at Christiania, Norway, to replace the vessel of the same name, wrecked at Belle Isle last year, arrived at St. John's, Nfld., June 6.

The Dartmouth, N.S., Ferry Commission, June 13, referred the matter of obtaining complete plans for remodelling the Halifax terminal to a committee, with power to make all necessary plans and specifications.

The British s.s. Ben Earn, under charter to the Dominion Coal Co., ran ashore on Half Moon ledge, off Baccarre Point, near Barrington, N.S., June 18, while bound from Sydney to St. John.

The Halifax Dry Dock Co. has filed plans with the Public Works Department for an extension of 50 ft., making 650 ft.

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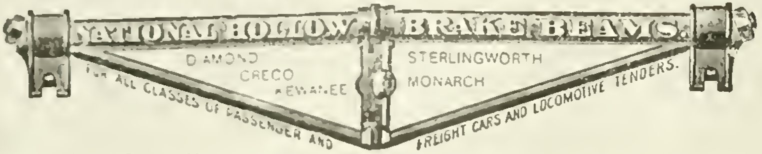
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in all. It is stated that the work will be put in hand as soon as the plans are approved.

The Department of Public Works is calling for tenders for the construction of a breakwater, wharves, dry dock and shipbuilding plant at St. John, N.B., and for dredging and piling. The cost is estimated at from $6,000,000 to $8,000,000.

Hon. J. C. Crosbie, St. John's, Nfld., has ordered a sealing steamer to be built in Dundee, Scotland, for delivery by Dec. 31. She will be 175 ft. long, 28 ft. wide and 13 ft. deep, with accommodation for 50 saloon passengers, and space for 25,000 seals.

The Reid Newfoundland Co. has purchased the British s.s. Solway for use in its Labrador service. She was built in 1881, but has since been overhauled, and recently re-engined. She is 836 tons gross and 427 tons register, with a speed of about 12 knots an hour. She was expected to sail from Glasgow, Scotland, for St. John's, Nfld., June 20.

Job Bros., St. John's, Nfld., have placed an order at Wallsend, Eng., for the construction of a sealing steamer, to be called Nascopie. She will be equipped with electric searchlight, and be fitted with special hatches for the quick loading and discharging of cargo. The contract calls for completion by Dec. 31, so that she may reach Newfoundland in January, 1912.

The British s.s. Appenine, recently took to Portland, Me., from Dalhousie, N.B., what is stated to be the largest cargo of pulpwood ever landed there from any one vessel, being over 2,700 cords. She is under charter to the International Paper Co., and it is stated that another vessel is to be chartered to run in connection with her, from Chatham and Dalhousie, N.B.

The Reid Newfoundland Co's s.s. Bruce, which is under construction at Glasgow, Scotland, to take the place of the s.s. Bruce wrecked recently, will be of the following dimensions: length, 250 ft.; breadth, 36 ft.; depth, 18.3 ft., with accommodation for 75 passengers. W. D. Reid, President, while on a visit to St. John's, Nfld., June 10, stated that she would be in operation by Sept., or possibly earlier

The British Canadian Shipbuilding and Dock Co., recently organized to build a dry dock and shipbuilding plant at Sydney, N.S., is reported to have acquired 300 acres as a site, and will be prepared to start work at once, if, as is anticipated, it is successful in obtaining the contract for the building of vessels for the Canadian navy. Among those interested in the scheme are Sir Henry M. Pellatt, Toronto; Hon. J. M. Gibson, Lieut.-Governor of Ontario, and Sir Charles Ellis, chairman John Brown & Co., Clydebank, Scotland. It is also stated that the company proposes to establish a fast line of steamships between Sydney and Fishguard, Great Britain.

Province of Quebec Marine.

The Department of Railways and Canals received tenders June 27, for protection works on the Soulanges canal.

J. M. Nelson, Assistant Engineer to the Montreal Harbor Commission, has resigned after 22 years' service, on account of ill health.

The Department of Marine has issued an order that all vessels must slacken speed when passing the Quebec bridge site.

The Richelieu and Ontario Navigation Co., it is reported, is considering negotiations with a view to the adoption of oil as fuel on its vessels.

The Montreal Harbor Commissioners are erecting an electric hoist capable of lifting 15 tons, between sheds 7 and 8. The work is expected to be completed early in Aug.

During May over 6,500,000 bush. of grain in about 150 vessels passed through the Lachine canal, in addition to 4,704 cases of eggs, 580 packages of butter, and 15,270 packages of cheese.

The Richelieu and Ontario Navigation Co.'s s.s. Quebec was driven ashore during a windstorm at Sorel, recently, and her rudder was torn away and the steering gear disarranged.

The quarantine steamboat Polana, which the Government has had built at Kingston, for the service at Grosse Isle, has been delivered and placed in service.

The Montreal Harbor Commissioners recently received tenders for a number of improvements in the harbor, at an approximate cost of $1,000,000. The works include the erection of four piers, each 800 ft. long and 235 ft. wide.

An order in council has been passed granting permission to re-register at Quebec, the recently wrecked steamship King Edward, formerly registered at Hull, Eng., under the name of Laurentian, all the legal requirements having been complied with.

At a luncheon on the Cunard Line s.s. Ascania, June 6, on her arrived at Montreal on her maiden trip from England, it was stated that the day was not far distant when Montreal would be created a free port.

The Montreal city authorities have issued instructions to the assessors to assess for taxation property under the jurisdiction of the Montreal Harbor Commission, which has always been claimed to be exempt, as Government property.

The Lake Champlain and St. Lawrence Ship Canal Co. has filed plans with the Public Works Department for a proposed 12 ft. waterway between Montreal and New York, involving the construction of about 21 miles of new canal through Chambly, St. Johns and Laprairie counties, Que.

Work is reported to have been commenced at Barrow-in-Furness, Eng., on the floating dry dock which it is proposed to install at Montreal. A large force of men is engaged in preparing the site at Montreal, which, it is expected, will be completed during next year. The work is being carried out by Canadian Vickers, Ltd., recently incorporated for the purpose.

The Three Rivers Ferry Co., Ltd., has been incorporated under the Quebec Companies Act, with a capital of $49,000, and office at Three Rivers, to purchase the steamboat Glacial from the town of Three Rivers, and to own the steamboat Sorel, both of which it is intended to operate between Three Rivers, St. Angele de Laval, St. Francois du Lac, Nicolet and other points. The town of Three Rivers is paying an annual bonus for the service. The incorporators are F. J. Ritchie, L. P. Bellefeuille, M. Lewis, and C. Salva, Three Rivers.

Ontario and the Great Lakes.

The Department of Public Works has awarded the contract for dredging in the River Thames to W. E. Phin, Welland.

The Public Works Department will issue tenders to July 5 for the construction of a breakwater at Bare Point, Port Arthur.

The steamboat City of New York, owned in Cobourg, is reported to have been sold to Toronto parties for use in the sand trade.

The contract for dredging from the eastern channel into Ashbridge's Bay, Toronto, has been awarded to R. Weddell and Co., Trenton.

The Ontario and Quebec Navigation Co., Ltd., has been licensed to carry on its business in Ontario with B. H. Hepburn, Picton, as its attorney.

The Dundas board of works received tenders, June 25, for the dredging of the Desjardins canal, involving the removal of 27,500 cub. yds. of material, the work to be completed by Sept 1.

The Inland Lines steamboat Dunelm, which ran ashore towards the close of navigation last year, has been completely repaired and overhauled at Port Arthur, and left the dry dock June 8.

The Buffalo, Lockport and Rochester Ry.'s steamboat Olcott arrived at Toronto for the first time, June 3. She is making two trips daily between Toronto and Olcott Beach, connecting with the company's lines to Rochester and Buffalo, N.Y.

M. J. Haney has applied to the Toronto city council for an extension of his lease from 21 years from Oct. 1, 1908, of the waterfront property between Jarvis and West Market Sts., at an annual rental of $667.20. He proposes to add to the wharf, at a cost of $25,000.

The annual meeting of the Thousand Islands Steamboat Co. was held at Cape Vincent, N.Y., June 6. R. Crawford, President, was appointed also General Manager in place of W. J. Douglas, re-

Lake Grain Shipments

The following statement, prepared by F. E. Gibbs, Grain Inspector, Fort William, Ont., shows the bushels of grain shipped by vessels from Fort William and Port Arthur, of the 1910 crop, from the close of navigation to May 31. The last two figures in each column represent lbs.

Destination	Wheat	Oats	Barley	Flax
Canadian ports:				
Depot Harbor	318,518.20	34,000.00	....	....
Goderich	882,502.10	461,372.12	34,901.00	....
Kingston	1,644,214.00	655,458.30	204,223.08	50,627.38
Montreal	1,017,264 50	2,220,009 02	....	....
Meaford	105,000.00	....	....	....
Owen Sound	144,903.10	99,541.14	10,005.30	....
Port Colborne	1,294,478.20	166,147.12	....	....
Point Edward	185,630.00	40,000.00	9,727.32	15,053.45
Quebec	....	86,959.04	....	....
Tiffin	1,655,426.00	315,000.00	....	....
Victoria Harbor	148,417.40	....	....	....
Walkerville	57,370 00	....	....	....
	7,513,724.30	4,078,488.06	258,857.22	65,681.27
Foreign ports:				
Buffalo	6,774,579.50	247,392.24	195,000.00	194,414.08
	14 228,304.20	4,325,880.30	453,857 22	260,095.35
Same period 1910	8,384,297 10	5,165,190 05	330 872.11	795,691.1

Note.—In the table of grain shipments given in our last month's issue, by a mistake in our office, the returns for Depot Harbor were included in those relating to foreign ports

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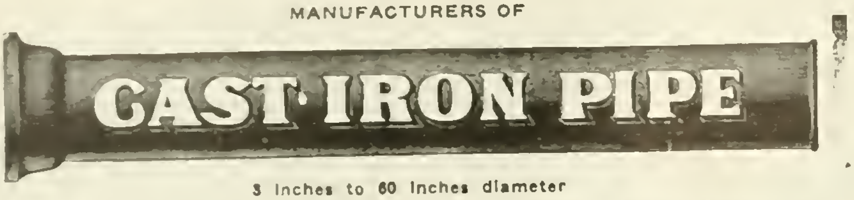

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American
New York, Plymouth, Cherbourg, Southampton
St. Paul . July 1 St. Louis ....July 15
Philadelphia July 8 New York ...July 22

Atlantic Transport
New York London Direct
Minnewaska July 1 Minnetonka ..July 15
Minneapolis July 8 Minnehaha ...July 22

Red Star
London, Paris, via Dover Antwerp
Finland July 1 Lapland ..July 15

White Star
New York—Queenstown—Liverpool
Baltic ....July 1 Arabic ......July 15
Celtic ....July 8 Cedric ....July 22

New York, Plymouth, Cherbourg, Southampton
Olympic ....June 28 Oceanic .....July 19
Adriatic ...July 12 Olympic .....July 26

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Heavy Gearing
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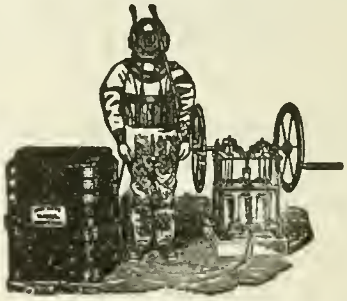

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signed, and the other officers were reelected.

W. J. Douglas, heretofore General Manager, Thousand Islands Steamboat Co., and St. Lawrence River Steamboat Co., Kingston, is reported to have been appointed General Freight Agent, Southern Pacific Co.'s Steamship Department at Seattle, Wash.

The Trotter Wrecking Co., Amherstburg, has been awarded $7,500 for salving the Superior Charcoal Iron Co.'s steamboat Chauncey Hurlbut, after grounding near Amherstburg in 1906. The matter has been before the courts for some time.

The Public Works Department is reported to have purchased the lower end of Victoria Island, in the Ottawa River for the construction of a shipyard for building barges, tugs, etc., for its business on the Ottawa and St. Lawrence Rivers and the Great Lakes.

The Niagara, St. Catharines and Toronto Navigation Co.'s steamboat Lakeside has been sold to M. J. Hogan, contractor, Port Colborne. The price paid is said to be $10,000. She will be used for conveying supplies in connection with various lake improvement contracts.

The Montreal Transportation Co.'s steamboat George Davy struck on the lighthouse shoal near Clayton, N.Y., June 13, and sank in 50 ft. of water. The cargo of 50,000 bush. of grain has been pumped out, and the vessel is to be raised. Divers reported that several plates were pierced.

The Public Works Department has commenced surveys in reference to the proposed power development plants at Cedar Rapids and other points on the St. Lawrence. Data are to be collected and a commission appointed to report on the effect such plants will have on navigation generally.

The Toronto board of control had under consideration, June 7, the formation of a new Harbor Commission under the recent legislation. A number of names were submitted, but as it was stated that no work to improve the harbor could be undertaken this year, the whole matter was deferred.

Surveys are under way providing for a route for the proposed new Welland canal. It is proposed to deepen the waterway from Port Colborne to the height of land and then run west to the present canal along the ravine and through St. Catharines to Port Dalhousie. Plans and estimates are expected to be ready in the fall.

The Cornwall and Montreal Navigation Co.'s steamboat Filgate was destroyed by fire recently at Valleyfield, Que. She was built in 1879, and was originally used by the C.P.R. as a ferry between Caughnawaga and Lachine, and was later used between Montreal and St. Helen's Island. She was valued at about $25,000, and was insured for $5,000.

The Rainy River Navigation Co.'s steamboats Keenora and Agwinde commenced operations for the season between Kenora and Fort Frances June 17. The running of these vessels has been considerably interfered with during the past two years owing to low water at the mouth of the Rainy River, but a large amount of dredging has been carried out there recently.

The Lake Carriers' Association announced the opening of a new channel to relieve congestion in the main channel of the Detroit River during dredging. Masters of vessels are instructed not to exceed a draught of 15.5 ft. either up or down, over Ballard's reef, and to take the new channel, which is 200 ft. wide, east of the main channel, and marked by five spar buoys.

Muir Bros'. Dry Dock Co., Ltd., has been incorporated under the Ontario Companies Act, with a capital of $90,000, and office at Port Dalhousie, to carry on the business of building, owning and operating dry docks and vessels of all descriptions. The incorporators are W. C. and J. F. Muir, Port Dalhousie; G. P. Muir, Gleichen, Alta.; R. M. Muir, Detroit, Mich.; A. B. Muir, New York City, and H. D. O. Kingstone, Montreal.

The Northern Steamship Co.'s s.s. North West, which runs between Buffalo, Chicago and Duluth, in conjunction with the s.s. North Land, was heavily damaged by fire while moored at her dock in Buffalo, N.Y., June 3. She was being overhauled for the season's business. Reports state that the interior was destroyed, leaving only the steel hull, and that the damage amounts to about $500,000.

The Department of Railways and Canals has awarded the contract for improving the Port Colborne entrance to the Welland canal to M. J. Hogan, Port Colborne. The work consists of widening the 22 ft. channel into the inner harbor, and the lengthening of the mooring dock west of the Government elevator. The widening of the channel consists entirely of rock excavation. The material taken out will be used to widen the piling at the rear of the west pier.

The U.S. Lake Survey reports the levels of the Great Lakes, in feet above tidewater, for May, as follows:—Superior, 600.90; Michigan and Huron, 579.70; Erie, 571.87; Ontario, 245.60. As compared with the average May levels for the past 10 years, Superior was 1.34 ft.. below; Michigan and Huron, 1.16 ft. below; Erie, 0.76 ft. below, and Ontario, 1.13 ft. below. During June it was anticipated that Superior would rise 0.3 ft., Michigan, Huron and Erie 0.2 ft., and Ontario 0.1 ft.

The Ontario and Quebec Navigation Co.'s steamboat Geronia was launched at Collingwood June 7. She is of the following dimensions: length, 219½ ft.; breadth, 42 ft.; depth, 11½ ft., and is of steel throughout, sheathed with rock elm at the bottom. The hull is divided into six watertight compartments The staterooms are all outside rooms, and the dining salon has seating capacity for 120. The machinery, which is located amidships, consists of quadruple expansion engines, supplied with steam by two Scotch marine boilers at 250 lbs. pressure, driving a screw.

The Dalhousie Navigation Co., Ltd., the incorporation of which we announced in our last issue, was formed for the purpose of owning the steamboat Dalhousie City, which will be operated under lease by the Niagara, St. Catharines and Toronto Navigation Co The companies mentioned are controlled by Mackenzie, Mann and Co., Ltd., Toronto.

The steamboat Dalhousie City, a detailed description of which was given in our last issue, was launched at Collingwood, June 24, the christening ceremony being performed by Miss Mary Hanna, daughter of D. B. Hanna, Third Vice President, C.N.R., and President, Niagara, St. Catharines and Toronto Navigation Co.

Manitoba, Saskatchewan and Alberta.

The Arctic Ice Co. is reported to have decided to build four or five large barges this year, each of about 400 tons capacity.

The Lake Winnipeg Supply Co. is building a wharf on the Red River, north of Broadway bridge, and is also building a second barge, with a third one under consideration.

The Hyland Navigation and Trading Co. renewed its complaint, June 18, to the Winnipeg board of control regarding the delay caused to vessels owing to the city not having men on the spot to open the bridges to allow vessels to pass. It was stated that the matter would be taken in hand at once.

Manitoba Quarries, Ltd., has been incorporated under the Manitoba Companies Act, with a capital of $750,000 and office at Winnipeg, to carry on a general quarrying business, and in connection therewith to build and operate steamboats, tugs, barges, etc. The incorporators are, A. N. Williams, T. Kelly, G. N. Young, Winnipeg; J. Gunn, E. Williams and E. J. Williams, Stonewall, Man.

The Hudson's Bay Co. is operating vessels as follows, during the season:—Port Simpson, from Prince Rupert to Hazleton, B.C., captain, J. P. Bucey; chief engineer, R. Denniston; Peace River, on Peace River, from Vermilion to Hudson's Hope, Alta.; captain, J. Gullion; chief engineer, J. Sutherland; Inenew, on James Bay; captain, —. McGlashan; chief engineer, J. Love; Primrose, to and from points on Lake Athabasca, and Churchill, to Beaver River, Isle a la Crosse Lake, and Buffalo Lake. The steamboat Saskatchewan will not be operated.

SAULT STE. MARIE CANALS TRAFFIC

The following commerce passed through the Sault Ste. Marie Canals in May:

Articles			Canadian Canal	U. S. Canal	Total
Copper	Eastbound	Short tons	1,575	14,986	16,561
Grain	"	Bushels	4,823,990	1,340,727	6,164,717
Building stone	"	Short tons	612	....	612
Flour	"	Barrels	260,700	530,367	791,067
Iron ore	"	Short tons	2,796,838	652,837	3,449,675
Pig iron	"	"	2,950	4,648	7,598
Lumber	"	M. ft. B.M.	5,355	71,748	77,103
Silver ore	"	Short tons	....	....	....
Wheat	"	Bushels	9,967,015	1,750,923	11,717,938
General merchandise	"	Short tons	707	8,633	9,340
Passengers	"	Number	799	867	1,666
Coal, hard	Westbound	Short tons	102,787	111,092	213,879
Coal, soft	"	"	843,896	661,960	1,505,856
Flour	"	Barrels	....	....	....
Grain	"	Bushels	....	....	....
Manufactured iron	"	Short tons	28,279	29,591	57,870
Iron ore	"	"	3,130	....	3,130
Salt	"	Barrels	32,181	116,727	148,908
General merchandise	"	Short tons	91,610	69,461	161,071
Passengers	"	Number	1,787	508	2,295
Vessel passages		Number	916	1,351	2,267
Registered tonnage		Net	2,568,400	2,342,662	4,911,062
Freight—Eastbound		Short tons	3,232,777	928,331	4,161,108
" —Westbound		"	1,074,300	889,610	1,963,910
Total freight		"	4,307,077	1,817,941	6,125,018

Short tons are tons of 2,000 pounds

B.C. and Pacific Coast Marine

Navigation on the Yukon River opened June 4, when the steamboat White Horse left White Horse for Dawson.

Capt. Jas. Gaudin, Victoria, has been appointed Nautical Commissioner and Examiner of Masters and Mates for British Columbia.

The G.T.P. Coast Steamship Co.'s s.s. Prince Rupert has been taken to Seattle, where her [illegible] are to be remodelled and forced draught put in.

G. R. Robertson, formerly captain of the G.T.P. Coast Steamship Co.'s s.s. Prince George, has been appointed agent, Department of Marine at Victoria, and commenced his duties, June 1.

The C.P.R. Coast Service s.s. Amur, which ran ashore at Wrangel Narrows, Alaska, recently, was built in Sunderland, Eng., in 1890, and is of 570 tons register. She is valued at £10,725.

A. A. Sears, master and part owner of the s.s. Iroquois which sank off Sidney, Apr. 10, and who was recently charged with manslaughter in connection with the disaster, was acquitted of the charge, June 8.

The material for the construction of a steel barge which the C.P.R. is to operate on the Kootenay Lakes, has arrived at Nelson, B.C., where it is to be put together. It was made by the Polson Iron Works, Ltd., Toronto.

The rock crushing dredge, which was recently built in Scotland, and shipped to Victoria, in sections, where it is being erected, was recently launched at Victoria. It was expected that she would be ready for operation by the end of June.

The Canadian North Pacific Fisheries, Ltd., s.s. Paterson, was launched at Seattle, Wash., June 10. She is about 100

THE ALGOMA CENTRAL AND HUDSON BAY RAILWAY COMPANY.

Tender for Railway Construction.

Sealed tenders for the construction of the Algoma Central Railway extension from [illegible] on the C.P.R. northerly to the National Transcontinental Railway at a point approximately 142 miles west of Cochrane, a distance of 101 miles, will be received up to noon July 15th, 1911.

The work includes all construction work to sub-grade and in addition track laying and ballasting, in accordance with plans, profiles, forms of tender and specifications at the office of the Chief Engineer, Sault Ste. Marie, Ontario.

All tenders to be marked "Tender for Construction," and to be addressed to R. S. McCormick, Chief Engineer, Algoma Central Railway, Sault Ste. Marie, Ontario.

The lowest or any tender not necessarily accepted.

DIVIDEND NOTICE

Niagara Navigation Company, Limited.

Notice is hereby given that an interim dividend of four per cent. (being at the rate of eight per cent. for the year) has been declared upon the Capital Stock of this Company, and the same will be payable on the 3rd of July, 1911.

The Transfer Books will be closed from June 15th to June 30th, 1911, both days inclusive.

By order of the Board.

B. W. FOLGER, General Manager.

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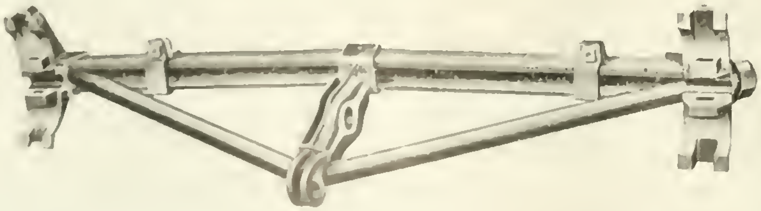

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ft. long over all, of steel construction, driven by oil fuel at a speed of 12 knots an hour. She will be registered in the U.S.

The paddle wheel steamboat La France, which recently struck a rock and sank in Lake Labarge, Yukon, was built at Lower Labarge, Yukon, in 1902. Her dimensions are: Length 99.8 ft., breadth 19.4 ft., depth 3.4 ft., tonnage 201 gross, 169 register.

The North Vancouver ferry committee, is calling for tenders for the construction of a wharf on the Vancouver side of the inlet, at an estimated cost of $27,000. The plans show 16 pontoons similar to those at the North Vancouver floating wharf.

The G.T.P. Coast Steamship Co.'s s.s. Prince John, formerly Amethyst, which is expected to arrive on the coast, early in July, was built last year, and subsequently purchased by the company She has seven water tight bulkheads with double bottom, and is equipped with triple expansion engines, designed for a speed of 12 knots an hour. There is accommodation for 150 steerage passengers and good first class accommodation, and capacity for 450 tons of cargo. She will be operated on the Queen Charlotte Islands route.

C. M. Hays, President, G.T.P.R., was in Prince Rupert during the first week of June, in company with E. F. Donnelly, to look over the site of the proposed dry dock there. It was announced that an agreement had been reached with the city, and a bylaw was being prepared for submission to the ratepayers. The plans for the dry dock, which have been prepared, allow for a lifting capacity of 20,000 tons, and built for later expansion, if necessary.

The dredge tender, which is being built at North Vancouver for the Dominion Public Works Department, has the following dimensions: Length over all 100 ft., molded beam 37½ ft., molded depth 15¼ ft., draft forward 11 ft., aft 12½ ft. She is equipped with fore and aft compound surface condensing engines, with cylinders 17 and 40 ins. diar., by 27 ins. stroke, built in Glasgow, Scotland. The boiler is of the Scotch marine type, 14 ft. diar, by 12 ft. long, fitted with Morison corrugated furnaces. The cost is about $65,000.

The Northern Steamship Co.'s s.s. British Empire, arrived at Vancouver, June 11, from Scotland, having taken 141 days on the voyage. She was immediately docked and overhauled, and placed on the run between Victoria, Vancouver and Prince Rupert. She was detained at St. Vincent, for some time owing to her engines breaking down, to wait for repair parts from Scotland. She was built at Garston, Eng., in 1902, and is of the following dimensions: Length 167 ft., breadth 26 ft., depth 11½ ft., tonnage 562 gross, 252 register.. She was acquired from T. J. Sharpe and Co., Liverpool, Eng., to replace the s.s. Petriana, which was sold to the Canadian North Pacific Fisheries, Ltd.

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  - Canadian Car & Foundry Co....Montreal.
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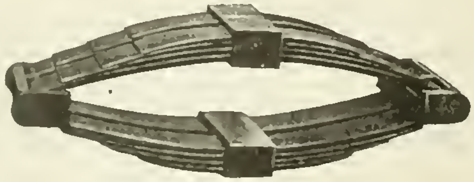

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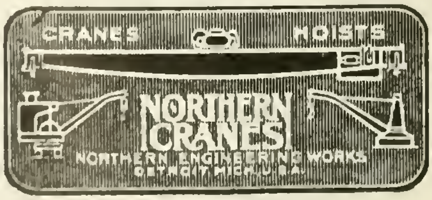

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United States Light & Heat. Co.New York

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Hoists, Electric
American Hoist & Derrick Co., St. Paul, M.

Hoists, Pneumatic
Taylor & Arnold ....Montreal.

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Duner Co. ....Chicago, Ill.

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Kerr Engine Co.........Walkerville, Ont.

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Nathan Manufacturing Co......New York.

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Alfred Lovell ....Philadelphia, Pa.

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Ohio Brass Co. .... Mansfield, Ohio

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Imp. Guarantee & Acc. Ins. Co..Toronto.
London Guar. & Accident Co., Ltd.Toronto

Insurance, Boiler
Can. Casualty & Boiler Ins. Co...Toronto.

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Railway Signal Co. of Canada....Montreal.
Saxby & Farmer, Ltd..........Montreal.

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Nova Scotia S. & C. Co., New Glasgow, N.S.

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Canadian Steel Foundries, Ltd., Montreal
Dominion Equip. & Supply Co., Winnipeg.
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F. H. Hopkins & Co., Ltd.....Montreal.
Mussens, Limited ....Montreal.
A. O. Norton ....Coaticook, Que.
James Smart Mfg. Co....Brockville, Ont.
Whyte Railway Signal Co. ....Toronto
Williams & Wilson, Ltd ....Montreal.

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Kerr Engine Co. ....Walkerville, Ont.
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Commercial Acetylene Co.........Toronto.

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Canadian Westinghouse Co..Hamilton, Ont.

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The Hudson's Bay Co....................
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The N. L. Piper Ry. Supply Co..Toronto.

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Walter MacLeod & Co. ....Cincinnati, O.
Safety Car Htg. & Ltg. Co.......New York

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Blaugas Co. of Canada, Ltd.....Montreal
Canadian Gold Car H'g & L'g Co.Montreal.
Commercial Acetylene Co.........Toronto.
Safety Car Heating & L'ting Co.New York.
United States Light & Heat. Co.New York

Lighting, Signal
Commercial Acetylene Co.........Toronto.

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Dominion Equip. & Supply Co., Winnipeg.

Locomotives, Electric
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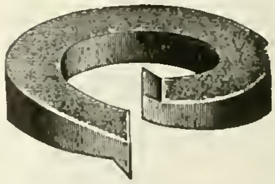

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Whyte Railway Signal Co.........Toronto

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The N. L. Piper Ry. Supply Co...Toronto.
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Whyte Railway Signal Co. .....Toronto.

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International Marine Signal Co....Ottawa.

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B. J. Coghlin & Co. ....Montreal.
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Canadian Steel Foundries Ltd., Montreal
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Steel Co. of Canada, Ltd .Hamilton, Ont.
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Jas Smart Mfg. Co. .....Brockville, Ont.
A B Jardine & Co , ...Hespeler, Ont.
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Williams & Wilson, Ltd ....Montreal.
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B. J. Coghlin & Co. ....Montreal.
F. H. Hopkins & Co....... .. .Montreal.
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Canadian Fairbanks Co., Ltd ..Montreal.
Williams & Wilson, Ltd ....Montreal.
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Trolley Poles, Steel
Dorner Railway Equip. Co...Chicago, Ill.
Trolley Wheels
Tallman Brass & Metal Co..Hamilton, Ont.
Trucks
Jas. Smart Mfg. Co. ......Brockville, Ont.
Trucks, Electric Car
Baldwin Locomotive Works..Philadelphia.
Canadian Steel Foundries, Ltd...Montreal
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Canadian Bridge Co. ....Walkerville, Ont.
Cleveland Bridge & Eng. Co., Ltd.,
Dominion Bridge Co. ....Montreal.
Tubes, Boiler
Jas. W. Pyke & Co., ...Montreal.
Turbines, Steam
Allis-Chalmers-Bullock Ltd .....Montreal.
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Canadian Steel Foundries, Ltd...Montreal
Turntables
Canadian Bridge Co. ....Walkerville, Ont.
Dominion Bridge Co. ....Montreal.
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Royal Typewriter Co. ....New York
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Consolidated Car Heating Co. Albany, N.Y.
Detroit Lubricator Co. ..... Detroit, Mich.
Williams & Wilson, Ltd. ....Montreal.
Valves, Angle and Globe
Detroit Lubricator Co. .... Detroit, Mich.
Kerr Engine Co. ....Walkerville, Ont.
Nathan Manufacturing Co. ....New York.
Valves, Brass Gate
Detroit Lubricator Co. ..... Detroit, Mich.
Kerr Engine Co. ....Walkerville, Ont.
Valves, Check
Nathan Manufacturing Co. ....New York.
Valves, Iron and Brass
Canadian Fairbanks Co., Ltd....Montreal.
Valves, Iron Gate
Detroit Lubricator Co. ..... Detroit, Mich.
Kerr Engine Co. ....Walkerville, Ont.
Valves, Locomotive Pop
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Taylor & Arnold ....Montreal.
Valves, Steam
Detroit Lubricator Co. ..... Detroit, Mich.
Nathan Manufacturing Co. ....New York.
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American Vanadium Co ....Pittsburg, Pa.
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Velocipedes
Kalamazoo Ry. Sup. Co..Kalamazoo, Mich.
Ventilators, Car
Burton W. Mudge & Co. ....Chicago, Ill.
Vessels
Polson Iron Works, Ltd ....Toronto
Wagons, Dump
Western Wheeled Scraper Co..Aurora, Ill.
Washers
Steel Co. of Canada, Ltd..Hamilton, Ont.
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New Series, No. 162

TORONTO, CANADA, AUGUST, 1911.

For Subscription Rates, See page 653.

The Classification of the Graduation on Railway Construction.

By Professor B. J. Dalton.

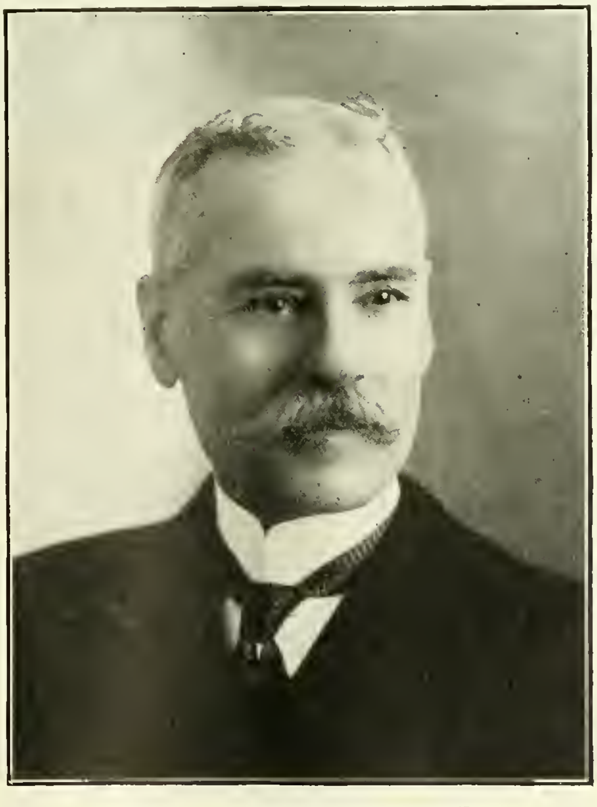
At the recent annual meeting of the Kansas Engineering Society, Prof. B. J. Dalton, of Lawrence, Kan., read a paper on this subject, a copy of which he has kindly furnished us, as follows:—

The classification is one of the most difficult problems for the young engineer. It is a subject that cannot be taught in the class room. A young man starting out for himself after graduation may, within the first year, work for two men, both working under the same specifications, yet their classification will be entirely different.

Several years ago, during the construction of a certain line of railway through this and adjoining states, a dispute arose between the contractor and the division engineer over the classification. The difference in their estimates amounted to $25,000 or $30,000. The chief engineer appointed a commission of three of the oldest and best engineers on the line to go over this particular piece of work and classify it. They were men of many years experience in railway construction, yet they differed greatly in their estimates, so finally allowed an average of the three classifications. There must be some reason for this difference, and I believe that it is due to the indefinite wording of the specifications, and each man's interpretation of them.

Here is a sample specification for solid rock used by a number of the large railway systems:—"Solid rock shall comprise rock in solid beds or masses in its original position, which may be best removed by blasting, and boulders or detached rock measuring one cubic yard or over." Even under these specifications I have seen indurated clay classified as solid rock, and I believe justly so.

The Santa Fe Rd. specifications are more explicit. They read:—"Solid rock shall comprise: First, rock in solid beds or masses in its original or stratified position. Second, boulders or detached masses of rock exceeding one cubic yard, and all other material which in the judgment of the chief engineer cannot be removed without continuous drilling and blasting, and which is as difficult and expensive to remove as solid lime or sand stone. The fact that blasting may be resorted to by the contractor, or be the most economical method of working a material, will not of itself entitle such material to be classified as solid rock." This specification leaves out soft sand stone which is too hard to be plowed, but which may be blasted and then taken out with wheelers. This material is classified by some men as solid rock, and by others as part solid rock and part loose rock.



Lacey R. Johnson, M.Can.Soc.C.E.,
Assistant Superintendent of Motive Power, C.P.R. Eastern Lines.

One specification for loose rock reads:—"Loose rock shall comprise all rock, which, in the opinion of the engineer, requires for its removal the use of steam shovel or pick and bar, without blasting, although blasting may be resorted to at the option of the contractors, and all detached masses of rock of more than one cubic foot, and less than 18 cubic feet."

Another one reads:—"Loose rock shall comprise all boulders or detached masses of rock, measuring more than one-fourth cubic foot and less than 18 cubic feet each; also indurated and cemented material, slate, shale, hardpan, soft and decomposed rock in ledges or masses, and boulder or gravel deposits or beds, which are so indurated or compactly united that, in the judgment of the engineer, such material cannot be plowed, as set forth under the specifications for earth, but which can, in the judgment of the engineer, be removed or loosened by a moderate use of explosives; but, if, in the judgment of the engineer, an unnecessary quantity of explosives is used, such fact shall not modify or influence his judgment in making the classification, or entitle the contractor to a higher classification."

All these specifications leave the classification entirely to the judgment of the engineer, and the result is that contractors, in bidding on work, bid more upon the reputation of the engineer in charge of the work than upon the specifications.

The material that the contractor actually receives loose rock classification for is any material that requires more than three teams on the plow, but which he does not have to blast. If it is too hard to plow it is blasted and classified as solid rock, or part solid rock and part loose rock.

All material that is not clsasified as solid rock or loose rock is called common excavation or earth excavation. Several specifications read:—"Common excavation shall comprise all other materials of whatever nature that do not come under the classification of solid rock or loose rock, or such other classification as may be established before the award of the contract."

Another one reads:—"Earth shall include any and all kinds of material which, in the judgment of the engineer, is not so compactly united or hardened as to prevent plowing or loosening with a 10-inch grading plow drawn by a well handled team of six good, strong, heavy horses or mules, with one strong, capable man at the plow handles and another one on the beam. It is understood and agreed that material shall not be classified other than earth because of its small quantity; or because of its position, or because rocks, stones, logs, roots or the presence of frost render plowing impracticable or inadvisable. Plowing is not intended to mean turning a furrow for any specified length; nor shall material be classified other than earth because plowing is not attempted or performed. Any material not clearly described as loose rock or solid rock shall be classified as earth." This last specification is entirely too rigid for earth. In many places cuts are composed of a mixture of clay and large boulders, so interwoven that the only practical way of removing the material is to blast it and then handle it as a solid rock cut. Although the earth may constitute as much as 25% of the whole mass, it must be handled exactly the same as the rock, and at the same cost, therefore it should be classified as solid rock.

In some places we find the rock in ledges separated by layers of earth. Under these circumstances the earth should be classified as solid rock. The classification should be made in accordance with the intent of the specifications, rather than with the exact wording. For instances, the specifications on a certain 50 miles of line, specified earth as sand, loam, clay, or a mixture of clay and boulders that measured one cubic foot in size, and that could be plowed

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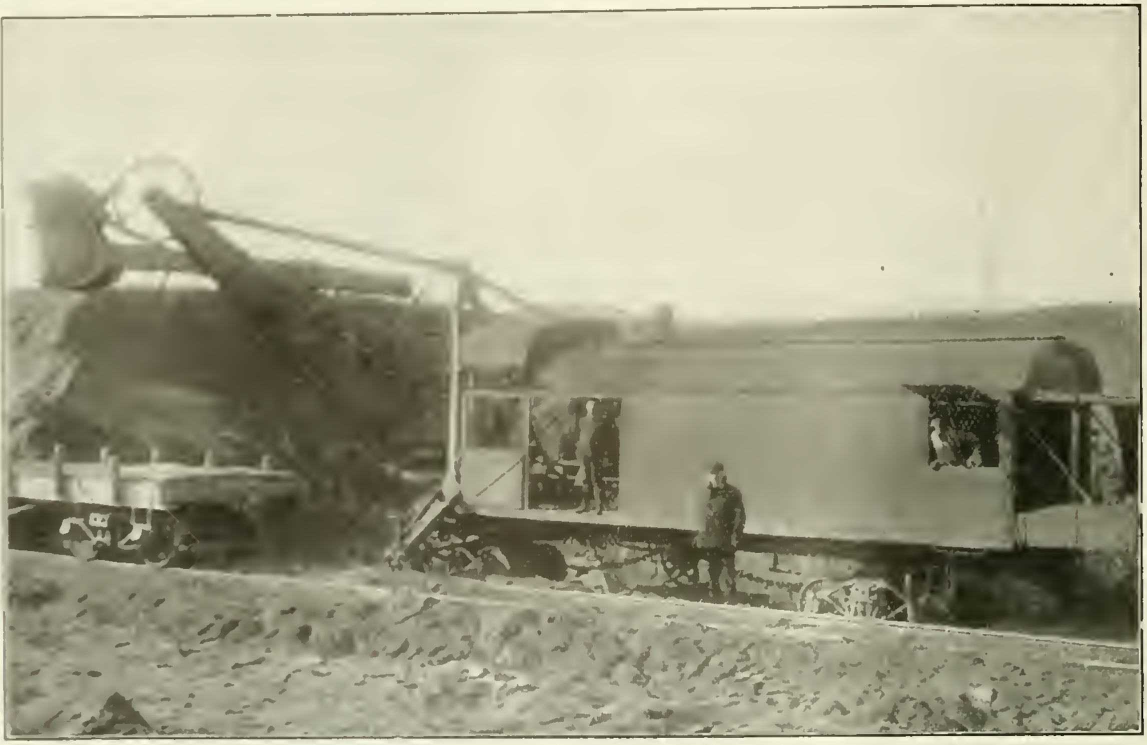

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Further economy in operation is secured by using a large boiler of the locomotive type, in which more of the heat is utilized and less is lost up the stack. This is possible only because of the removal of the hoisting engines from their usual position on the car body, to the boom.

The placing of the main hoisting engines at the foot of the boom reduces the power necessary for swinging the boom and removes the twist upon the car body when working on one side. With this construction the turntable centre and boom foot constitute the engine frame. One casting takes the place of four or more in the usual construction, reducing the total weight of the shovel, and the weight on the front trucks.

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with three teams. The contract was awarded at 14 cents per cubic yard. Fully 60% of the material was a mixture of clay and boulders which ranged from about two to eight inches in diameter. The most of the material was plowed with two teams and none of it required more than three. Although it plowed easily, it could not be moved to advantage with either slips or wheelers. Even after the chief engineer abandoned his specifications and classified it as loose rock, the contractor was dissatisfied, and sued the company for $50,000. After the suit had run in the courts for a couple of years, the company and the contractor agreed to arbitrate, and let the court render a decision in accordance with the findings of the board of arbitration. In the arbitration agreement was a clause specifying that the classification should be made in strict accordance with the contract and specifications. The arbitrators rode over the line on a flat car, at the rate of 25 miles an hour, only stopping to examine one cut. They then took all the maps, profiles and note books to St. Louis, and after three or four months awarded the contractor one-half the amount he was suing for.

Therefore, I do not think it advisable to try to use specifications that differ very materially from the specifications used by the other roads. Consequently I wish to recommend the following specifications:—"Earth or common excavation shall include any and all kinds of material which can be plowed with a 10-inch grading plow drawn by a well handled team of six heavy horses or mules, with one strong man at the plow handles; and which, after plowing, can be moved with slips or wheelers fully loaded. By plowing it is intended that one plow shall be able to loosen enough material to keep at least twelve scrapers running.

"Loose rock shall include any and all kinds of material which can be plowed with either a 10-inch grading plow or a rooter, drawn by more than six mules or horses, or that cannot be moved with scrapers or wheelers fully loaded; also all detached masses of rock or boulders measuring less than 18 cubic feet each.

"Solid rock shall include all detached masses of rock or boulders measuring 18 or more cubic feet each, as well as all material which must be blasted, and is as expensive to remove as solid lime stone, or solid sand stone, which is hard enough to be used in first class masonry work. Any material that requires blasting, and may then be removed with scrapers or wheelers shall be classified as 50% solid rock and 50% loose rock."

It would be better to let all contracts unclassified. By this method the contractor would be given a profile of the line and would be permitted to make as many borings as he desired to determine the nature of the material. His price per cubic yard would then be based upon his own classification. This method leaves no room for disputes between the contractor and the company. Where this plan has been adopted it has proven very satisfactory to both the company and the contractors. Owing to the sharp competition between contractors the work does not cost any more than by the old method.

[Prof. Dalton's suggestions are of considerable interest and will, we hope, evoke discussion. We will be glad to have any of our engineering, contracting, or other readers write us their opinions on his suggested classifications for earth excavation, loose rock and solid rock, and also as to his recommendation to let contracts unclassified.—Editor.]

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Work in connection with the geodetic survey of Canada has been started on the Pacific coast, the headquarters being at Victoria, B.C.

Canadian Specifications for Classification.

In connection with the foregoing article by Prof. Dalton, we have obtained the specifications of various Canadian railways from the chief engineers, and give the following extracts—

ALGOMA CENTRAL & HUDSON BAY RAILWAY.

Excavations will be classified under the following heads, namely, solid rock, loose rock and common excavation, under the following definitions:—

All stones or boulders found in excavation measuring more than 27 cubic feet, or one cubic yard in volume, and a solid quarry stone requiring drilling and blasting in order to remove it, will be classified as solid rock.

All rock commonly designated stones or boulders individually measuring in volume from one cubic foot to one cubic yard will be classified as loose rock.

All other material not classified as solid rock or loose rock will be classified as common excavation.

The price for said excavation in all the several classes thereof will be understood to cover and pay for the entire expense of removal of material excavated by any method whatever, including loading, unloading, transportation and deposition in the manner prescribed in these specifications, and in the location designated by the engineer, provided the average haul of the material so transported does not exceed 500 ft., and beyond that distance one cent per cubic yard per each additional 100 ft. will be allowed when such over-haul is ordered by the engineer.

A PROMINENT ENGINEER'S OPINION.

J. G. Sullivan, Assistant Chief Engineer, C.P.R. Western Lines, writes from Winnipeg:—

"I consider the information in connection with orders, etc., of the Board of Railway Commissioners which are published in the Railway and Marine World, are alone worth more than the subscription price."

No rock excavation will be allowed for beyond the limits of the base and slopes as specified. All rock loosened by explosives beyond the slope must be removed at the expense of the contractors, but if required to make up the embankment, will be paid for at the price for common excavation.

CANADIAN PACIFIC RAILWAY.

Grading will be classified under the following heads: solid rock, loose rock, hard pan and earth.

Solid rock will include rock in solid beds or masses in its original position, which cannot be removed without blasting, and boulders or detached rock measuring one cubic yard or over.

Loose rock will include all detached rock or boulders measuring more than one cubic foot and less than one cubic yard, and all shale, slate, soap stone, disintegrated granite, and other soft rocks, which can be removed without blasting, though blasting may be occasionally resorted to.

Hard pan will include cemented gravel, hard pan, indurated clay or combinations of the same whose hardness is such that if in a suitable location could not be plowed by an average four horse team.

Earth will include all other material such as loam, clay, sand, quick sand, gravel, muskeg, angular rock fragments, and small boulders.

Material borrowed for embankment will not be classified higher than loose rock, without prior written authority of the engineer.

Material in slips, slides and subsidences extending beyond slope lines will not be paid for, unless such occurrences were beyond the control of the contractor and not preventable by the use of due care and diligence.

The classification of material from slides will be in accordance with its condition at the time of removal regardless of prior condition. Measurements of overbreak in rock cuts will be the space originally occupied by material before the slide occurred, regardless of the classification of same.

Measurements will usually be made in excavation. In prairie or level country, where the embankments largely exceed the excavations, measurements will be made in embankments.

GRAND TRUNK PACIFIC RAILWAY.

Grading will commonly be classified under the following heads: solid rock excavation, loose rock, and common excavation.

Solid rock excavation will include all rock found in ledges or masses of more than one cubic yard, which in the judgment of the engineer, may be best removed by blasting.

All large stones and boulders measuring more than one cubic foot and less than one cubic yard, and all loose rock, whether in situ or otherwise, that may be removed by hand, pick or bar; all cemented gravel, indurated clay, and other materials, that cannot, in the judgment of the engineer, be plowed with a 10 in. grading plow, behind a team of six good horses, properly handled, and without the necessity of blasting—although blasting may be occasionally resorted to—shall be classified as loose rock.

Common excavation will include all other material of any character whatever, not classified as solid or loose rock.

Material in slips, slides and subsidences extending beyond slope in cuttings, will not be paid for, unless, in the opinion of the engineer, such occurrences were beyond the control of the contractor and not preventable by use of due care and diligence.

The classification of material from slides shall be made by the engineer, and will be in accordance with its condition at the time the slide is being removed, regardless of prior condition.

GRAND TRUNK RAILWAY.

All material excavated will be classified as solid rock, loose rock, common excavation, or such additional classifications of material as may be established before the award of the contract.

Solid rock shall comprise rock in solid beds or masses in its original position which may be best removed by blasting; also all detached masses of rock or boulders, each of which measures one cubic yard or over.

Loose rock shall comprise all detached masses of rock or boulders of more than one cubic foot and less than one cubic yard, and all other rock which can be properly removed by pick and bar without blasting; although steam shovel or blasting may be resorted to in order to facilitate the work.

Common excavation shall comprise all other materials of whatever nature that do not come under the classification of solid rock or loose rock, or such other special classifications as may be established before the award of the contract.

◆

D. C. Macdonald, Division Freight Agent, C.P.R., Regina, Sask., writes:—"I cannot afford to be without the Railway and Marine World."

A site has been purchased at Fort Francis, Ont., by Alexander Bruce and Co., upon which it is proposed to establish a plant for preserving railway ties. It is proposed to put up a plant capable of handling 1,000,000 ties a year.

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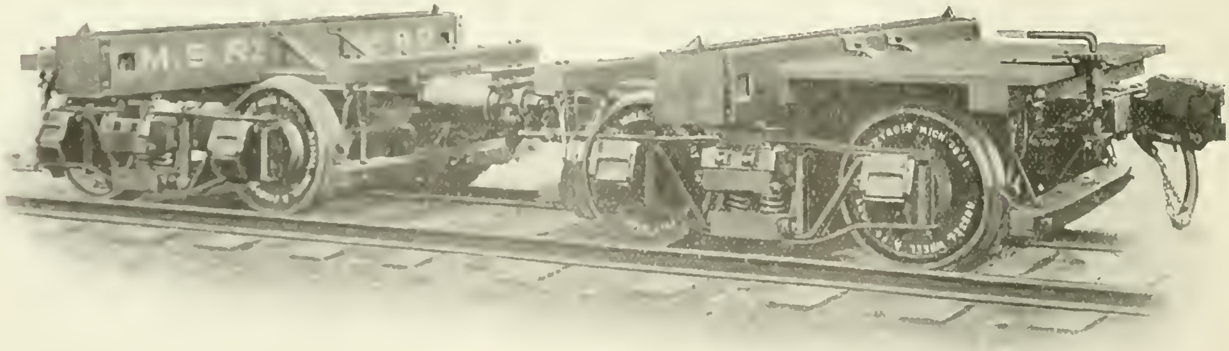

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Prevention and Cure of Hot Boxes and Economy of Proper and Efficient Oiling of Rolling Stock.

By J. Thos. Warde, Chief Clerk, General Car Foreman, C.P.R., Winnipeg.

The question of hot boxes is a serious one. The trouble is largely caused by the ignorance of the oilers, secondly, by the inferior brass used in the composition of the journal bearings, and, thirdly, by improper seating of journal bearings and wedges.

I will take up the question of the employe's ignorance. We take a laborer, as a general thing a "foreigner," (I do not say this in a discriminating way, as some of this element is among some of our best men), but what I want to point out is, that this man is taken simply because another man will not do the work unless he can possibly help it. The man selected is told to take his dope and as a rule his oil can. His instructions are simply to oil up. Follow the man around the train. What do you find? You find him forcing dope into a box already overcrowded, and you will also find him sloshing oil into a box already leaking on account of too much oil.

You cannot blame the man for this. The question is—Who is to blame? It is no use blaming the foreman. Probably the foreman knows no better than he does. The question arises—Find a remedy. The remedy consists in elevating the position, and in educating the man to fill it. But how? That is the question. My experience is that you cannot do this in a day. You have to get your man interested in his work, in place of the clock, and then you can teach him the why and the wherefore of oil economy and the prevention of hot boxes.

In the first place, teach him how to prepare the dope, and the average quantity of waste and oil required, which is on an average of about one gallon of oil to about 10 lbs. of waste. See that he has the proper receptacles for the making of it and storing it after it is made. My experience is that an average of a barrel of oil to about 100 lbs. of waste is required to soak it successfully, after which all can be drawn off less 10 gallons. My system was to have three tanks, one for steeping the waste in oil and one for draining. This was arrived at by having an engine stack netting drain board raised about one-third way up in the tank, and the next a storage tank which was covered. I steeped the waste in oil 24 hours, then drained it waste in oil 24 hours, then drained it 12 hours, and afterwards removed it to the storage tank for use. I found that I could as a general rule remove more dope than I put in boxes, but at this time there was no economy in saving the old waste, as all that could be done, was to pick out the cleanest and burn the rest, as we had no reclaiming plant at this time. What I found most successful at that time was to work up my dope in box, take out the surplus, if any, and work up well to cover the under part of the journal well back to the shoulder. This caused the oil to feed to journal, and certainly to a very large extent prevent a hot box. This is one question where the education of your oiler comes in.

The average amount of dope per box is 3½ lbs. Less is not sufficient, and more is too much for 30-ton cars.

Now for a system of systematic teaching. Get your tinsmith to make a standard journal box of heavy galvanized iron, having slide sides. Have a journal of hard wood turned and placed in box. Set your box in same position as it would be on the truck of a car, and have your man pack it with the ordinary dope and tools. Then carefully remove slide sides and replace by glass. You can then see how your box has been packed, carefully remove your wood journal model, and then you have it practically demonstrated how your box is packed.

The next question is—the material your journal bearing is composed of. As I am not a chemist I cannot explain the composition and the virtues of the various metals used in compiling the metals for a journal bearing, but my experience is that inferior metals have been and are used in their manufacture. You cannot blame your man for hot boxes, if at the same time you know you have an inferior brass composition for your journal bearings.

Then there is the question of unequal bearing of journal bearings and wedges. If any of the members will take the trouble and gauge these with the M.C.B. gauge they will readily see what I mean, and will find something perhaps to blame hot boxes for, both on passenger and freight cars, as you will find a large percentage of your bearings and also of your wedges that are unequal. I might say, though perhaps it is not altogether according to the rules, that I have many times fitted to journals old brasses, and have got good results from their use. In fact, when I was in the practical work, I always had on hand a half-round file, ground down for the purpose, and preferred using an old bearing to the placing of a new one. In road work I have many times treated hot boxes in this way, after the train men have set them out on account of running hot. My experience is that a box well packed and with everything favorable will make a trip of from 8,000 to 10,000 miles. As an instance I cite the following:—I cleaned out the boxes on a sleeping car, I think it was about 1895 or 1896, at Winnipeg, put back the old brasses and wedges and fresh cleaned dope (I might say that I was told this car would not go to Rat Portage on account of it not being flooded with oil) prepared as heretofore stated. I wired and sealed boxes, attaching a tag "Unless box is hot do not open." Car came back from Montreal O.K., went west to Vancouver, came back to Winnipeg with one box seal broken and on the tag was written "Hot box at Medicine Hat caused by broken wedge." The date was given, showing that box was opened on its outward trip west and brass changed. Had a new brass applied. Box was hot and caused delay again at Calgary. Brass was again changed. Brass was sent to Winnipeg and heating found to have been caused by unequal bearing. I opened the other boxes, on advice of our General Car Foreman, and they were found to be in a first class condition and could have run the trip over again. Still, what is feasible on passenger cars is not always to be arranged with freight cars. Take our ballast pits, for instance. With our old style of A 3 journal boxes and covers, it was almost an impossibility to keep these covers on. They would open and allow dirt and dust to gather, and cut journals were numerous. The material question of course crops up, even at a ballast pit, and I was sometimes up against it, especially for waste. When this happened I resorted to a trick. I washed pebbles out of the gravel and placed a very generous supply in the box and then put in waste. I found this scheme to work well, and I have no doubt it was o.k. for short trips.

The prevalence of hot boxes is no doubt due to several and various causes, but chiefly among these is the general ignorance of our average oilers. The quality of oil cannot be blamed, as the oil at present used cannot be compared to the old black oil we were using at that time as a lubricant. Neither can the general construction of the boxes and covers, as but few of the old style S.E. boxes and A 3 boxes are in evidence, but there is the car capacity and weight. It is reasonable to suggest it may be partly blameable, but it is provided for by the increase of the journal bearing to overcome the extra weight due to the demand for cars of larger capacity. Therefore if our bearings are uniform and our bearings of a mixture suitable to resist heat and hard, heavy service and wear, the question is answered by saying that the fault lies either in unequal bearings or in the ignorance of our oilers.

Before I close I want to say something of our system at the C.P.R. Winnipeg shops reclaiming plant, which consists of three tanks for the reclaiming of oil. Two of these are 3 ft. by 4¾ ft. by 9 ft. long, made of ¼ plate with wood covers, having hinged doors, and are placed end for end. No. 1 tank has a 2 inch angle riveted to side, inside, about 6 inches up at end next to no. 2 tank. A strainer made of smoke stack netting is placed on this angle for the distance of 2 ft., forming a clear chamber. This chamber is fitted with pipe ¾ in., having a fine wire mesh over its entrance. This pipe is connected with a man pump having a 2 inch barrel, by which means the oil is transferred to tank no. 2. These two tanks are raised about 6 ins. off the ground or floor. Beneath tank no. 1 are about 150 ft. of 1¼ in. steam pipe supplied with live steam. No. 2 tank is of the same capacity as no. 1, the difference being that the entire length is covered by smoke stack netting placed upon the angle iron. This tank is also fitted with piping beneath, but in addition, is also equipped with 50 ft. of 1¼ in. piping at the upper part of back. This is also fitted with a hand pump to remove the reclaimed oil from the waste. Also have a tank 2 ft. by 1½ ft. by 6 ft. for sorting dope. The old dope is placed in tank 1 and steam turned on to raise the temperature to about 100 degrees. This loosens up the dope. After a few hours it is forked over, and is then placed in the sorting tank and sorted over. The waste is then placed in tank no. 2, and subjected to a temperature of 90 to 120 degrees of heat. After being in this tank for a few hours it is forked over again and is then ready for use.

The oil drained from no. 1 tank is pumped over the dope in no. 2 tank, and the oil that gathers beneath the wire screen in no. 2 tank is pumped out of tank into barrels for use.

The waste that is of no value is placed in an air pressure cylinder subject to 80 lbs. pressure. The reclaimed oil ran into tank 2 and then it is ready for use. At stated intervals the tanks are cleaned out and all dirt removed out of the tanks and burned.

The average amount of oil reclaimed runs from 3,500 to 4,000 gallons a month. The average amount of waste reclaimed is from 450 lbs. to 500 lbs. a month, this being all prepared dope and ready for use.

It shows a net saving in oil of $95 to $100, and for dope about $50 to $60, or a saving of $150 per month.

This has been more than doubled during the past year, and the general saving at Winnipeg shops now is from $150 to $300 a month, according to the season, but $150 is the minimum.

The foregoing paper was read before the Western Canada Railway Club.

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R. I. Bodkin, General Claims Agents Department, C.P.R., Winnipeg, in remitting a renewal subscription, writes:—"The Railway and Marine World is of much value and of great interest to me. Kindly keep sending it to the same address as above."

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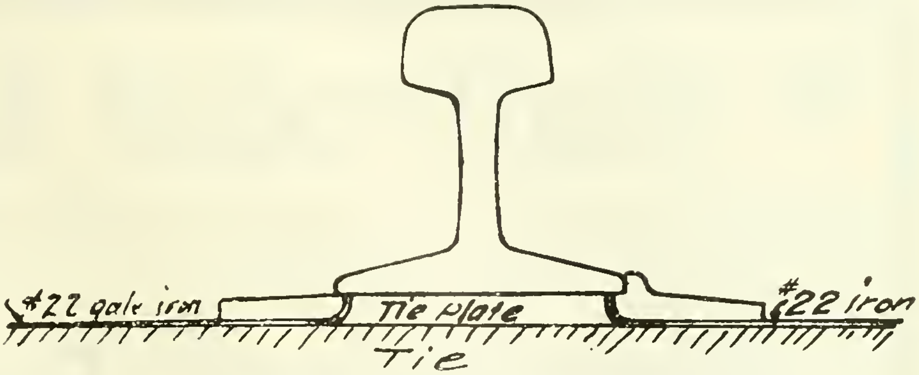
Fireproof Deck for Timber Trestles.

The Board of Railway Commissioners some time since exempted the Great Northern Ry. lines in Canada from having to comply with the order respecting the protection of timber trestles, etc., from danger of catching fire from sparks and cinders falling from locomotives. The reason for this exemption lies in the fact that the G. N. R. has, since 1908, been using a standard fire-proof deck for timber bridges on all its lines, both in the U.S. and in Canada; galvanized iron being the protective material employed. It is claimed that this plan eliminates the objectionable features ot a gravel deck protection formerly in use, while retaining all its advantages. The gravel deck protection was found to be unsuitable on account of the rotting of the ties and stringers, and because of the continual shaking out of the gravel, thus exposing the ties. It was also found, where bridges are on a curve, that the gravel worked down towards the lowest side. This condition was partially overcome by placing longitudinal strips at close enough intervals, so that the gravel could be levelled up without exposing ties. The gravel deck bridge was finally abandoned and the present galvanized iron protection adopted, with very satisfactory results.

The standard plan for fixing this fireproof deck shows that 22 gauge galvanized iron is used, the sheets being 6 ft. long by 28 in. wide for the space between the rails, and 30 in. wide on the outside of the rails. The sheets between the rails overlapp at the centre, and those outside are bent up against the guard rail, the lap and bent-up edge being made to suit. The sheets are matched to fit closely around tie plates and nailed to ties with 8-penny barbed car nails, 9 guage, each nail being provided with an 18 guage washer, ¼ in. hole, under head. Lining spikes are driven through the galvanized iron. On lines where electric signals are used, and have to be carried across timber bridges, the galvanized sheets, instead of being overlapped in the centre of the track, are bent up, onto a triangular strip of wood, which serves as insulation between the two rails. Eight sheets of each width cover 23 lineal feet of bridge, and 14 nails and washers are required for each lineal foot of bridge.

For the foregoing information and the accompanying plans on this page and pg. 713, we are indebted to A. H. Hogeland, Chief Engineer, G.N.R.



Great Northern Ry. Fireproof Deck for Timber Trestles. Sketch.

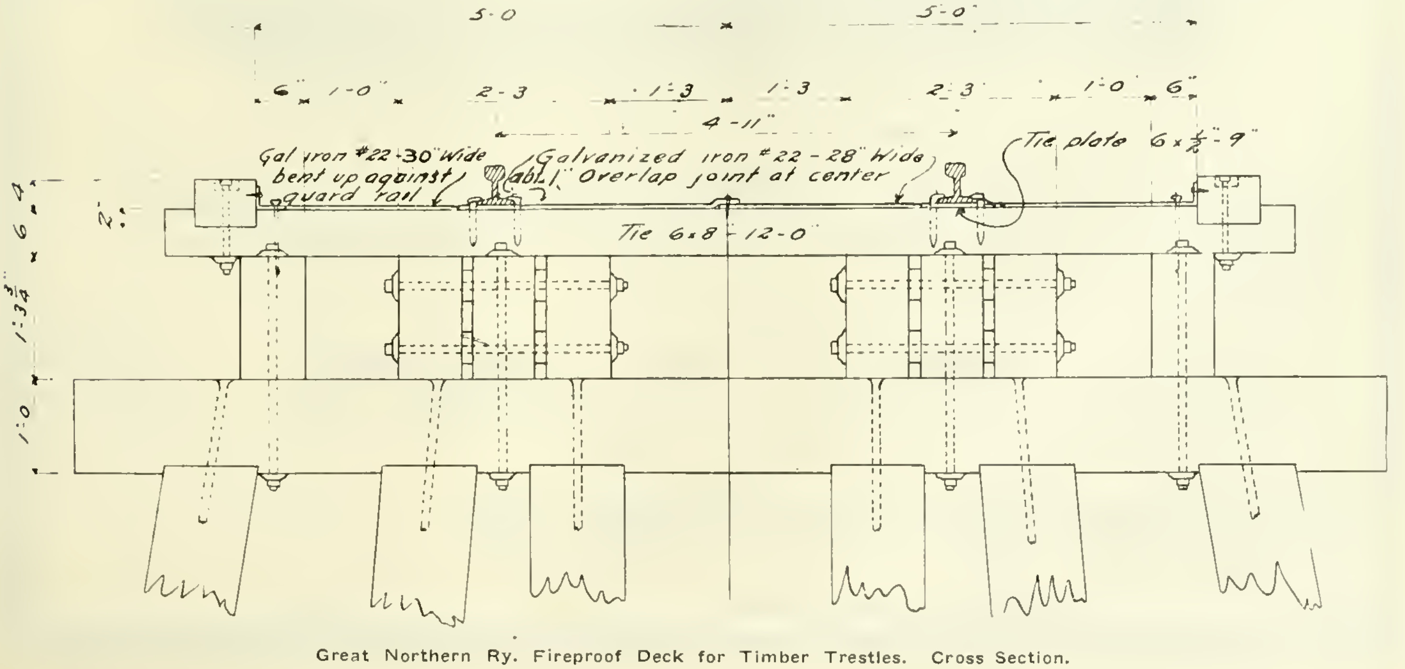
Transition Curves.

In the very interesting communication on this subject from J. Leslie, Roadmaster, National Transcontinental Ry., in our last issue, a line of type was misplaced in the lower portion of the second column, making it read incorrectly. We repeat the portion of the letter correctly as follows:—

I once knew an experienced foreman who had charge of a big yard, together with two miles of section, and on the section was a 3° curve. He surfaced and lined his curve as well as he knew how, and when it was completed he felt much elated, thinking it was the best piece of track on the system. To make sure that it was all it appeared to be, he went down the line to the first station and boarded a passenger train for the purpose of satisfying himself that the curve in question was all right. The train when reaching this curve had attained a high rate of speed, the descending grade being in its favor. He discovered, to his great surprise, that the curve in a couple of spots was not anything like the track he thought it was. Judging from the way it rode he thought the defective spots must be very conspicuous or easily detected, but when making an effort at improvement he could not detect the spots which were so very pronounced when riding on the train at a high speed. Now, in this case the defect was certainly in the alignment, and yet his experienced eye could not detect the slight variation. If he had tried the 62 ft. cord it would have pointed out the invisible spots, but this was in the days long before lining with a cord was thought of. Section foremen as a rule take great pains with their surfacing and lining, and what appears to them to be good track may be full of little imperfections. Their knowledge in general of how a train rides over their newly surfaced and lined track is very limited. Even a roadmaster might be deceived in this way, but his position gives him the advantage in knowing where the defective spot is located, and just what is wrong with it.

◆

The American Association of Demurrage Officers spent two days at Niagara Falls recently, in consideration of changes necessary in the Uniform Code of Demurrage Rules. The changes recommended are all in the direction of making the meaning of the present code clearer. A committee has been appointed to present the suggested changes to the American Railway Association, in time to be acted upon at the fall meeting of the latter organization, which is to be held in November. The changes affect principally the free time to be allowed on cars held for re-shipment and on cars held under bond, subject to Customs regulations. The Association will also ask for some modifications of the claim rule, under which allowances are made for weather interference and for the bunching of cars in transit resulting in their delivery at destination in accumulated numbers.



5-0
5-0
6"
1-0"
2-3
1-3
1-3
2-3
1-0
6"
4-11"
Gal iron #22-30" wide bent up against guard rail
Galvanized iron #22-28" wide abt. 1" Overlap joint at center
Tie plate 6×½"-9"
Tie 6×8-12-0"
2"
6-4
1-3¾
1-0

Great Northern Ry. Fireproof Deck for Timber Trestles. Cross Section.

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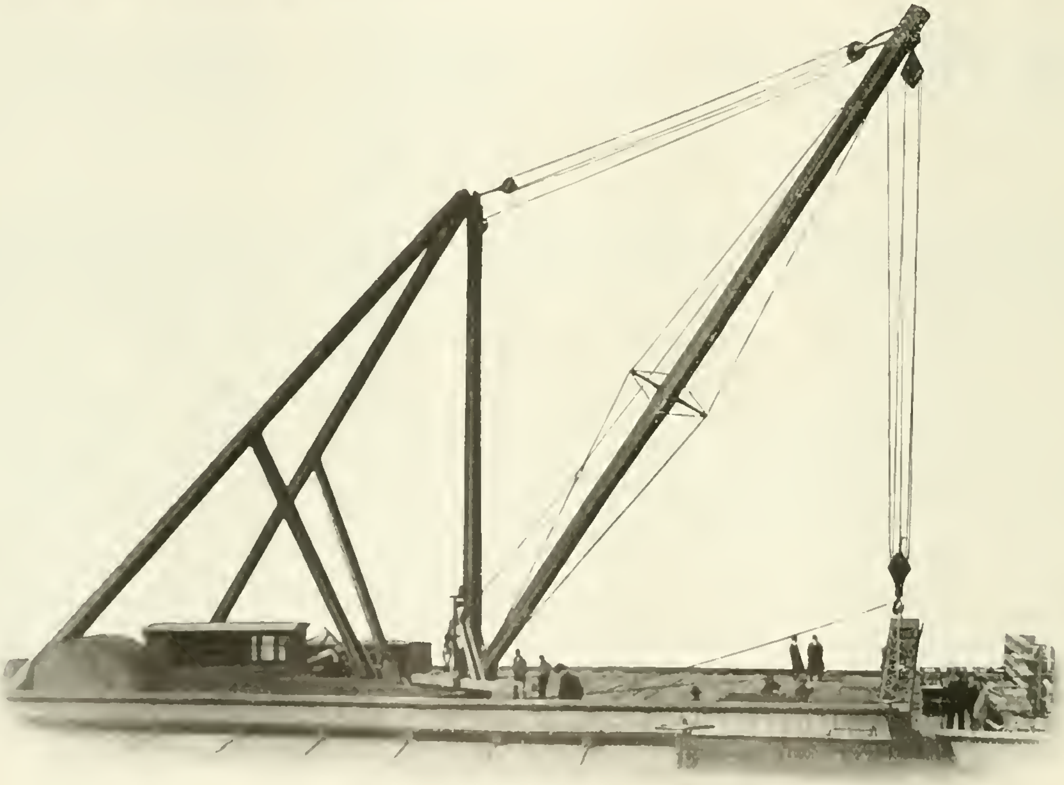

The above is a 15 ton "American" Wooden Stiff Leg Derrick operated by an "American" Electric Hoist with slewing gear, for transferring material at the dock of the Canadian Pacific Ry., Vancouver, B.C.

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R.M. 7/11

Flange Lubrication on C. P. R. Western Lines.

The American Railway Master Mechanics' Association committee's report on flange lubrication published in our last issue, contained several references to the practice on the C.P.R. Western Lines. In response to our request, Grant Hall, Superintendent of Motive Power & Car Department, Winnipeg, has favored us with a copy of his replies to the circular sent out by the committee, which are summarized as follows, in some instances the question being given as well as the answer:—

We have flange wear on locomotive driver and truck wheels, tender truck wheels and steel passenger car and freight car wheels.

We have in service standard, Pacific, consolidated, and ten-wheel locomotives. The consolidated show the greatest wear.

The number of miles our locomotives give between driving wheel turnings for flange wear depends upon the nature of the district upon which they are operated. This is taken care of by shifting the tires around on wheel centre, which prolongs their life and usually wears them down on tread, so that grooving is necessary before turning for sharp flange.

When a locomotive is stopped on account of sharp flanges, how long is it out of service? We avoid shopping for sharp flanges as above.

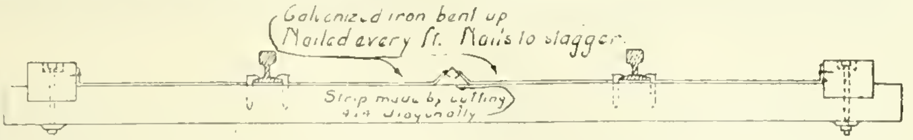
The loss per day on a locomotive shopped on account of sharp flanges depends upon the cost of the locomotive and its earning power.

The labor charge for changing tires on different types of locomotives is $2 per tire, which shifts them from one wheel centre to another.

The labor charge for turning tires for different types of locomotives,* that is the simple operation of turning off a pair of tires in the machine, is 75c.

The metal loss due to turning for vice from the different types of locomotives depends upon the wear of the flange. To build up some of the worn flanges would take half an inch.

If this metal did not have to be removed to form new flanges how many more miles would you get in actual service from the different type of locomotives?



G.N.R. Fireproof Deck. Cross Section of Ties when Electric Signals are used.

We figure on getting from 12,000 to 15,000 miles per 1-32 inch wear on the tire.

I do not believe that excessive flange wear has a tendency to cause hub wear.

How much lateral do you give your different types of locomotives? We give them ⅜ inch lateral.

If a uniform lateral could be maintained, due to the prevention of flange wear, it would be a saving to our locomotive machinery.

We have ten degree curves on our lines. The grades run up to 5%; a considerable portion of the mileage is 2.2%.

We have applied a number of flange lubricating devices to prevent flange wear but up to date (Feb. 16, 1911) have found nothing of material benefit. We have tried hard grease lubricators, also syphoning ordinary engine oil from a receptacle on the flange, but these have proved ineffective.

The flange lubricators are located on bracket on frame adjacent to wheel. They are blind feed depending upon the external flow for judging the feed.

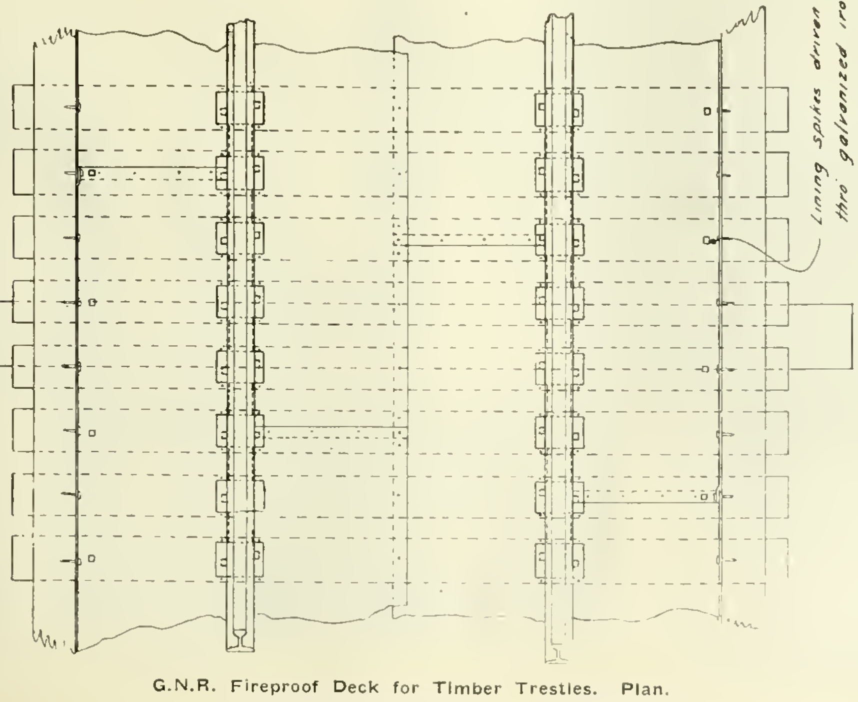
The flange lubricators deliver the oil to the flanges by gravity, flow feeding on shoe, which engages with flange. They do not deliver the oil to the flanges by means of a steam jet or air pipe feed from pipe or nozzle located near the flange.

We use no other method for delivering lubricant to flanges.

None of the flange lubricators we have in service are arranged so that the feed will be uniform in cold or freezing weather. In cold weather the oil becomes thick and will not feed, on account of the temperature.

We have applied flange lubricators to Pacific, consolidated and ten-wheel locomotives. They are as yet in the experimental stage. They are applied to the leading wheels.

Grease and engine oil have been tried without success. The lubricator we are going to try will feed fuel oil.



G.N.R. Fireproof Deck for Timber Trestles. Plan.

After applying the flange lubricators did your locomotives ride easier around curves, and did it prevent locomotives climbing the rails and getting off the track? It is to be expected that the lubricated flange will ride curves easier.

Since applying flange lubrication there is no noticeable difference in the locomotives hauling more tonnage or handling regular trains easier on curves.

I think a benefit would be derived in many ways from the use of flange lubricators.

We have not applied flange lubricators to new tires, removing the lubricator after tread has become worn, so as to depend upon shoulder worn on tread to protect flange.

What depth of tread wear is necessary to prevent flanges from being cut by rail? I consider that if you are going to get flange wear in a certain district you will get it from the start, and do not think there would be much advantage in having an engine track and wear evenly on the tread on a tangent and then expect that this would keep it away from the flanges if transferred on to a curvy section.

◆

Poles used in Canada in 1910.

The Forestry Branch of the Department of the Interior has compiled statistics dealing with the poles purchased in Canada during 1910. The total number purchased was 782,841, an increase of 118% over 1909. The total value of these poles at point of purchase was $1,043,874, and the average price was $1.33, or less by 6 cents than the price per pole in 1909. Steam railways, telephone and telegraph companies used 95% of these poles, the remaining 5% being used by electric railways, power and light companies; 97% of the total consumption were cedar poles, which for their cost give better service than any other wood. At present none of these poles are treated or preserved by any method, in which respect Canada is far behind the United States, the latter country using in 1909, 3,738,740 poles at an average cost of $1.89, or at 50 cents more per pole than in Canada. It was found that it paid to use preservative methods. During the last three years the treatment of poles has advanced rapidly in the United States, so that in 1909 15% of the total number were treated by creosote or other methods. This is an increase of 67% over the number treated in 1908. At present the U.S has 87 pole treating plants, while Canada has none. It is to be hoped that this great inequality will soon be done away with, and that pole users in Canada may take up this cheap and rational method of securing greater service from the poles used and thus lessening the drain on the forest.

◆

Canadian Car Service Bureau.—At the annual meeting in Montreal July 13 the following representatives of member companies were elected representatives on the executive board:—Chairman, M. Magiff, Superintendent of Telegraph & Car Accountant, Central Vermont Ry.; G. S Cantlie, General Superintendent Car Service, C.P.R.; F. Price, Superintendent Car Service, G.T.R.; G. W. Wilson, Car Accountant, Toronto, Hamilton & Buffalo Ry.; W. S. Moy, Car Accountant, Quebec Central Ry. J. E. Duval is Manager of the Bureau.

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Recent Advances in Machine Tool Construction.

By Colonel Alexander Bertram.

In this paper it is the author's intention to speak more particularly of the early history of machine tool building as it has come under his personal observation, from his schooldays until the present time.

In 1861 there was in operation in the town of Dundas, Ont., a small jobbing shop conducted by Robert McKechnie, a young patternmaker, who graduated from the Dundas foundry of John Gartshore, and who had struck out for himself in a small way, to carve out an existence in the then growing Province of Ontario. In 1862 he was joined by a young Scotchman in the person of John Bertram, who had received a thorough training as a machinist, and these two founded the Canada Tool Works, or what is now known as The John Bertram & Sons Co., and started as builders of wood machinery, at the same time doing a jobbing trade with the local mills and factories. During 1863 the late John Bertram designed and built in that small shop what was perhaps the first engine lathe ever made in Canada, and from that date the designing and building of machine tools has been continuously carried on at the same place, but, of course, in much better fitted shops than the first small wooden building of those days. This first and somewhat primitive lathe had a swing of 12 in. over the shears, and, with a 6 ft. bed, weighed about 600 lbs. The difficulties under which the lathe was built were greater because of the fact that the small shops had nothing in the way of means of planing the bed. This difficulty, however, was overcome at the Gartshore Foundry, where, also, the leadscrew was cut. The planer in use in that shop was a Scotch-built machine, and, of course, had a table of sufficient length to plane this bed without a shift. This lathe was finished in about six months, and a large portion of the small turning was finished by hand tool turning, as at that time there were few self-acting lathes, and certainly none in this shop. All the gears had cast teeth made from wood patterns, and even the change gears for screw-cutting had cast teeth moulded up in the same manner. The castings for this lathe were made in the Gurney Foundry, Hamilton. From this small beginning the partners of that business were encouraged to develop their business, and others also embarked in the same line, with more or less success. John Bertram was a mechanic of advanced ideas, and was never satisfied unless the development of his designs and the organization of his shop were ever on the advance. He at once adopted standards for shop use, in the way of Whitworth standard threads for taps and dies, and also inaugurated male and female, or what are now known as plug and ring gauges, for sizing the bore of wheels and pulleys, and for the turning of shafts. He also saw the necessity of cutting gears, and finally designed and built a gear-cutter. This machine was of the most simple form, consisting of a bracket bolted to the shop wall, carrying a mandril and a dividing plate. A man was trained to feed the cutter slide up and down. During the operation he very often made a slip and spoiled the gear. In those early days Brown & Sharpe cutters were developed, and from that time until the present day B. & S. cutters have been in constant use there for gear-cutting. All key-ways at that time were cut by hand, and it was remarkable how well this was done, and the time taken for small keys was not as far away from the present-day methods, when setting up and preparing a machine to do the work is considered. To duplicate the key-ways in change gears for screw-cutting, a broaching tool was used. After the keyway was roughed by hand, the broach was driven through, thus producing a standard finish, which served the purpose.

His next step was to design a milling machine (fig. 1) for cutting keyseats in shafts. All the movements were by hand, and the machine and its cutters are herewith shown. Since this date, in the early sixties, many changes have taken place toward improving the turning lathe. Then it was considered satisfactory to furnish a 24 in. lathe with a flat shear bed, having single ribs connecting the ways together, a headstock having a four-step cone, with a 2½ in. belt and a gear ratio of about 5 to 1. The spindle front bearing, 1¾ inches diameter, running in cast-iron bearings, all the gearing having cast teeth; a carriage or saddle with no power cross-feed, and a front apron fitted with running gears of the most simple type; a leadscrew nut of babbit metal and tailstock fitted between the flat ways. Yet this was the condition under which the present high-speed machine was developed, and probably I am safe in stating that a greater improvement has been made in iron turning lathes than in any other machine tools in the large group of iron-working machinery. In order to fully illustrate the changes, we shall show three designs of standard iron-turning lathes.

Fig. 2 shows the type of lathe built by this firm until 1885. This lathe is better known to the trade as the flat shear-engine lathe—that is to say, the top of the ways of the bed are a flat surface. The carriage or saddle carrying the tool block is gibbed at both front and rear to the ways of the bed, on which it has its bearing. These ways were planed to an angle of 55 degrees. This lathe swings 24 ins. in diameter, and it will be clearly seen how limited the cone and gear power was as compared with the powerful high-speed machine of the present day. Mr. Bertram having had his early training among Scotch and English machine tools, the designs followed were naturally more of that type.

In the early seventies two types of lathe head construction were freely discussed among mechanics in Canada. The one favored largely by English practice, and termed the conical or solid bearings, appealed to many by reason of its easy adjustment for wear. One element, however, seemed to have been overlooked, and that was the expansion and contraction of the spindle with varying temperatures. This difficulty soon decided the fate of the conical bearings as at that time constructed, for although some English makers hardened and ground both the spindle and bearing, this could not remedy its seizing qualities, and, therefore, the present parallel front and back bearing in lathe head construction has been adopted by nearly all builders.

Fig. 3 illustrates a standard engine

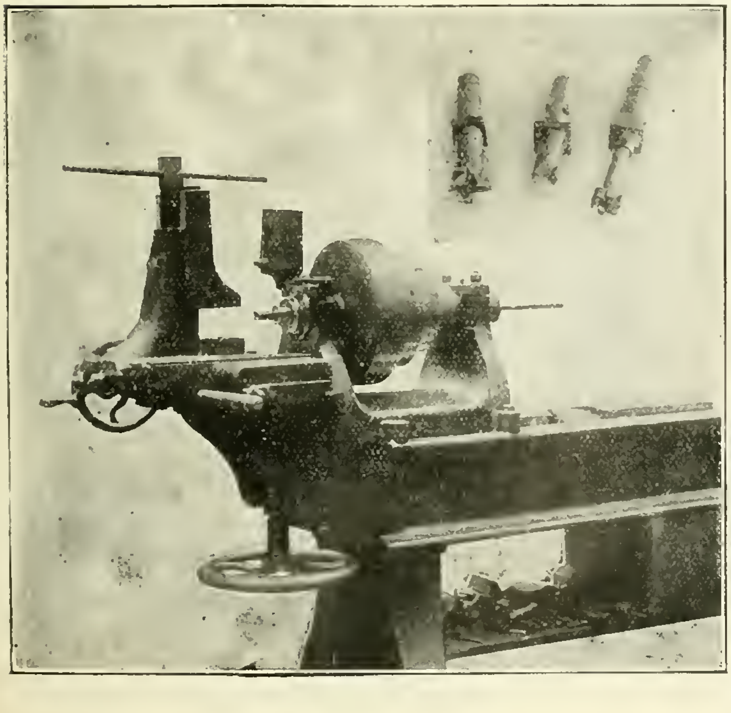

Fig. 1. Milling Machine.

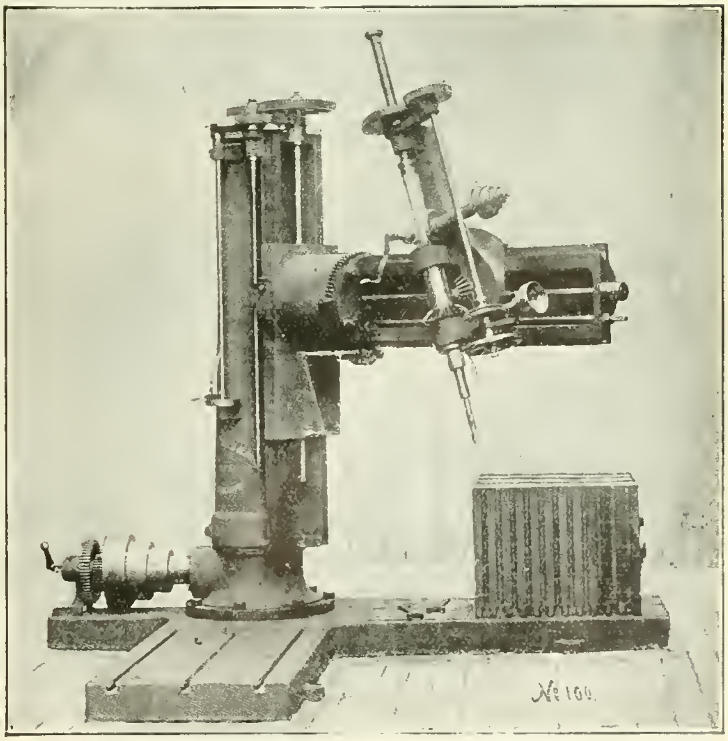

Fig. 24. Old Full Universal Radial Drill.

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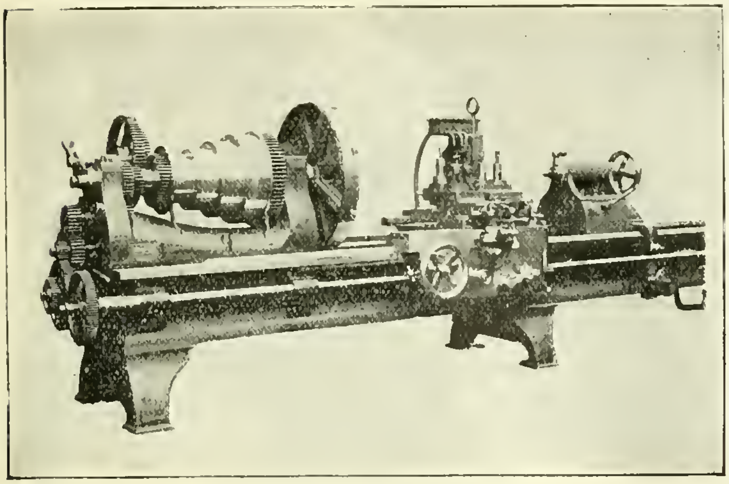

Fig. 3. Standard Engine Lathe.

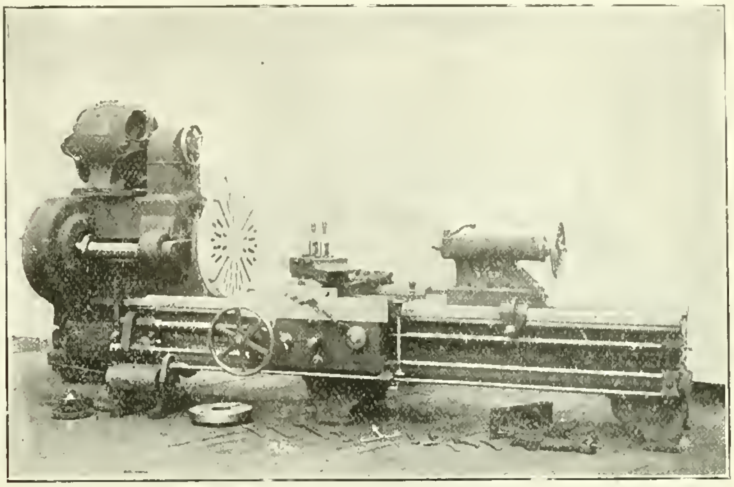

Fig. 4. Motor Driven Lathe.

lathe as manufactured by one of the United States builders. In this design it will be noted that the saddle and tailstock have separate bearings on inverted V's. This construction is favored for lathes of small size, but many leading United States builders favor a flat bearing for the tailstock, which, when provided with proper adjustment for maintaining its alignment, is much more easily kept clear of cuttings.

Fig. 4 illustrates one size of motor-driven lathe as built by the Bertram Co. today. In order to economize in the manufacture of this machine, the construction is such that any stock machines may be converted from belt to motor, or vice versa, as required, and for that reason it is termed the convertible type. The gear and cone ratio is such as to permit of the use of standard motors of variable speed, as made by all the electric companies, and when so arranged with motor drive attached to the running gear, the lathe head loses all semblance to that of the original machine, but it is fast superseding the cone-driven lathe in many of the leading machine shops. This is particularly so in the sizes running from a 30 in. swing and up.

There are many strong arguments favoring the motor-driven lathe. Several of the minor advantages may be noticed. First, the use of the motor does away with the overhead line-shaft and its maintenance. From the fact that belting and the line-shaft have been done away with, the machine may be placed to greater advantage in a shop, and in this way space may be economized. The range of speeds which are obtained by the variable speed motor through the drum type controllers enables the operator to arrange the cutting speeds to suit the material being machined. This arrangement of speeds is made possible by the fact that the operator, by moving the handle shown at the right-hand of the carriage, instantly controls the spindle speeds. This, of course, is a decided advantage over changing the belt on the steps of the cone-driven lathe. Again, in this, as in all motor-driven machines, the cutting speeds and feeds are very much increased, as the power delivered at the cut by the motor is from 50 to 100% greater than the power obtainable in a belt-driven machine, and the absence of belt pull on the cone gives a greater degree of accuracy to the work produced from the same lathe. In consequence, with the use of high-speed cutting steel, the output of the motor-driven lathe has been increased from 30 to 50%. It may be remarked that the tremendous increase in power in the running head has necessitated the re-designing of the lathe, making all the parts throughout proportionately heavier than the same sized lathe of ten years ago.

Fig. 5 shows another form of motor-driven lathe known as the "all-geared" type, driven by constant-speed motor or single pulley drive by countershaft. In this machine all changes of speed are effected by clutches, and no changes of belt, as on a cone, are necessary. For lathes of very large size this construction will commend itself to the user, although there are arguments against the number of gears made necessary to give the desired changes. On all large lathes of this type, separate motor for quick traverse of the saddle along the bed is provided. Movement of the tailstock by the same means gives greater efficiency or quicker adjustment of the tools to the cut.

The foregoing covers in a general way the advance in construction of the engine lathe. Another type of lathe which in recent years has received considerable attention, namely, those for locomotive and coach wheel turning, will now be considered. Fig. 6 shows this machine as originally designed by the Pond Tool Company, of Plainfield, N.J. As first built it was belt driven, having about 9 horse power, and a capacity of from 4 to 6 pairs of wheels per day of 10 hours. The special features of this machine are:

1. The central drive. It is known as the worm drive. The power is transmitted direct from the cone shaft, or as the machine is built today, from the motor, to a worm and a worm wheel, which is mounted on the end of the driving shaft. The end of this main driving shaft is a worm which in turn engages a large worm wheel in the centre of the machine. Both worms

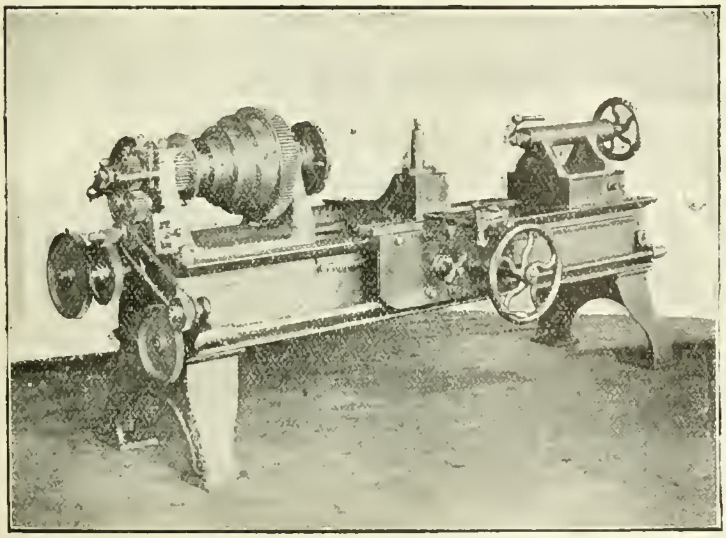

Fig. 2. Flat Shear Engine Lathe.

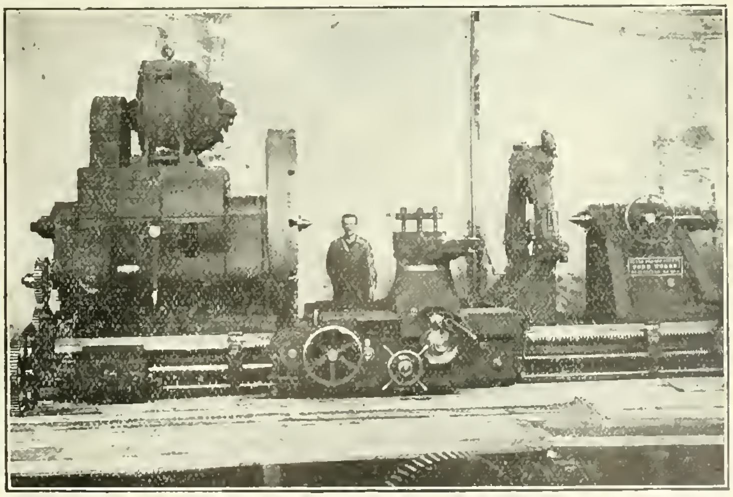

Fig. 5. All Geared Motor Driven Lathe.

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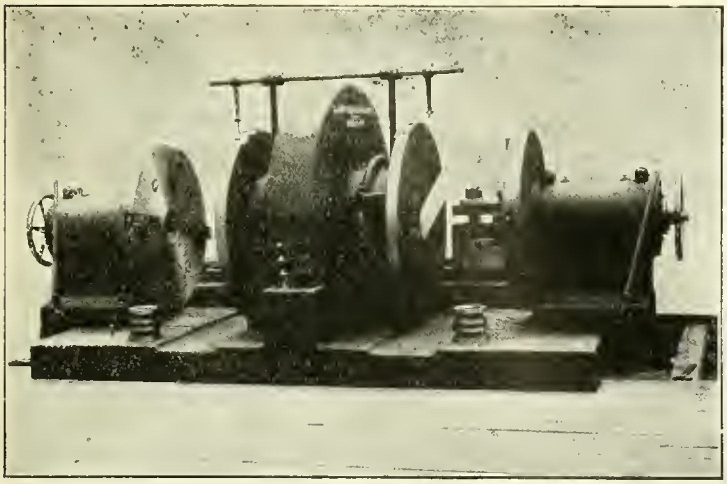

Fig. 6. Locomotive and Coach Wheel Turning Lathe.

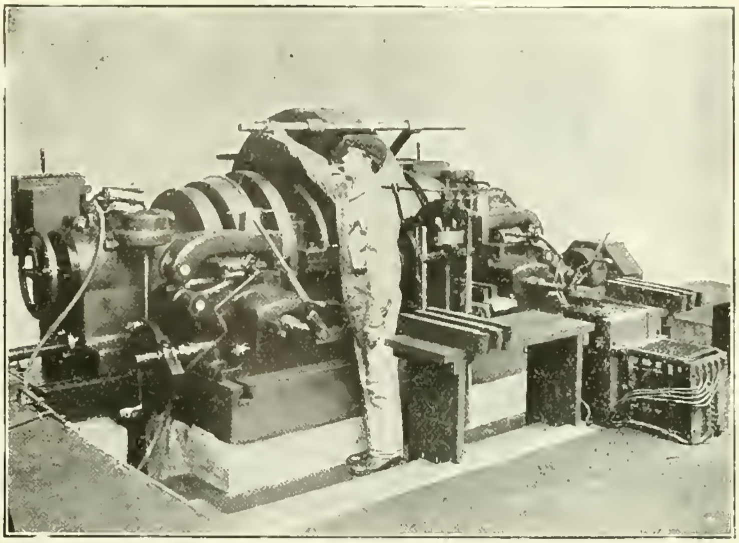

Fig. 7. Locomotive and Coach Wheel Turning Lathe.

and wheels run in oil tight cases, which ensures perfect lubrication. In this way the power reaches the machine midway between the wheels, and, in addition to securing uniform power, the central drive makes it possible to support the wheels on both sides. This is accomplished by means of self-centreing chucks, which grasp, or grip the axle journals, and chuck jaws engage the tires.

2. The compound rests, which carry the cutting tools, are mounted on the bed, and are held by four bolts in T-slots—in this way any springing tendency is prevented, and in consequence the heaviest cuts can be carried.

Fig. 7 shows the machine as built today by the John Bertram Co. The machine has undergone radical changes, these having been brought about by the introduction of high speed steel and the use, for driving power, of an electric motor directly attached. As already stated, the original machine was capable of turning from four to six pairs of tires per day, but upon the inthereby increased to 20 horse power, troduction of the motor, the power was and the output increased from six to eight pairs of wheels per day, with one man as operator, and one man as helper to roll the wheels in and out of the machine. For a number of years this was considered a standard day's work, but soon the energetic shop managers of the leading railway companies increased the horse power to 30, with the result that the output was increased to from 10 to 12 pairs of wheels per day, this necessitating an additional helper to roll the wheels in and out of the machine. Not content with this, however, the power was further increased to from 35 to 40 horse power, the output thereupon averaging 14 pairs of wheels per day, with two operators and two helpers. This undoubtedly demonstrated the possibilities of the machine, but it also demonstrated to the manufacturers the fact that labor-saving devices must be added, since the output had reached the limit of human endurance.

The latest achievement is clearly illustrated by fig. 8. It consists of a new design of tool block clamping device for holding the tool, and being operated by compressed air, facilitates the work of the operator. Power is also applied for both moving and clamping the heads on the bed.

In fig. 9 there is illustrated the segment in the central driving gear, which opens, closes, and locks automatically as the wheels are rolled in and out, this requiring no attention whatever from the operator. These labour-saving devices have so perfected this machine that the output has steadily increased, until, under a recent test, 33 pairs of wheels were turned in nine hours and thirty-three minutes.

The wheel lathe specially designed for turning the tires of locomotive driving wheels as used up to a few years ago, is illustrated in fig. 10. Those familiar with the modern machine will readily see that the construction is light in all its parts, particularly in the head and face plates. The power is limited, owing to the narrow belt by which the machine was driven, and the output was consequently limited to 1½ to 2 pairs of wheels per day. The top of the bed was a flat surface, and in consequence the pedestal carrying the tool blocks had to be of sufficient height to carry the tools to the centre. Owing to their length in a lathe of 80 ins., this was an extremely weak feature, as it was scarcely practicable to make them of sufficient size and strength to pre-

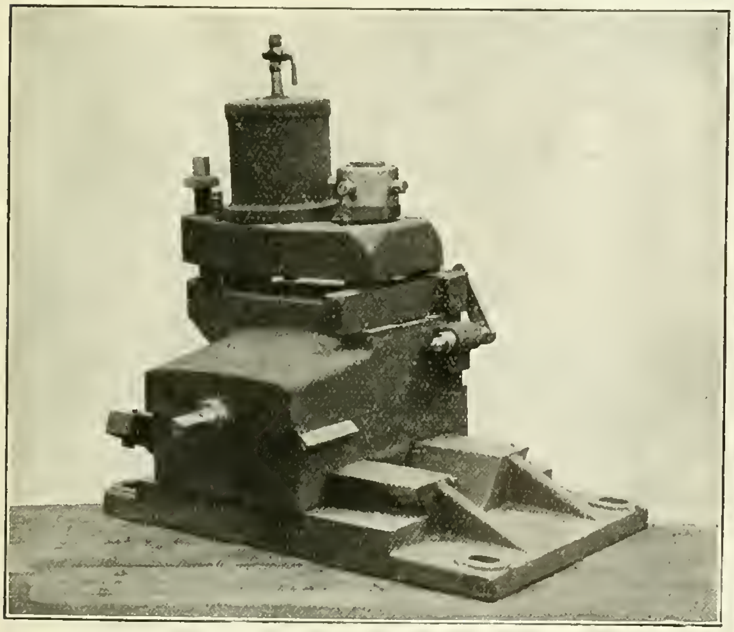

Fig. 8. Tool Block Clamping Device.

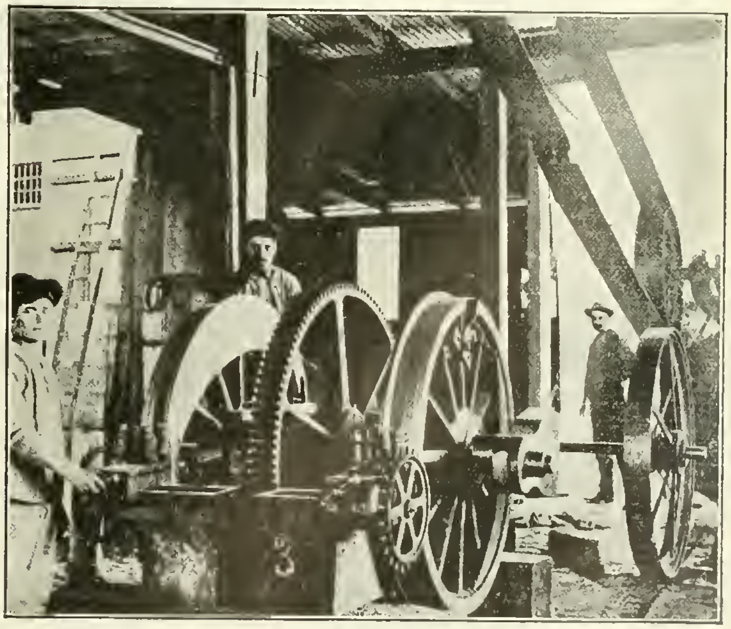

Fig. 14. Wheel Lathe on Mexican Railway.

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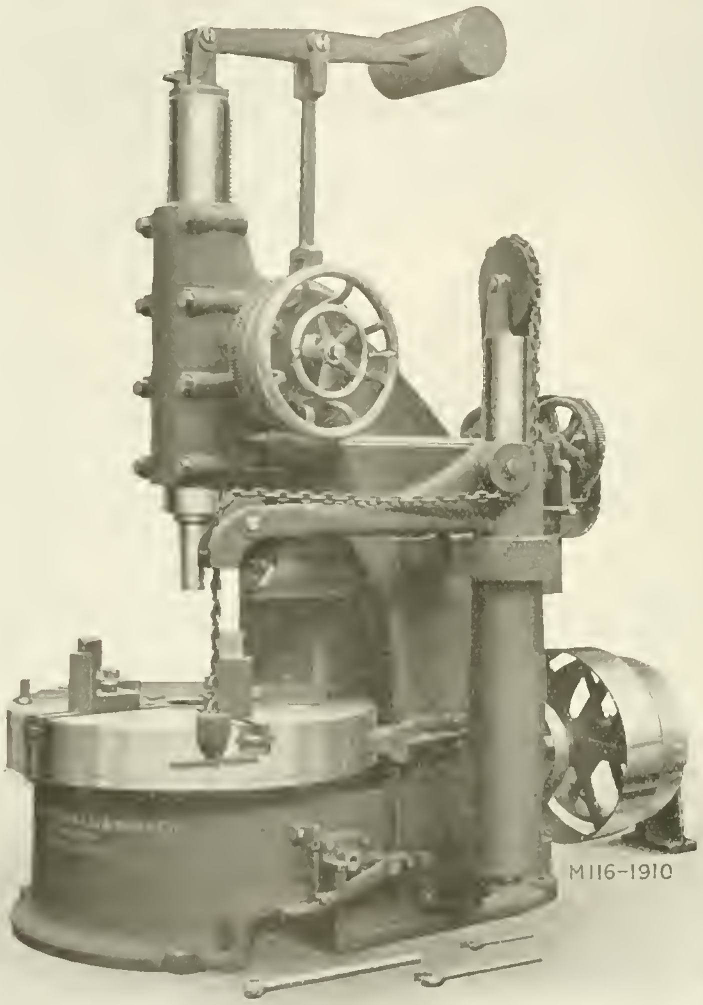
CAR WHEEL BORING MACHINES



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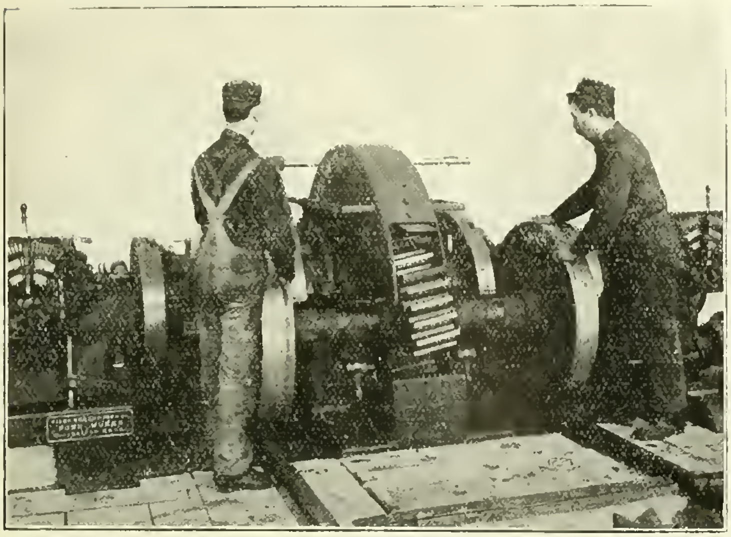

Fig. 9. Showing Segment in Central Driving Gear.

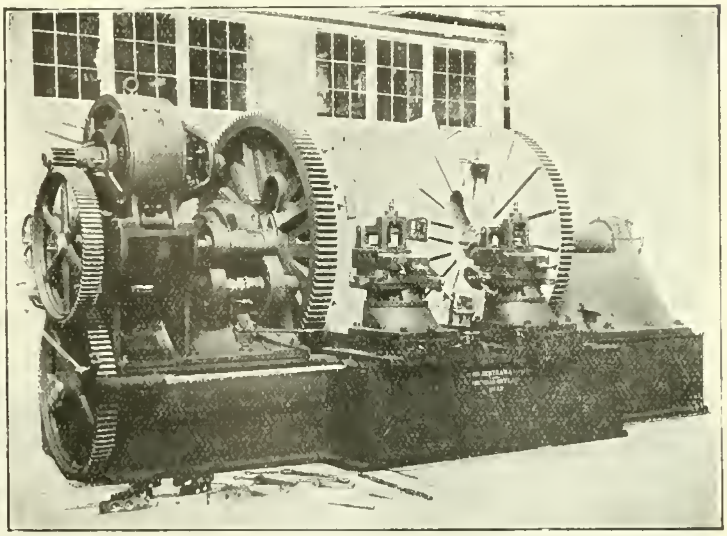

Fig. 11. Modern Driving Wheel Lathe.

vent springing. This, together with the weakness of the driving plates and the primitive method of holding and driving the wheels, accounts very largely for the small output obtained.

The modern 90 in. driving wheel lathe is illustrated in fig. 11. The machine has been designed throughout with a view to obtaining the greatest rigidity at the point where the greatest strain is imposed; this elevation also permits of the use of very short and stiff tool posts. The back web of the bed, not being subject to so great strain, is low; this facilitates the handling of wheels in and out. The tool blocks are equipped with a tool-holder, which renders easier the setting of the cutting tools. The operator is thus relieved of opening and closing four nuts each time the tools are set. The feeds are positive, being operated by connecting rods attached directly to the tool block feed shaft. The head is equipped with a 50 h.p. motor; the power is transmitted through a train of gears and a 7 in. shaft to the internal gears on the face plates. As the internal gears form wide flanges on the face plates, the plates are given great rigidity, and by the use of improved drivers, fig. 12, which hold the wheels perfectly rigid, the heaviest cuts can be carried with little or no vibration. In order to fully realize the improvement in the machine, it need only be stated that while the output of the old machine was from 1½ to 2 pairs of wheels per day, the average output is now 6 pairs of wheels per day, while, under special test, 10 pairs of driving wheels were turned in 9 hours 6 minutes. Fig. 13 shows a cut taken in the above test.

Fig. 14 illustrates a curiosity in wheel lathes from a photograph taken from a lathe in use on a branch railway in Mexico. The bed consists of square timbers, a main gear in halves, which is clamped to the axle at its centre, while the wheels and axle run in their own journal. Claim is made that a pair of wheels were turned in one week, which would scarcely fill the requirements of our large Canadian roads.

The subject of lathes should not be dismissed without a word on the boring and turning mill, another form of lathe construction, so arranged as to permit of the easy chucking of articles to the face-plate. This machine has also been brought to the stage of quick adjustment of rail heads and bars, all the surplus power and energy of the man being developed to increase the number of hours actually at the cutting point of the tool. Fig. 15 shows a standard boring mill, as built by the Bertram Co. for the Canadian market.

Fig. 16 shows a Bertram tire boring mill for coach wheel tires up to 42 in. diameter. The construction is especially for heavy duty.

Few machines which have to do with the production of the modern locomotive have undergone such changes in size, weight, and power as the frame slotting machine. This is due to the increased size and weight of the locomotive of today, as compared with that of a few years ago. This, of course, causes a corresponding increase in the size of the frame to be slotted. Fig. 17 shows the slotting machine, as built by the Bertram Co. until about 1898. The opening in the yoke was 34 in. wide and 12 in. high, and the bed had a length of 36 ft. The machine was capable of slotting one pair of forged frames in 60 hours.

Fig. 18 illustrates the standard three-headed slotting machine, as in use in the Canadian Pacific and other railway shops. The opening in the yoke is 48 ins. wide and 26 ins. high, and the length of the bed is 40 ft., giving the machine sufficient capacity to slot four of the largest sizes locomotives frames in from 32 to 34 hours.

In Fig. 19 is illustrated the largest type of triple head frame slotting machine which is known. It was installed in the Montreal Locomotive Works about three years ago, the dimensions of the machine being—opening in the yoke 61 by 34 ins., and the bed is 50 ft. long, maximum stroke of cutter bars 32 ins. The machine is capable of slotting six locomotive frames simultaneously, and has the power and rigidity necessary to do the work at the minimum cost under modern manufacturing conditions.

In common with most of the other large machine tools, the method of drive in the slotter has been changed and improved by the introduction of the motor. As will be seen in this plate, each head is driven by a 20 h.p. motor, from which the cutting bars are driven through powerful friction clutches, which permits the operators to have convenient control of the bars at all times. This improved method of drive has superseded the long shaft, which ran the entire length of the bed in the older machines, communicating the power to the cutting bars through a system of clutches. These facts will show that the slotting machine of today has three times the

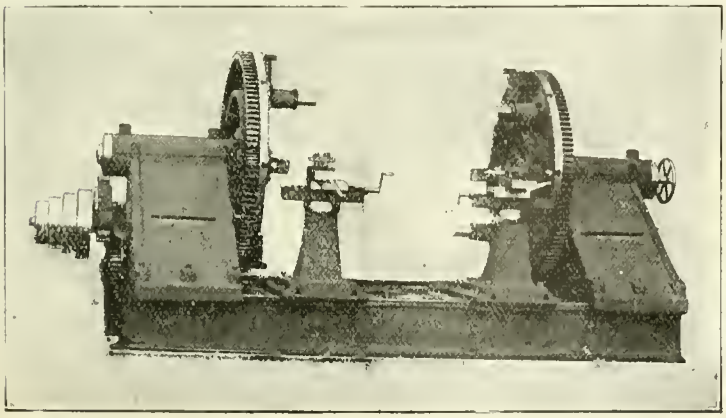

Fig. 10. Old Wheel Lathe.

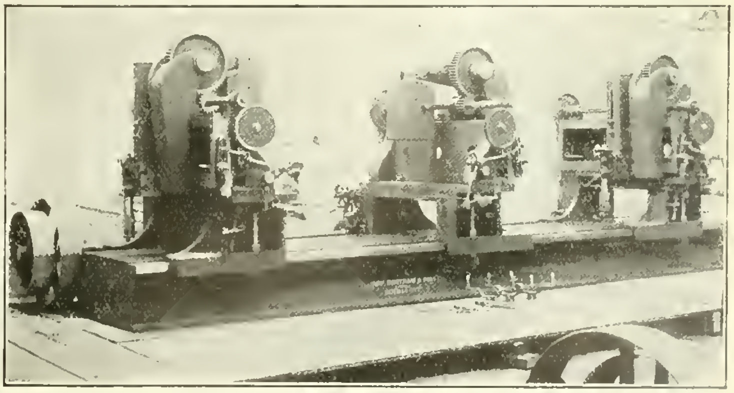

Fig. 17. Old Slotting Machine.

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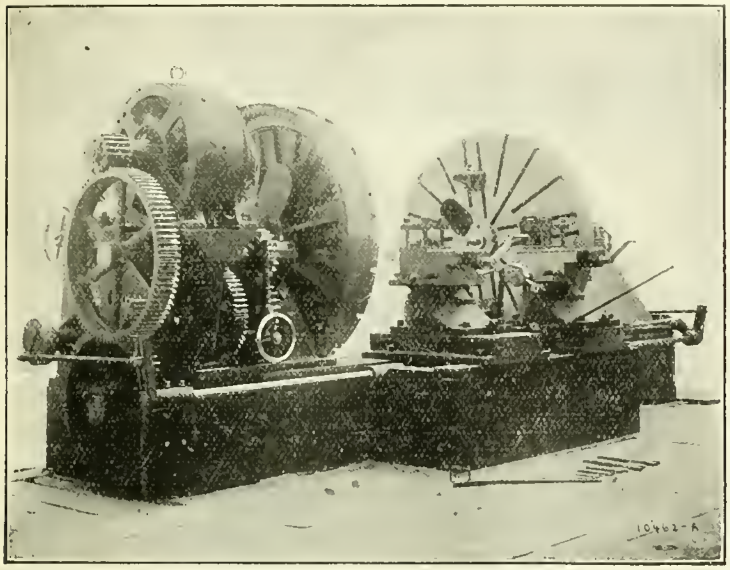

Fig. 12. Modern Driving Wheel Lathe.

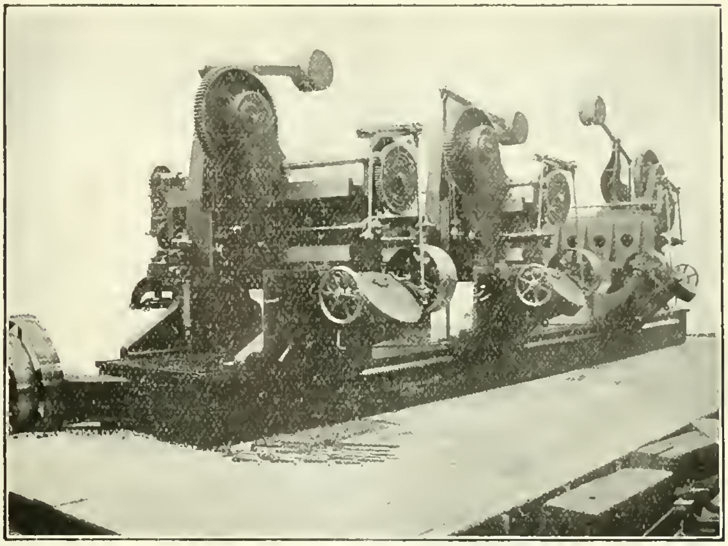

Fig. 18. Three headed Slotting Machine.

capacity of the machine manufactured a few years ago. In consequence a very great saving has been effected in the cost of slotting frames, for, as has been shown, in the earliest machine it required 60 hours to slot one pair of frames, the machine as next improved slotted four frames in 32 hours, while the latest improved machine averages six frames in 40 hours.

In passing rather hurriedly through an outline of machine tool improvements, a few words should be said on the subject of the drilling machine. In common with nearly all classes of machinery the drilling machine has of late years received its share of attention. The following plates will serve to illustrate the development of this type of machine tool, and render unnecessary an explanation of the improvements in detail.

Fig. 20 shows the first ratchet and drill brace used in the shops some 40 years ago. Fig. 21 is a very old illustration of a drill built in the United States. Fig. 22 illustrates a vertical drill, built in the Bertram Works about 1869. Fig. 23 illustrates the latest Bertram vertical drill. Fig. 24 shows a full universal radial drill. The first machine built from this pattern was exhibited at the Centennial Exposition at Philadelphia in 1876. Fig. 25 represents the latest production in full universal radial drills.

Time will not permit the discussion of the present-day drilling records, or to compare them with those of early days. Many articles on high speed drilling have appeared from time to time in engineering publications, and the wide variations in results obtained might be an interesting point for discussion at a subsequent meeting. Some of those present might then be able to give valuable information regarding personal experiences.

This paper should not be concluded without giving some attention to one of the most important machines, namely, the iron planer, and in doing so it should not be necessary to go into its past history further than to state that since 1694 little was accomplished in its development until early in 1800. As stated in the introductory remarks, there was a machine of this type in the Gartshore Foundry in 1863. This machine had a cutting speed of about 10 ft. per minute. The gearing was made with cast teeth, and the rack had a double section having the teeth staggered to give a smooth and uniform motion to the table.

Fig. 26 illustrates one of the first machines built in the Bertram Works in 1867. The power is delivered to the table by a single 3 in. belt running at a velocity of 512 ft. per minute, with a gear ratio of 6.25. giving an effective pull on the table of 3750 lbs. and a cutting speed of table 20 ft. per minute.

Fig. 27 represents a 36 in. planer, driven by two 3 in. belts, one of them being used as a forward or cutting belt, and the other for the reverse motion. A belt velocity of 1,000 ft. per minute and a gear ratio of 13.4 to 1 delivers an effective pull on the table of 8180 lbs., at a cutting speed of 20 ft. per minute.

From the above some idea is given of the gradual development of iron planers. In recent years modern shop construction demanded economy in space and a more convenient shop layout. This led to the adoption of an individual drive made possible by the improvements in electrical machinery, and for the past eight or ten years the usual plan of mounting the motor on top of the planer housing has been followed. This plan is more or less faulty, due to a liability of the machine producing defective work by reason of the natural vibration caused by the motor being placed in that position. To obviate this danger the use of pneumatic clutches was introduced, and a motor drive placed at the base of the housings.

Fig. 28 represents a motor drive mounted upon the housings of the machine, power being transmitted by four belts, two for cutting and two for reverse. This drive was developed to give increased belt pull without excessive belt shifting velocity. The increased pull wide single belt for both forward and reverse motions would demand double the shifting speed to obtain as prompt and uniform a return of table as the original narrow belt required. This increase of shifting speed was practically impossible, hence the introduction of the four-belt drive. With two narrow belts for each motion the required increased pull is obtained, and

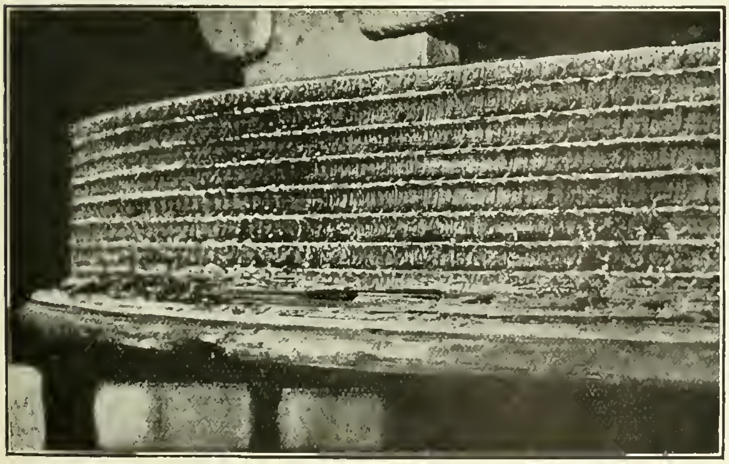

Fig. 13. Taken during test of turning driving wheels.

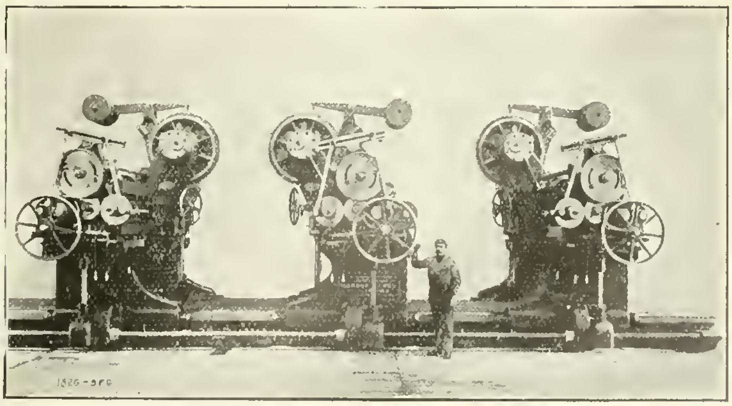

Fig. 19. Triple Head Frame Slotting Machine.

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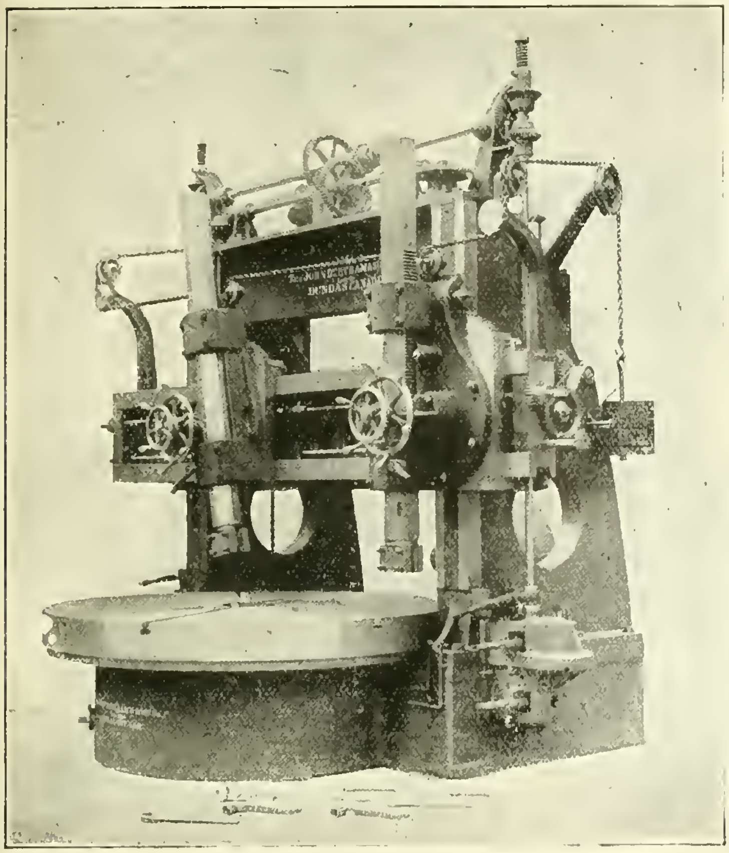

Fig. 15. Standard Boring Mill.

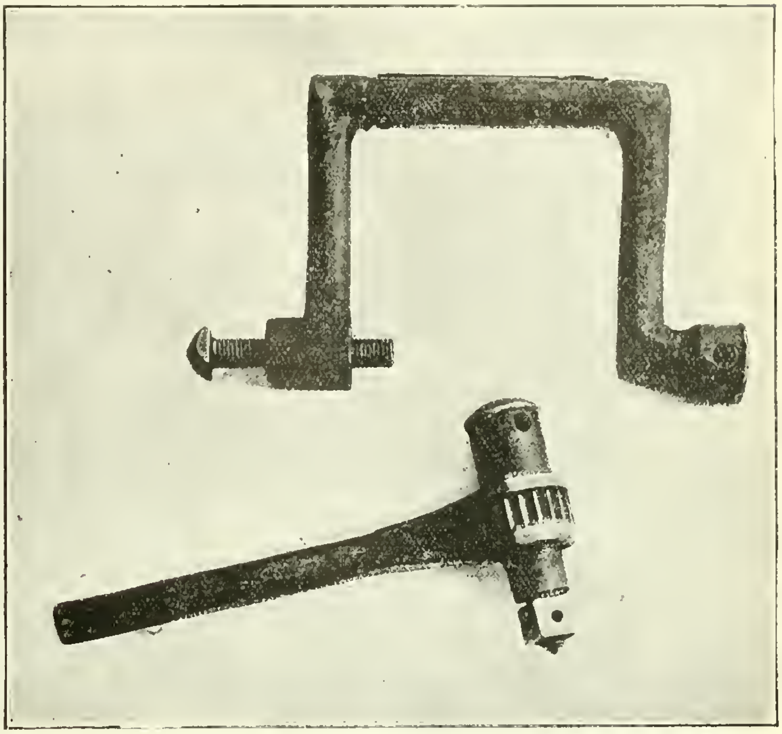

Fig. 20. Old Ratchet and Drill Brace.

the same facility of shifting remains as in the old two-belt drive without any increase in shifting velocity. In this construction by a gear ratio of 8.8 to 1, a belt velocity of 1,330 ft. per minute, an effective pull on the table of 10,000 lbs. is obtained at a cutting speed of 36 ft. per minute, at the same time maintaining a comparatively low belt speed and the use of a 5 in. belt for the cut and return.

We now reach the most modern drive applied to iron planers, and the following is quoted from a circular issued by the Niles-Bement-Pond Co., of Plainfield, N.J., where the improvements were designed and carried out. Fig. 29 represents the machine in question.

"In the Pond reversing motor planer is offered an entirely new method of driving and reversing at variable speeds. This system is the result of years of experimenting in this line, and has proven itself absolutely reliable under the most severe and adverse working conditions. It overcomes all the undesirable features of belt and gear-box drives, and does away with clutches, either pneumatic or magnetic, and all shifting belts. The reversing drive essentially consists of one motor, which acts as a generator at the instant of reversal. This result is accomplished automatically by a patent controller. On the controller are mounted two index scales or dials—one controls the range of cutting speeds and the other the return speeds. Each scale is provided with 13 graduations or divisions, by means of which an equivalent number of different motor speeds are obtainable by simply sliding the thumb piece on the scale. There are no dashpots in the system.

"The cutting speeds obtainable on the standard type of planers vary from 25 to 40 ft. per minute, and the return speeds from 60 to 100 ft. However, these speeds can be changed to suit individual requirements. The cutting and return speeds are entirely independent of each other, so that it is possible to use the slowest cutting speed and the highest return speed, or vice versa. The table is reversed by adjustable dogs,

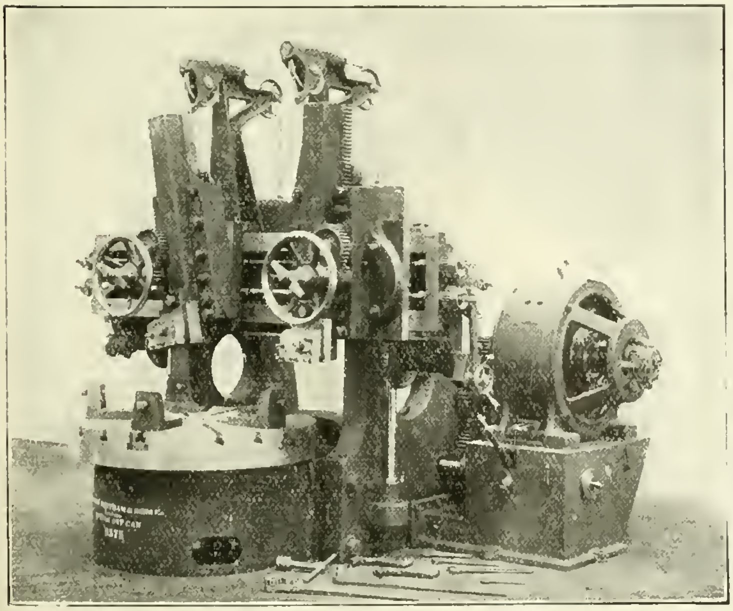

Fig. 16. Boring Mill for Coach Wheel Tires.

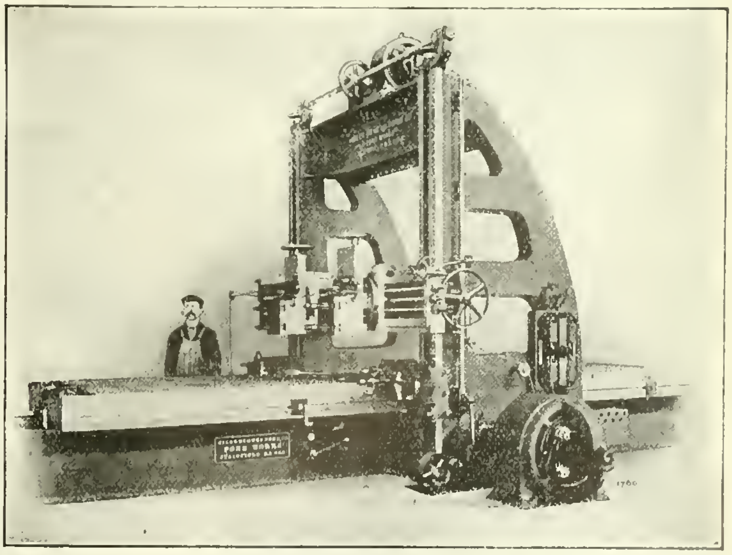

Fig. 29. Modern Drive applied to Iron Planer.

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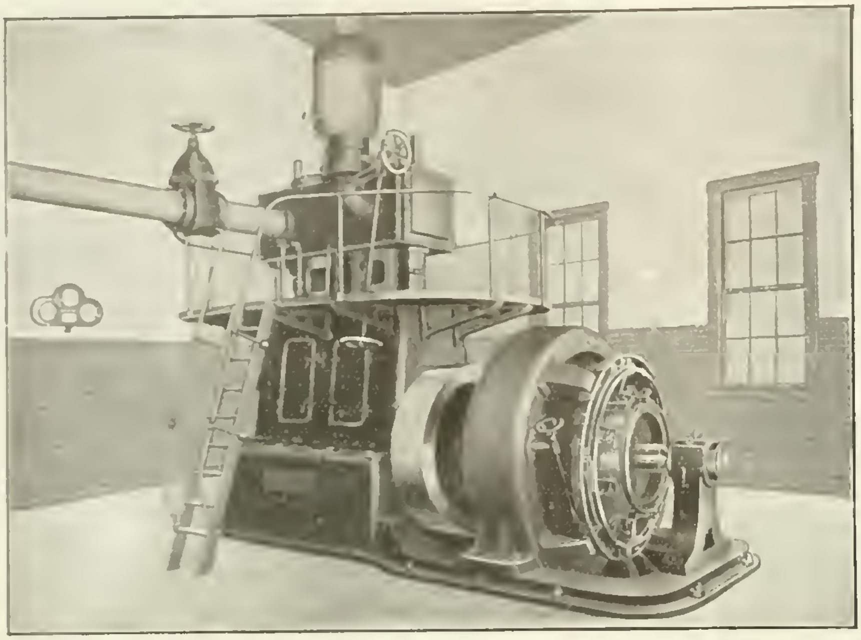

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which throw the controller into the dynamic position. the current which is generated at this instant bringing the motor to a stop. The motor, being directly across the main circuit, has at all times full field strength to brake on, regardless of the speed at which it is running. These conditions account for the quick action of the planer at the instant of reversal, as well as for the perfect electrical action of the motor, there being absolutely no sparking or other electrical strain.

"At the instant of reversal, in which the motor is being brought to a stop, the controller automatically reverses the main circuit to motor, which gives the reverse direction of rotation. The dynamic feature of the controller is absolutely dependent upon speed of the motor, and automatically takes care of the various speeds of rotation. At the end of the stroke a table dog throws over the pilot switch. This is the only mechanical motion in the entire drive. The pilot switch is entirely enclosed, and is placed in the same position on the bed as the mechanical lever of an ordinary belt-driven machine. The pilot switch operates with such ease that it is not necessary to use a wrench to secure the reversing dogs, the latter being quickly adjusted to any desired stroke by means of hand clamps.

"The kinetic energy stored in the work, planer table, armature, and other moving parts of the machine is absorbed by the braking action of the operating torque of the fields on the rotation of the armature, which is accomplished without the least shock, jar, or hesitation. The current generated by this action passes into the starting resistance, and then off as heat, the result accomplished being exactly the same as if some form of mechanical brake had been applied to motor to bring planer to a stop, with the difference, however, that the action is perfectly smooth, has no wearing or frictional surface to contend with, and needs no adjustment. The over-load on the motor at the instant of reversal is never over 50%. The entire drive of the planer is on the floor, or near the floor, where it is accessible. Owing to the absence of the usual belts, clutches, etc., the variable speed planer occupies a minimum floor space.

"The larger machines can be equipped on special order with a pendant switch, usually suspended from the arch, but which can be placed and operated from any point on the planer. With this feature the table can be advanced, reversed, or stopped from a position convenient to the cutting tool with the same ease and assurance as with the pilot switch. The pendant switch may be used regardless of position of the reversing dogs.

"Speed changes are made so easily, positively, and instantaneously that the operator can, if desired, slow down at any part of the stroke, returning at once to normal or increased speed. If a hard spot is encountered at one portion of the stroke, or if there is an extra depth of cut at any point, the operator can slow down to meet conditions. The most economical speed for different metals, such as steel, iron, bronze, or brass, is instantly available.

"The reversing is accomplished so positively that a stroke of 4½ ins. can be taken on a 96 in. machine."

The foregoing paper was read before the Canadian Society of Civil Engineers Mechanical Section recently.

Section Work on Railways.

When the Board of Railway Commissioners had under consideration recently the question of the length of sections to be worked by section gangs on railways and the number of men to compose the gangs, a very important announcement was made as to a change of practice on the C.P.R. eastern lines.

Complaint had been made to the Board that 22 C.P.R. section foremen had been laid off between Chalk River and Port Arthur, Ont., thus lengthening the sections about nine miles, and giving only two men to the increased length. There was also a complaint about the C.P.R. Owen Sound branch, where, it was claimed, a section gang had to look after eight miles or more of track.

E. W. Beatty, Chief Solicitor, C.P.R., contended that the Board had no power to say what number of men a railway company should employ per mile. The Board agreed with this contention and decided to rescind its order of Sept. 15, 1909, ordering the Brandon, Saskatchewan and Hudson Bay Ry. to employ a foreman and two men on each of its Boissevain and Minto sections.

J. W. Leonard, Assistant to the Vice President, C.P.R., in the course of the argument, in speaking of lines east of Fort William, said:—"I have no hesitation in saying that the system we have of section gangs has not been satisfactory, and I hope to get rid of it, and instead of section gangs there will be simply supervisors and inspectors. I am working with the object of doing a lot of our work by contract and the balance by extra gangs, outside of section labor as we know it. There are more men on the C.P.R. Pacific track today under maintenance than there have ever been at this season of the year before. As an example, over 80% of our tie renewals were in position on June 1. Last year by June 1st 62% were in position, and this is the big work of the spring. We are going to maintain our track, but we want the right to maintain it either by extra gangs or by contract, or whichever way we think we can get the best results. The section forces we hope to get down to simply inspectors or track walkers. We will get them down lower than what we have today and have what we call a section staff. We have put no restrictions of any kind on our superintendents as to the number of men they will employ, but we have said to them, 'For all the year round you must not employ less.' We put a minimum on them. They have the privilege of employing as many more as they think the conditions warrant. Prior to our last reorganization of our track force the minimum force that superintendents were authorized to use on eastern lines was at the rate of 2.19 miles per man; under the new organization it is 2.14. That is, they are told they must not employ less than that."

◆

Railway Lands Patented.—Letters patent were issued during May in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Calgary and Edmonton Ry.	16,273.00
Canadian Northern Ry.	530.14
Canadian Pacific Ry.	12.53
Manitoba Southwestern Colonization Ry.	42.33
Total	16,858.00

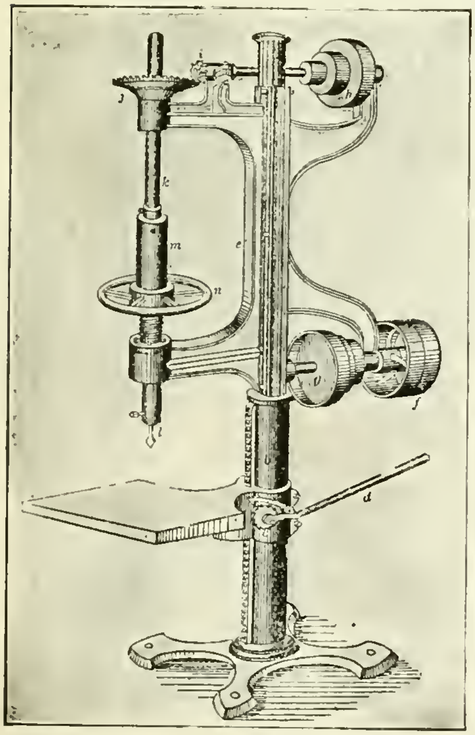

Fig. 21. Old Drill built in United States.

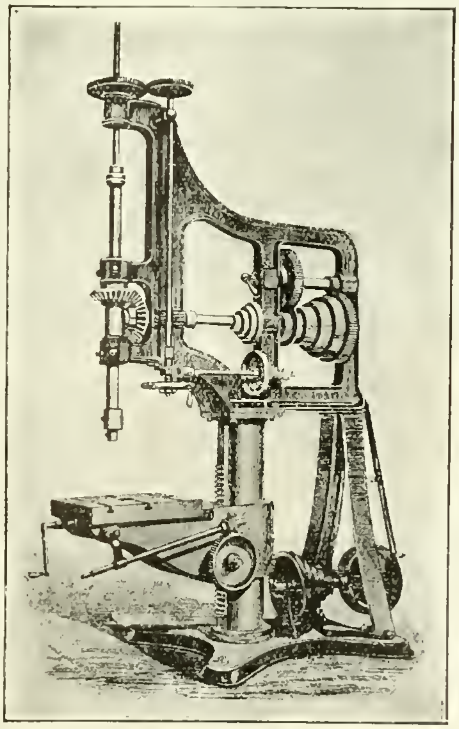

Fig. 22. Vertical Drill built in 1869.

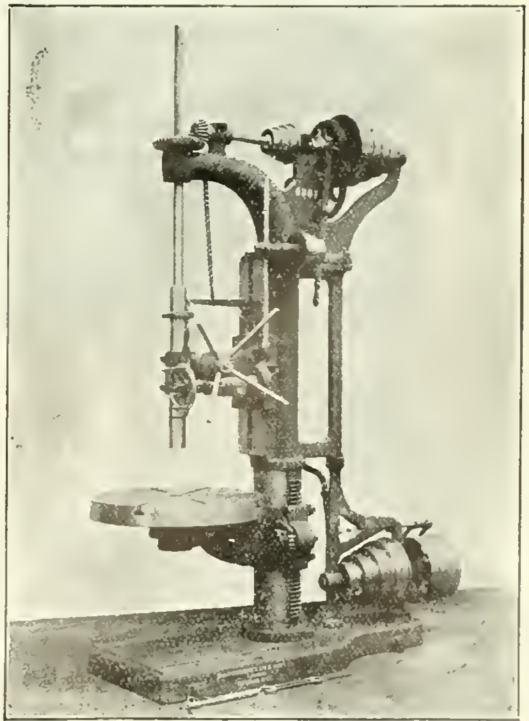

Fig. 23. Modern Vertical Drill.

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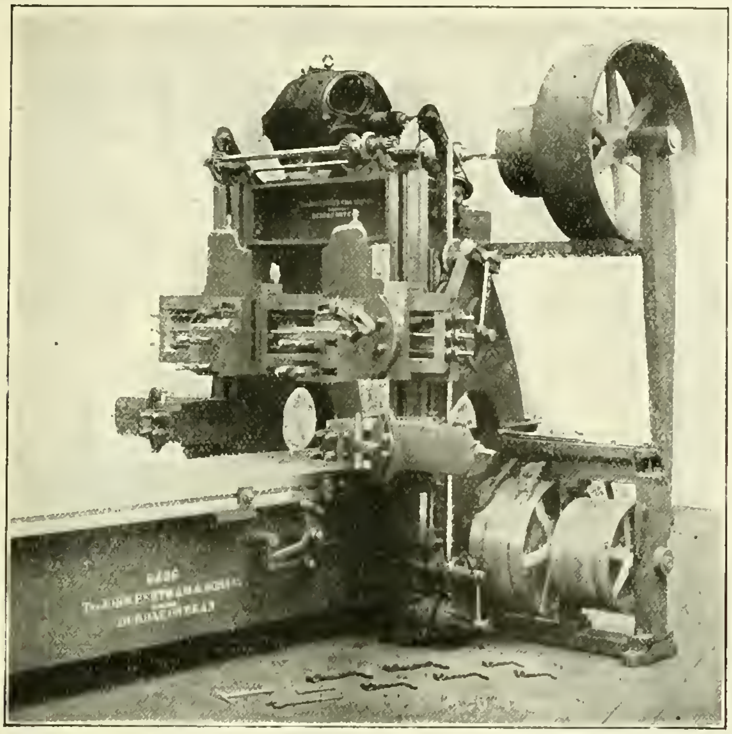


Machine Tool Construction. Fig. 28. Motor Drive mounted on Housings of Machine.

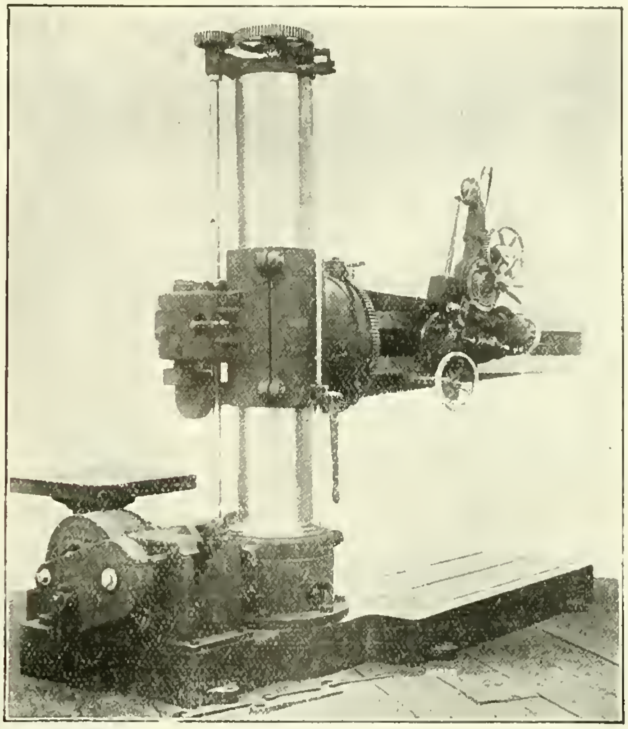


Fig. 25. Modern Full Universal Radial Drill.

Great Northern Ry. Lines in Canada.

Midland Ry. Co. of Manitoba.—Notice is given in the name of the M.R. Co. of M., which is another name for the Midland Great Northern Ry., that application will be made to the Dominion Government, under the provisions of the Navigable Waters Protection Act, for approval of plans for a bridge across the Assiniboine River in Winnipeg.

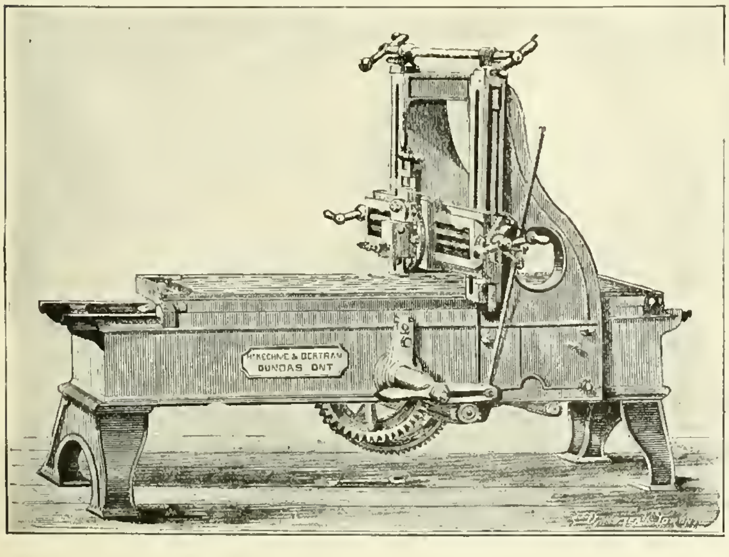
Midland Great Northern Ry.—Subcontracts have been let to B. J. Egan for grading, and to Farrelly Bros. for excavation on the line to connect with the terminals between Ross and Pacific Avenues, Winnipeg. The site for the terminals has been cleared, and the work of grading, etc., is being proceeded with.

A subcontract was reported let to Powell and Webster for the subways between Tecumseh and Brant Streets, Winnipeg. R. M. Knox, Superintendent of Construction for A. Guthrie & Co., the general contractors, stated June 12 that satisfactory progress was being made with the work, and it was hoped to get the line finished by Nov. 1.

Regina, Sask.—Press reports state that an arrangement has been made with the G.T. Pacific Ry., under which the G.N.R. branch now terminating south of the International boundary at either Antler or Sherwood, N.D., will be connected with the G.T.P.R. branch now under construction from Regina, Sask., to the International boundary, and traffic interchanged. One report states that the G.N.R. will run its trains into Regina, and will build a line easterly to Winnipeg, connecting up on its way with the Brandon, Saskatchewan and Hudson Bay Ry.; and westerly to connect up with the Crow's Nest Southern Ry., and the Vancouver, Victoria and Eastern Ry.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—J. H. Kennedy, Chief Engineer, was in Vancouver July 3, after making a trip of inspection over the line. He stated that during 1910 there had been 15 miles of grading done from Princeton to Coalmount, on the Tulameen, and it was expected to have the steel laid on this early in Sept. He could not state when work would be started on the 41 miles from near Coalmount to the summit of Hope Mountain. The surveys were all completed from the east to the summit, which was 3,800 ft. above the sea level, but the surveys from the west had not been fully completed. A. H. Hogeland, Chief Engineer, Great Northern Ry., inspected the work to the Tulameen July 7, and it is said that track laying will be gone on with at once.

Near Hope connection will be made with the Canadian Northern Pacific Ry., and that company's track used for some miles. The Board of Railway Commissioners has approved of the revised location plans for the section from east line of sec. 15, tp. 16, to the west line of tp. 26, from mileage six to a junction with the Canadian Northern Pacific Ry. at mileage 13.3. The construction of the section of the line connecting the already existing lines at the coast with the C.N.P.R. is being gone on with, and is expected to be completed this fall. The principal piece of work on this section of the line is a trestle two miles in length at Abbotsford. (July, pg. 655.)



Machine Tool Construction. Fig. 26. Iron Planer built in 1867.

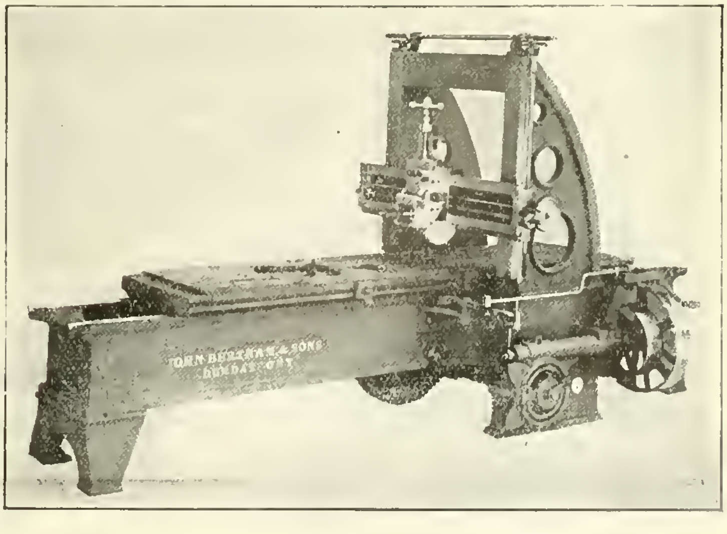


Fig. 27. Thirty-six Inch Iron Planer.

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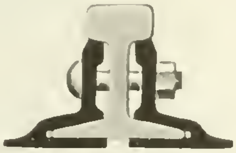
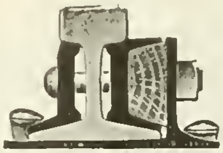

Continuous Joint

Over 50,000 miles in use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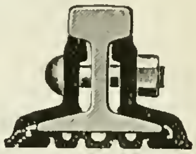
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Change of Control of the Quebec Central Railway.

Press reports stated recently that the C.P.R. and the New York, New Haven and Hartford Rd. were about to assume control of the Quebec Central Ry. While no official announcements have been made with respect to the changed conditions under which the Q.C.R. will be operated, we have reason to believe that an arrangement has been made for the leasing of the railway for 22 years to the C.P.R., which is acting for itself and for the New York, New Haven and Hartford Rd. The rental to be paid under the lease will, we understand, be sufficient to provide for the payment of full interest on all the different classes of the company's securities, and the line will continue to be operated independently.

The Q.C.R. Co. was incorporated by the provincial Legislature in 1878, and the following lines built:—Sherbrooke to Harlaka Jct. on the Intercolonial Ry., five miles from Levis, 137.50 miles; Chaudiere branch—Beauce Jct. to St. Sabine, 58 miles; Angus branch—East Angus to Angus Mills, one mile; Tring Jct. to Megantic, 60 miles; a total of 256.50 miles. This brings the mileage of lines owned to 244.80 miles, or to 287.43 miles if the 42.63 miles of yard tracks, sidings and spur tracks are included. In addition the company operates over five miles of the Intercolonial Ry. from Harlaka Jct. to Levis.

For some years the company had a rather chequered career, and in 1886 the Quebec Legislature rearranged the company's finances, and named members of the bondholder's committee in London, Eng., together with three Quebec representatives as provisional directors of the reorganized company. At a later date the number of directors was fixed at six, of whom five represented the British interests, and one was appointed by the Quebec Government. Of the original British directors named in the act of 1886, three are still on the board, viz.:—E. Dent, President; A. Bremner, Vice President, and F. H. Norman. In 1889 the directors appointed F. Grundy, an old Manchester, Sheffield and Lincolnshire Ry. man, who had done good work in building up some small railway lines in South Wales, as General Manager. After some years of hard work the line was got into good shape, with the result that when trade conditions began to revive the company was enabled to meet its obligations. In 1900 its gross earnings had reached $2,526 per mile of road, the net earnings from operation being $796 a mile. For the financial year ended June, 1910, the gross earnings were $4,981, and the net earnings $1,560 per mile of line.

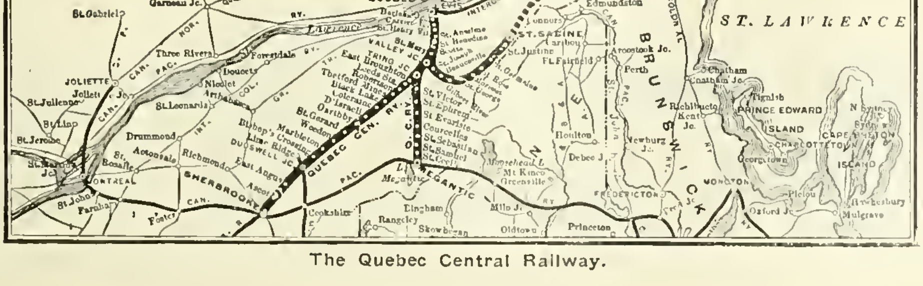
The line runs through the central section of the province, south of the St. Lawrence River, giving all the railway accommodation in the county of Beauce. It has materially assisted in the development of the asbestos mining industries in Megantic county; in fact 85% of the world's asbestos supply is carried over the Q.C.R. Valuable copper mines, lime quarries, brick works, pulp and paper mills are located along the line. The company's charter powers provide for the extension of the St. Chaudiere branch from its present terminus at St. Sabine to a junction with the Temiscouata Ry., and a line from Scotts to the south end of the Quebec Bridge.

The rolling stock at June 30, 1910, the latest figures available, consisted of:—Ten passenger and 13 freight locomotives. 13 first class, six second class, seven combination, two dining, and 10 baggage, express and postal cars for passenger service; 308 box, 325 flat, 74 stock, 25 coal, two tank and six refrigerator cars for freight service; with 46 cars in company's service.

The total receipts for the year ended June 30, 1910. were $1,105,866.77, and the total working expenses $759,555.75, leaving a net revenue of $346,311.02, which, with interest and amount brought forward, gave the directors $398,218 for distribution. After meeting interest on the $2,943,540.07 of 4% debenture stock, on the $1,644,933.33 of 3% debenture stock, and on the $1,644,933.34 of 7% income bonds, a dividend of 2% on the $3,381,603.33 of common stock was declared, and $46,593 was carried forward. The company holds in the treasury $601,277 of its capital stock. The earnings for the current year show an increase of about $108,000 over those for the last financial year, with an increase of about $40,000 in the net revenue.

J. H. Walsh,
General Manager, Quebec Central Railway.

The present General Manager, J. H. Walsh, has been connected with the line since 1881, in various positions, including Auditor, General Freight and Passenger Agent, and Traffic Manager. Since his appointment as General Manager, six years ago, the gross earnings have increased from $700,000 to over $1,200,000 a year, with a proportionate increase in net revenue. The other officials are:—Superintendent, J. Fortin; General Freight and Passenger Agent, E. O. Grundy; Engineer, J. T. Mockill Treasurer, W. S. Fry; Accountant, T. J. Maguire; Chief Despatcher, J. T. Reid; Master Mechanic, G. M. Robins; Storekeeper, M. A. Hawkins; Car Service Agent, A. S. Hobson; Car Accountant, W. S. Moy; Car Foreman, N. G. Price; General Roadmaster and Superintendent of Bridges and Buildings, J. Farquhar.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Q. C. RY.
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St. Ephrem
St. Evariste
Courcelles
St. Sebastian
St. Samuel
St. Cecil
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ST. SABINE
St. Justine
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The Quebec Central Railway.

Railways Crossing International Boundary.

Replying to a question in the House of Commons recently, the Minister of Railways said east of Port Arthur Canadian railways cross the International boundary at 23 points, and United States railways cross at one point; while west of Port Arthur Canadian railways cross at eight points, and U.S. railways at 15 points. These points are as follows:—

CANADIAN RAILWAYS.

C.P.R.—Vanceboro, Me.; Debec Jct., N.B.; Aroostook, Me.; Loweltown, Me.; Massonville, Que.; Abercorn, Que.; Emerson, Man.; North Portal, Sask.; Kingsgate, B.C.; Huntingdon, B.C.

G.T.R. — Stanhope, Que.; Rouse's Point, N.Y.; Moores, N.Y.; Dundee, N.Y.; Niagara Falls, Ont.; Fort Erie, Ont.; Windsor, Ont.; Sarnia, Ont.

CANADIAN NORTHERN RY.—Lake of the Woods, Rainy River, Fort Frances, Ont.

ALBERTA RY. AND IRRIGATION CO.—Coutts, Alta.

CANADA SOUTHERN RY.—Niagara Falls, Fort Erie and Amherstburg, Ont.

HEREFORD RY.—Conans Mills, Que.

MASSAWIPPI VALLEY RY.—Stanstead Jct, Que.

RUTLAND AND NOYAN RY.—Noyan Jct., Que.

ST. LAWRENCE AND ADIRONDACK RY.—Near Kelso, Que.

QUEBEC, MONTREAL AND SOUTHERN RY.—Noyan, Que.

OTTAWA AND NEW YORK RY.—Cornwall, Ont.

UNITED STATES RAILWAYS.

WASHINGTON COUNTY RY. — Near Princeton, N. B., and passes over Canadian boundary for five miles.

GREAT NORTHERN RY.—Pembina, Man., Gretna, Man.; Wakeham, Man.; Bannerman, Man.; Gateway, Mont.; Beddington, B.C.; Waneta, B.C.; Laurier, B.C.; Carson, Wash.; Ferry, Wash.; Molson, B.C.; Chopeka, Wash.; Huntingdon, Wash.; Blaine, Wash.

The last seven lines mentioned under Canadian Railways are the names of the companies organized in Canada under which U.S. railways enter Canada. The New York Central and Hudson River Ry. owns the Ottawa and New York Ry.; and the St. Lawrence and Adirondack Ry.; controls the Rutland and Noyan Ry., and through the Michigan Central Ry. controls the Canada Southern Ry. The Maine Central Ry., which owns the Washington County Ry., referred to under U.S. Railways, also owns the Hereford Ry. The Boston and Maine Rd. operates under lease the Massawippi Valley Ry. The Delaware and Hudson Co., owns the Quebec, Montreal and Southern Ry.

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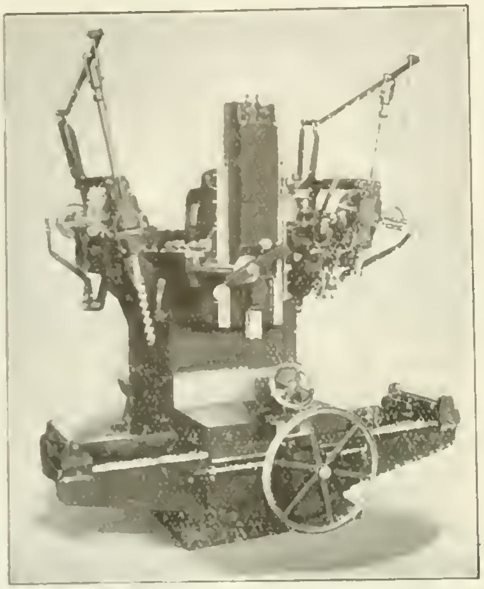

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RAILWAY DEVELOPMENT.

Projected Lines, Surveys, Construction, Betterments, Etc.

Alaska Central Ry.—The Sovereign Bank shareholders decided, July 11, to accept the offer of International Assets, Ltd., to purchase the assets of the bank from the banks assisting in the winding up proceedings. The new company, which is composed entirely of shareholders of the Sovereign Bank, becomes the sole creditor. The assets include the Alaska Central Ry. and an interest in another U.S. railway, from which it is hoped in time to realize considerable profit. (Nov., 1909, pg. 835.)

Algoma Central and Hudson Bay Ry.—Tenders were received up to July 15 for the extension of the line from the C.P.R. transcontinental line at Hobon, Ont., northerly to a junction with the National Transcontinental Ry., 142 miles west of Cochrane, a distance of about 101 miles. Location surveys have been made, and a very feasible route has been secured. A gradient of 0.6% compensated for curvature, with maximum curvature of six degrees, has been secured. The height of land is crossed between Wabatougashene and Oba Lake at an elevation 89 ft. lower than the C.P.R. grade at Hobon. Towards the north end of Oba Lake the country is rough, and there will be considerable rock work, but northerly of the lake and on to the National Transcontinental Ry. there is very little rock excavation, the country in general being flat and interspersed with rolling clay ridges. There will not be any large bridges necessary on the extension as the line parallels the large waterways and crosses only small tributaries of the same. (July, pg. 645.)

Algoma Eastern Ry.—The Superior Construction Co. has sublet to Jackson and Goldie, Winnipeg, a portion of work on the section of the line it is building from Crean Hill to Whitefish Bay. Location plans from mileage 21 to 46.75 have been approved by the Board of Railway Commissioners. (July, pg. 645.)

All Red Line Ry.—Application is being made to the Dominion Parliament for the incorporation of a company with this title, to build a railway from Montreal northeasterly to the Atlantic ocean, the Gulf of St. Lawrence or the Straits of Belle Isle. Davidson and Wainwright, Montreal, are solicitors for applicants.

Atlantic, Quebec and Western Ry.—We are advised that a lot of work is being done towards the completion of the line from Paspebiac to Gaspe, Que. Track has been laid upon 23 miles; the steel trestle at Anse a Beau Fils and the three span bridge over Barachois River have been completed. A steel trestle is being completed at Bois Brule, 15 miles from Gaspe. This leaves to be erected a large trestle at L'Anse a Brilliant, and the large bridge at Douglastown to complete the line into Gaspe. It is expected to have the steel work completed by the end of Aug., and to complete the entire line during Oct. A large force of men is at work, and the plan includes three steam shovels. (July, pg. 645.)

Brandon Transfer Ry.—Construction was started June 30, by the Great Northern Ry., upon the building of this line connecting up the different railway lines entering Brandon, Man. The contract for the grading was let to J. Bradley, Brandon, the G.N.R. doing the tracklaying. W. P. Stevenson, a G.N. Ry. engineer from Minot, N.D.., was in charge of the work. (July, pg. 645.)

Burrard Inlet Tunnel and Bridge Co.—Under the agreement it is proposed that the bridge across the Second Narrows of Burrard Inlet, B.C., shall be built by this company, and that the approaches, which are estimated to cost $200,000, shall be built by the Vancouver, Westminster and Yukon Ry. (July, pg. 645, and June, pg. 505.)

Cariboo, Barkerville and Willow River Ry.—Press reports from Vancouver, B.C., state that the company has made all necessary financial arrangements for immediate construction. It is proposed also to build at once a branch line to Bear River, in order to serve some coal properties being developed by J. Hepburn and associates. (July, pg. 645.)

Hudson Bay, Peace River and Pacific Ry.—A meeting of shareholders to elect directors and transact other business was called to be held at the company's offices, 408 McArthur Building, Winnipeg, July 24. The notice was signed by H. W. Adcock, Secretary-Treasurer. (July, pg. 645.)

Intercolonial Ry.—Tenders are under consideration for the erection of pier and sheds at the Deep Water terminus in Halifax, described in our last issue.

The cut-off line which it is proposed to build at Moncton, N.B., will leave the main line from Halifax at Sunny Brae, and will join the main line to Montreal at the new shops, a distance of 7,600 ft. This will save about 4,000 ft. in distance, but the main object is to prevent freight coming from the north, either over the I.C.R. or the National Transcontinental Ry.. when in operation, having to pass through the city of Moncton. It is contemplated that large yards will be built near the new shops, north of Moncton, where freight will be assorted and shipped to Halifax over this cut-off line to prevent its having to pass through the city. It will also cut off some of the grade out of Moncton station; but that is not the main object of this line.

The second track work between St. John and Coldbrook, N.B., was expected to be completed July 29. (July, pg. 645.)

Kaslo and Slocan Ry.—A bylaw is being prepared for submission to the Kaslo taxpayers, exempting the company's property from taxation, and granting a bonus of $5,000 towards the $25,000 fund for the operation of the line. (July, pg.. 647.)

Kettle Valley Lines.—Orders. have been issued by the Board of Railway Commissioners approving of deviations of the previously authorized plans between Westbridge and Wolverine Creek, B.C., and of the location plans for the line from mileage 35.3 to 45.6 north of Midway, B.C.

In a recent interview at Merritt, B.C., J. J. Warren, President, is reported to have said he was entirely satisfied with the general progress made with construction, and with the outlook for the future. The contract for an additional 30 miles to the summit was expected to be let early in August. (July, pg. 647.)

Michigan Central Rd.—We are advised that the company is not contemplating rebuilding the cantilever bridge across the Niagara River, at the Falls, as stated in recent press reports. The existing bridge is in good condition and adequate for the traffic. (July, pg. 649.)

The Mond Nickel Co., which has a line running from Victoria Mines station on the C.P.R. Sault Ste. Marie Branch, is now building another short line, leaving the C.P.R. at Coniston, to connect with the Canadian Northern Ry. for the purpose of serving the smelters. The exact length of this line, we are advised, is 13,500 ft. It will connect the smelter with the C.P.R. and the C.N.R. The line will be used for the shunting of cars of ore, coke, flux, etc. In addition to this line the company is building about 38,000 ft. of sidings at the smelter and roast yard.

New Brunswick and Prince Edward Island Ry.—The extension of the spur line to the freestone quarries has been completed, and freight is being shipped over it. Two sidings, each about 500 ft. in length, are being built at the quarry to facilitate traffic. (July, pg. 647.)

New Brunswick Coal and Ry. Co.—Traffic has been resumed on this line, the bridge destroyed by the fire at Washademoak, N.B., having been temporarily repaired. A permanent concrete substructure for the bridge is being built. (May, pg. 411.)

Pacific, Trans-Canada and Hudson Bay Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Edmonton to Athabasca Landing, Alta., on to Wabiska or Loon River, northeast of Lesser Slave Lake, thence northerly to the junction of Loon and Peace rivers, or toward Fort Vermillion, on Peace River, and on to Fort Smith on Slave River, a line from the junction of the Wabiska and Loon rivers easterly to Fort McMurray, thence easterly along the Clearwater and Churchill rivers through Saskatchewan to Fort Churchill or Port Nelson on Hudson Bay; a line from the junction of the Wabiska and Loon rivers, westerly to Peace River crossing, and thence westerly on the north side of the Peace River to Laurier Pass, and on to Prince Rupert or Portland Canal, on the Pacific coast. Smith and Johnston, Ottawa, are solicitors for applicants.

Port Hood-Richmond Ry. and Coal Co.—The colliery owned by the company at Port Hood, N.S., which is situated under the sea, has been flooded by the water breaking in at the bottom of the mine, 1,030 ft. below the tide level. H. Donkin, Deputy Commissioner of Mines, states that there is absolutely no hope of the mine. The company has power to build a railway from Port Hood to Port Malcolm, N.S., but has not done any construction. The directors, on the reorganization in 1910, were: S. Dyment, A. H. Dyment, H. Waddington, Toronto; Hon. R. Mackay, Montreal; G. D. Forbes, Hespeler, Ont. There is some litigation pending between the Royal Trust Co. and the Eastern Trust Co. respecting the company's bond issues. (Oct., 1910, pg. 829.)

Quebec and Saguenay Ry.—The contractors have over 1,500 men at work, and additional gangs are being added. (July, pg. 647.)

Queen Charlotte City to Masset Inlet.—In connection with mining development on Graham Island, one of the Queen Charlotte group off the British Columbia coast, it is reported that active preparations are being made for the building of a railway from Queen Charlotte City to Masset Inlet. Two companies have been incorporated by the British Columbia Legislature to build railways on Graham Island. (See Graham Island, Oct., 1910, pg. 825.)

Reid Newfoundland Ry.—The first of the branch lines to be built under the act of 1910, viz., that from Shoal Harbor to Bonavista, is nearly completed, and it is expected to have it opened for traffic in about a month. The second branch to be put under construction is that from the present West End branch by way of the South Shore to Trepassey. On this line a considerable amount of grading has been done and several miles of track are reported to have been laid. Surveys have been begun for a third line, starting from Carbonear, near Broad Cove, and extending to Heart's Content and Grate's Cove. (July, pg. 649.)

Sydney and Louisburg Ry.—Work was started June 29 on the new line from Monen Jct. to Birch Cove, N.S., about four miles. The work is being done by the company's own men. Feb., pg. 113.)

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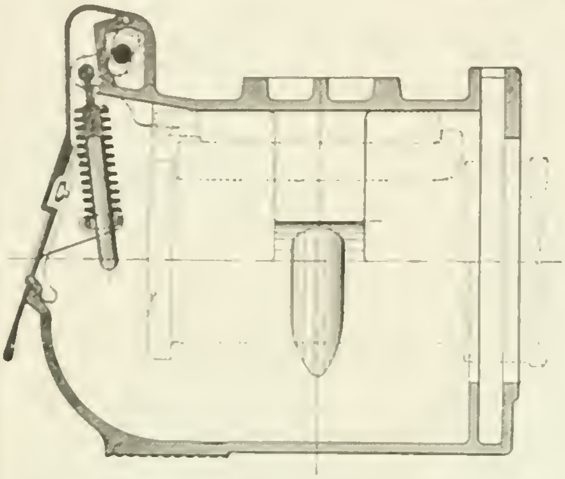

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Temiskaming and Northern Ontario Ry.—The branch line from Iroquois Falls to Porcupine, Ont., about 30 miles, was opened for traffic July 1, and considerable work has been done on the extension to Hollinger. (July, pg. 649.)

Detailed reports as to the fire in the Porcupine district show that very little damage has been done to the newly-laid track from Iroquois Falls to Porcupine Lake, and that traffic has been resumed. Considerable ballasting will have to be done to bring the branch up to standard. The construction camp on the extension from Porcupine to the Hollinger mine was burned out and J. L. Englehart, Chairman of the Commission. stated July 17 that the Chief Engineer had informed him that construction would be held up for two weeks in consequence.

Vancouver to Peace River.—A resolution passed at a recent meeting of the business men of Vancouver, B.C., sets out that it is a matter of paramount importance to the lower mainland and the coast cities, and in the best interests of the development of the province that a line of railway should be built from the coast northward to the Peace River district. A committee was appointed to bring the matter before other public bodies in the province and before the Government.

In an interview Hon. W. Templeman, Minister of Inland Revenue, stated that it was his intention to support the construction of such a line under Government guarantees.

Press reports state that an application for a Dominion charter is being made, and that the financial interests behind the proposition are represented by Lord Brassey and Norton Griffiths, M.P. of London, Eng. (July, pg. 649.)

Vancouver, Westminster and Yukon Ry.—W. McNeil, representing the V.W. and Y.R., informed the representatives of the municipalities interested in the building of a bridge across the Second Narrows of Burrard Inlet, Vancouver, July 10, that the company was then in a position to finance the construction of several miles of railway as approaches to the bridge. The rails would be laid from the company's property in the Hastings townsite to the south approach of the bridge, and from North Vancouver to the north approach by the time the bridge was built. The bridge is to be built by the Burrard Inlet Tunnel and Bridge Co., which is being largely bonused by the municipalities, aided by a Dominion subsidy which had been granted the V.W. and G. Ry. The agreement as to the bridge and approaches has been finally approved by all parties interested, and is ready for signature. (June, pg. 509, see also Burrard Inlet Tunnel and Bridge Co.)

Victoria, B.C.—The plans for the proposed harbor railway have been submitted to the city council. R. T. Elliott, K.C., informed the council that the provisional company was composed of property owners along the proposed route, and that there were no outside interests. Application had been made to the Provincial Government for approval of the plans. A bylaw granting a franchise for the railway is under consideration by the council.

The route of the proposed railway, as set out in the suggested agreement, is from the outer wharves, near Ontario St.. to Menzies St., along the shore line, under the Esquimalt and Nanaimo Ry., following Constance St. across Rock Bay to Bridge St.. and terminating at Selkirk water. Authority to build certain branch lines is also asked. (July, pg. 649.)

An increase of 2½ cents an hour from July 1 has been granted to machinists on the Canadian Northern Ry. west of Port Arthur, Ont.

August Birthdays.

Many happy returns of the day to—

H. H. Adams, General Manager, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont., born at Detroit, Mich., Aug. 13, 1876.

W. E. Bishop, Manager, Hamilton Steamboat Co., Hamilton, Ont., born at Brantford, Ont., Aug. 10, 1868.

J. F. Chapman, General Freight and Passenger Agent, Bay of Quinte Ry., Thousand Islands Ry., and Oshawa Ry., Deseronto, Ont., born at Frankford, Hastings Co., Ont., Aug. 25, 1863.

C. H. N. Connell, Engineer of Maintenance of Way, Canadian Northern Quebec, and Quebec and Lake St. John Rys., Quebec, born at Woodstock, N.B., Aug. 26, 1876.

F. Barlow Cumberland, Vice President, Niagara Navigation Co., Port Hope, Ont., born at Portsmouth, Eng., Aug. 5, 1846.

C. D. Fisher, Superintendent District 5, Canadian Northern Ry., Saskatoon, Sask., born at Athens, Ont., Aug. 24, 1867.

G. H. Ham, head office staff, C.P.R., Montreal, born at Trenton, Ont., Aug. 23, 1847.

W. P. Hinton, General Passenger Agent, G.T.P.R., Winnipeg, born at Hintonburg, Ont., Aug. 30, 1871.

R. Kerr, ex-Passenger Traffic Manager, C.P.R., Montreal, born at Toronto, Aug., 1845.

J. D. McDonald, Assistant Passenger Agent, G.T.R., Chicago, Ill., born at Toronto Aug. 27, 1855.

T. McHattie, Superintendent of Motive Power and Car Department, Central Vermont Ry., St. Albans, Vt., born at Dufftown, Banffshire, Scotland, Aug. 8, 1854.

M. K. McQuarrie, Resident Engineer, District 1, British Columbia Division, C.P.R., Revelstoke, born at Sault Ste. Marie, Ont., Aug. 17, 1884.

C. Montgomery, Assistant Master Mechanic, Pere Marquette Rd., St. Thomas, Ont., born near London, Ont., Aug. 29, 1860.

W. E. Mullins, General Manager, Costa Rica Rd., and Northern Rd., of Costa Rica, San Jose, born at Stratford, Ont., Aug. 13, 1870.

F. H. Phippen, K.C., General Counsel, C. N.R., Toronto, born at Belleville, Ont., Aug. 26, 1862.

W. M. Porteous, Freight Agent, C.P.R., St. Louis, Mo., born at Edinburgh, Scotland, Aug. 3, 1857.

J. F. Richardson, Superintendent Telegraph, Eastern Division C.P.R., Montreal, born at Granby, Que., Aug. 23, 1861.

W. G. Ross, ex-Managing Director, Montreal St. Ry., Montreal, born there, Aug. 6, 1873.

W. Le B. Ross, Local Treasurer, G.T. Pacific Ry., Winnipeg, born at Ottawa, Ont., Aug. 9, 1868.

F. C. Salter, European Traffic Manager, G.T.R., and Canadian Ex. Co., London, Eng., born at Sarnia, Ont., Aug. 31, 1863.

C. R. Scoles, General Manager, Quebec Oriental Ry., New Carlisle, Que., born at Grantham, Lincoln, Eng., Aug. 27, 1856.

S. A. Simpson, Superintendent, Sleeping, Dining and Parlor Cars and News Service, Saskatchewan Division, C.P.R., Moose Jaw, born at Toronto, Aug. 22, 1880.

W. Stitt, General Passenger Agent, C.P.R. Eastern Lines, Montreal, born in Kirkcudbrightshire. Scotland, Aug. 3, 1855.

J. F. Sweeting, Industrial Agent, C.P.R. Western Lines, Winnipeg, born at Worthing, Eng., Aug. 20, 1872.

W. F. Taylor, General Storekeeper, I.C.R., Moncton. N.B., born at Hillsboro, N.B., Aug. 20, 1855.

F. J. Thomson, Marine Superintendent, Canadian Northern Steamships, Ltd., Montreal, born in Cheshire, Eng., Aug. 20, 1876.

W. B. Way, Assistant Superintendent District 3, Eastern Division, C.P.R., Montreal, born at Bowmanville, Ont., Aug. 22, 1867.

E. H. Williams, Locomotive Foreman, Canadian Northern Ry., Brandon, Man., born at West Toronto, Ont., Aug. 26, 1884.

I. C. R. Work at Campbellton, N. B.

The reconstruction of the buildings and the rearrangement of the Intercolonial Ry. yards at Campbellton, N.B., rendered necessary after the destructive fire which practically burned out the whole town over a year ago, is being rapidly pushed forward. The work is being done under the supervision of the Construction Department. Following is a description of the work at present under way, and proposed:—

STATION BUILDING.—This structure is under contract and will be completed and ready for occupation before the cold weather sets in. It will be of brick faced with pressed brick, with sills, lintels, base, copings, etc., of cut free stone of a brown tint. The foundation and basement walls are to be of concrete. The main building will be 112 by 32 ft., one and a half stories high, with pitch roof covered with slates. A one story, flat roofed extension 44½ by 30 ft. will be built at each end of the main building, making the total length 201 ft. over all. The whole building will be surrounded by a 10 ft. verandah, the roof of which is to be covered with asbestos cement shingles. The basement, which will be the full size of the main building, will have a clear head room of about 10 ft. Part of this will be taken up by the heating apparatus, which is to consist of two 35 h.p. return tubular boilers, operating under 60 lbs. pressure. It is intended to heat the passenger cars at rest in the yard by this equipment, as well as the building, pressure reducing valves being used for the building. The ticket and telegraph offices will be located in the central part of the building, with men's waiting room, smoking room and lavatory at one end, and the women's waiting room, parlor and lavatory at the other end. The eastern one story extension will contain the baggage and express rooms, the western extension will be used for the trainmen, car checkers and mail. The second floor of the main building will be used as offices for the Superintendent and staff. The walls of the waiting room, parlor, smoking room and lavatories, to a height of 7 ft. above floor, will be tiled, the floors of the lavatories will also be tiled. The upper part of the walls and ceilings will be finished in wood paneling. The offices on second floor will also be finished in wood. All floors, except these tiled, will be of hard wood. The sanitary arrangements for the convenience of the public will be of the very best. The building is to be surrounded by a concrete walk, extending along the track front about 800 ft. The contractors are Woods and Co., St. John, N.B.

FREIGHT SHED.—After the fire last year a freight shed was constructed, at the then most convenient place; this building is 160 by 35 ft., and will now be moved to a new location to suit the rearrangement of the yard, and a new addition of 140 ft. built, making the total length of the finished shed 300 ft. Offices for the freight handling staff will be located in the eastern end.

REST ROOM.—A large and well equipped building will be erected for the accommodation of the engine men, near the new engine house erected last fall; the building will be divided into living, sleeping and cook rooms, and bath room fitted with lavatory basins and shower bath; the sleeping rooms are to be made

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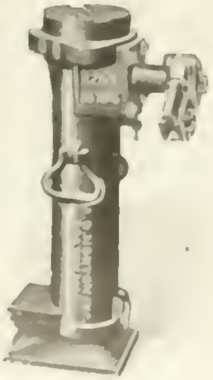

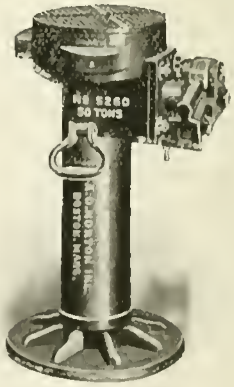

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Montreal Toronto Winnipeg Cobalt Calgary Vancouver large enough so that each will accommodate four persons. The heating will be by steam from the power house nearby.

UNDER CROSSING.—As the new station is being erected on the opposite side of the yard from that destroyed last summer, all traffic to and from the station to the business part of the town would be across the main line of railway. To obviate this, the main street is to be divided and a wide masonry subway built and the roadway carried under the tracks. This will be about 340 ft. east of the existing grade crossing, and will also be put under way this summer.

The new round house was fully described and illustrated in our last issue.

G.T.R. Betterments, Construction, Etc.

New England Lines Proposals.—Location plans have been filed at Providence, R.I., on behalf of the Southern New England Rd., for its branch line to tidewater in Rhode Island. The plans show terminal facilities near Kinsey Ave., and a tunnel under Capitol Hill, Providence. The line enters the State on the Massachusetts boundary in Woonsocket, and passes through Lincoln, Cumberland, North Providence, Pawtucket, Central Falls, Providence. and Cranston.

E. H. Fitzhugh, President of the S.N.E.R., and First Vice President G.T.R., was recently in Providence, discussing with the city authorities the question of wharfage facilities. New docks are under construction, both by the State and by the municipality, and the mayor stated that accommodation would be provided for the company at both of them.

An appeal is being made to the courts to declare that certain property in Woonsockett, R.I., on which the New York, New Haven and Hartford Rd. is building a freight shed, is necessary for the Southern New England Rd. It is alleged that as soon as the proposed route of the S.N.E.R. became known the N.Y., N.H. and H.R. Rd., expropriated the land in question and started building the freight shed.

The plans for the S.N.E.R. from Palmer, Mass., to the Rhode Island boundary, were approved by the Massachusetts Railroad Commissioners, July 12.

The courts issued an order July 17 directing the N.Y., N.H. and H.R. to suspend work on the freight shed at Woonsocket, which was being built on the right-of-way on which it was planned to build the S.N.E. Rd.

Lachine, Jacques Cartier and Maisonneuve Ry.—The Montreal board of control informed the company's representatives, June 29, that it would not agree to any more level crossings within the city. As a result of this the question of the approval of the route of the L., J.C. and M.R., which was adjourned to see if an arrangement could be made with the city, came again before the Board of Railway Commissioners, July 11. It was decided that the Board's engineer should confer with the City Engineer and the Chief Engineer of the railway, and bring about an understanding. The company states that it does not desire to cross any existing street on the level, but does not desire to have to build an elevated line in districts where there are no streets.

Ottawa Improvements.—The new coal chutes east of the Rideau car shops, Ottawa, are nearing completion. It is stated that owing to the delay in settling the railway entrance plans that work will not be started this year upon the erection of the additions to the shops.

Ottawa, Rideau Valley and Brockville Ry.—In an interview at Brockville recently G. E. Kidd, Ottawa, solicitor for the company, is reported to have stated that work would be started laying out the line as soon as engineers could be secured, and that applications were being made for municipal aid and for a Dominion subsidy.

Toronto.—While no official announcement had then been made it was stated on the authority of Sir Lyman Jones, President of the Massey-Harris Co., that the company's tender for the purchase of the Asylum and Central Prison grounds would probably be accepted by the Ontario Government. The company's tender was for 10 acres. The G.T.R. sent in a tender in conjunction with the Massey-Harris Co., and he believed the balance of the land would be sold to the G.T.R. If this statement is correct the G.T.R. will acquire 25 acres of the Asylum site, and the whole of the 23 acres forming the prison site.

Brantford, Ont.—Application is being made to the Board of Railway Commissioners for authority to build a line from the main line, westerly and southwesterly through the Holmedale district, to a connection with the Brantford and Tillsonburg branch on block 4, Kerr trail. (July, pg. 655.)

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers to distinctly understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

The Canadian Car and Foundry Co. paid its regular quarterly dividend of 1¾%, July 25, for the quarter ended June 30.

The Baldwin Locomotive Works, Philadelphia, Pa., has issued its Record no. 70, very fully describing and illustrating Walschaert's valve gear.

The Goldschmidt Thermit Co.'s quarterly publication, Reactions, just issued, contains a number of interesting illustrated articles descriptive of the Thermit welding process as applied to locomotive and marine repairs.

The Standard Steel Works Co., Philadelphia, Pa., has issued a catalogue devoted to steel tires, giving in detail the specifications adopted by the American Society for Testing Materials. Illustrations, diagrams, and a facsimile for dimension blank orders are included.

Following the absorption of the Montreal Steel Works and the Ontario Iron and Steel Co. by the Canadian Steel Foundries, Limited, E. G. Jackson, heretofore Local Manager, Montreal Steel Works, at Toronto, has been appointed Sales Manager, Canadian Steel Foundries, Limited, with headquarters in Montreal.

The Baldwin Locomotive Works, Philadelphia, Pa., has issued its Record no. 69, devoted to Mallet articulated locomotives built for the Atchison, Topeka and Santa Fe Ry., the last order filled being for 40. They are in freight service on the Belen cut-off, where the maximum gradient is six-tenths of 1%. They are rated at 2,200 tons of cars and lading, but have actually handled 2,700 tons, maintaining a speed of 15 miles an hour on the grade mentioned.

The Flannery Bolt Co., Pittsburgh, Pa., has issued a well illustrated booklet on the breakage of staybolts, recommending the practice of flexible staybolt adjustment to the mechanical departments of railways. It also contains a paper on the inequality of expansion in locomotive boilers, and the possibility of eliminating the bad effects therefrom, by D. R. McBain, Superintendent of Motive Power, Lake Shore and Michigan Southern Ry.

Consequent on the reorganization of the Canadian Locomotive Company, Kingston, Ont., the following directors have been elected:—Hon. W. Harty, Kingston, President; J. L. Whiting, K.C., Kingston; Aemilius Jarvis, Toronto; Robert Hobson, Hamilton; F. G. Wallace, Pittsburgh, Pa.; W. Y. Soper, Ottawa, and J. Redmond, Montreal. C. Bermingham, who has been Managing Director for many years, has retired on account of ill health. The appoinment of a manager has not yet been made.

The Rudel-Belnap Machinery Co., Ltd., has been incorporated, with office in Montreal, to deal in electrical, mill, mine, machine shop, railway and contractors machinery and supplies, the principal shareholders being C. M. Rudel, who was sole proprietor of the Rudel-Yeates Machinery Co., and L. J. Belnap, who recently resigned from the service of Allis-Chalmers-Bullock, Ltd., after having been Manager of the Winnipeg office for four years, and subsequently Manager of the Montreal district office for a similar period. The new company will also have charge of the Canadian Crocker-Wheeler Co.'s eastern business.

Carr Lane Glasgow, who has been appointed Montreal district sales manager of Allis-Chalmers-Bullock, Limited, has had extensive experience in the construction of electric railways and the design of electric power plants. After leaving college he was in the employ of Westinghouse, Church, Kerr and Co. for five years, and was one of the engineers in connection with the construction of the Lackawanna and Wyoming Valley Electric Ry. and the Grand Rapids, Grand Haven and Muskegon Electric Ry., and the electrification of the Long Island Ry. Later he was engaged in the electrification of the West Jersey and Sea Shore Ry., and also with the Northern Colorado Power Co. He is a graduate of Cornell University in mechanical engineering.

A Railway to Hudson Bay.

The Dominion Government steamer Minto sailed from Halifax, N.S., July 8, on a surveying expedition to Hudson Bay. Her special business will be to determine the approaches to Fort Churchill and Port Nelson, as well as other possible harbors on the Bay. The selection of the terminus for the projected railway from Pas Mission, Sask., to the Bay, will be finally determined, it is said, upon the report presented to the Government by the officers of the Minto.

Captain Smith, of the Hudson Bay Co.'s steamer Pelican, stated in Montreal, July 11, as a result of his experience as a navigator in the Bay, that the conditions are far too uncertain to allow a profitable exploitation of the Bay route for ocean travel, but added that Port Nelson, and not Fort Churchill, would provide the best natural port in the Bay. (July, pg. 655.)

◆

A short time ago a press report stated that the C.P.R. was considering the installation of soda fountains on its transcontinental trains. In pursuance of our usual practice to verify matter of this sort before publication, we made enquiry, and were advised that it was only a rumor and not official, although it was not improbable that the innovation might be tried. We have since been officially advised that there was no foundation whatever for the report.

Electric Headlight Saves Train

(From Daily Papers)

"Wednesday night B——— forgot to deliver an order to hold Eastbound Passenger Train No. 6, and only the fact that the Electric Headlight of the oncoming Passenger train was seen at a great distance by the Engineer of the Westbound Freight prevented a head end collision in the ——— Canyon near ———. The warning light was seen in time to enable the freight to get back on to the siding at ———."

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WARNER & SWASEY, Turret Lathes for Brass and Iron.
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C.P.R. Betterments, Construction, Etc.

Windsor Street Station, Montreal.—The steel work on the extension of this building was reported completed July 8. The concrete and stone work is now going ahead rapidly. Work has been started on the excavation for the boiler house, on Mountain St., from which the new portions of the station will be heated.

Longue Pointe Branches.—The Board of Railway Commissioners is being asked for authority to build two additional branch lines in Longue Pointe Ward, Montreal.

Quebec Jct. to Ste. Agathe Second Track.—Unconfirmed press reports state that plans are being made for building a second track from Quebec Jct. to St. Agathe, Que., about 50 miles, and that work will probably be started on it next year.

In a recent interview D. McNicoll, Vice President, said there had been a considerable increase of traffic since there had been a double track line to Quebec Jct., and it was the company's intention to double track every portion of the Eastern Division wherever the traffic warranted.

Lachine Bridge.—Two abutments on the north side of the river, together with two land piers and ten river piers for the new bridge across the St. Lawrence at Lachine, have been completed. There are still seven river piers to be erected.

Guelph and Goderich Ry.—Application is being made to the Stratford, Ont., City Council for right-of-way through the city for the projected line to extend from Linwood, on the G. and G.R., to Embro, on the Tillsonburg, Lake Erie and Pacific Ry. The plan shows a route along the south of Victoria Lake, and through considerable valuable property.

Sudbury-Romford Jct. Second Track.—A second track is being built from Romford, mileage 72, to 76, Cartier subdivision. This has become necessary owing to the increased traffic since the opening of the Toronto-Romford line. A station and telephone office will be built at mileage 76, for the convenience of passengers and to facilitate the operation of trains. The two tracks from there east to Romford Jct. will be operated as independent main lines of the Cartier and Sudbury subdivisions, and the trains from mileage 76 to Sudbury will be handled by the staff system. The grading necessary involves several fairly heavy cuttings. The contract for the excavation has been let to M. McCormick, Sudbury, Ont., and the train filling is being done by the company's own forces.

Fort William Yards.—Engineers have been engaged in marking out the proposed new yard on No. 1 Island, Fort William, and it is expected that work on the grading for the six miles of track to be laid there will be started at once. Connection will be made with the new yard by way of the McKellar River bridge, and by the new Kaministikwia River bridge.

The general plans for the projected improvements at Fort William, Ont., we are advised, are not yet completed, and it will be some time yet before any decision will be reached as to what will be done.

Winnipeg Beach Branch.—The Board of Railway Commissioners has approved of plans for the diversion of the line in Winnipeg Beach, Man.

Royal Alexandra Hotel, Winnipeg.—The site upon which the addition to the Royal Alexandra Hotel, Winnipeg, will be built is immediately east of the existing building, on a portion of the present court. Press reports state that the addition will be built immediately.

Hamiota to Birtle.—The location plans for this branch line from sec. 7, tp. 14, range 23, west of the principal meridian, to sec. 12, tp. 17, range 12, west of the principal meridan, 32.67 miles, have been approved by the Board of Railway Commissioners.

Brandon Station.—A contract was reported let, July 12, to the Brandon Construction Co., for the erection of the new station at Brandon, Man. The contract calls for the completion of the building in Feb., 1912.

Western Lines Construction.—A branch is to be built from Boissevain, Man., to Lauder.

Engineers are laying out the route for the extension of the branch from Virden, from the present track end to McAuley, Man. Press reports state that construction is to be gone on with at once, and the line completed this fall.

Track laying was started July 10 from Imperial, Sask., southerly, and it is expected to have steel laid to Craven early in Sept. The ballasting of the line from Colonsay to Imperial has been practically completed.

The contractors have started grading on the new branch from Bassano, Alta., into the company's irrigation lands.

Construction on the branch from Irricana to Standard, 37 miles, is reported to have been completed, and it is expected to have it open for traffic shortly.

Saskatoon Industrial Spurs.—Application is being made to the Board of Railway Commissioners for authority to build three industrial spurs, 3,120 ft., 2,640 ft., and 2,736 ft. long, respectively.

FROM THE PASSENGER TRAFFIC MANAGER OF THE C.P.R.

C. E. E. Ussher, Passenger Traffic Manager, C.P.R., writes:—

"I look upon the Railway and Marine World as the paper which anyone interested in Canadian railway or marine matters has to take in order to keep posted.

"I would not be without it for considerably more than 'the price of admission.'"

Moose Jaw Yards and Shops.—A large addition is being made to the stockyards at Moose Jaw, Sask., and a new spur line is being built along the front of the entire yard. The concrete foundations are about completed for a new car repair shop.

Swift Current to Brooks Branch.—The location plans of the line from Swift Current to Brooks Branch, Sask., for 78 miles have been approved by the Board of Railway Commissioners.

Western Shops.—It is said that the question of the location of the new shops in Alberta or Saskatchewan was under consideration when Sir Wm. Whyte was in Montreal recently, and it is stated that a decision as to where they will be located will be reached shortly. Calgary, Medicine Hat, Lethbridge and Bassano have each pushed their claims to be favorably considered. These shops will be nearly, if not quite, as large as the Winnipeg ones.

Hotel and Station at Calgary.—Tenders for excavation on the site of the hotel at Calgary, Alta., are under consideration. The remaining portions of the old stone station building are being removed, and tenders are under consideration for the erection of the new station.

Lacombe Branch Easterly.—Revised location plans have been approved by the Board of Railway Commissioners for the extension of the branch from Lacombe, now terminating at Castor, Alta., easterly to a junction with the line now building from Moose Jaw. The revision is near mileage 147, and covers from sec. 26, tp. 37, range 14, to sec. 2, tp. 35, west of the fourth meridian.

Calgary and Edmonton Ry.—The Dominion Parliament is being asked to authorize the company to build a branch from near Sidgewick, southerly to the extension of the Lacombe branch in tp. 36, range 11, west of the 4th meridian, Alta.; and a branch from the above line north of the Battle River, north westerly to a junction with the Wetaskiwin branch in range 17, 18 or 19, west of the 4th meridian, Alta.

Wardner to Fort Steele, B.C.—Revised location plans have been approved by the Board of Railway Commissioners for the main line from mileage 0, on the British Columbia Southern Ry., south of Wardner to north of Fort Steele, B.C., and northerly from mileage 35.7, Kootenay district.

Kootenay Central Ry.—It is expected that track will be laid on this line to Fort Steele this season, and, if conditions permit, to complete the grading on 25 miles northerly from that point. The Board of Railway Commissioners has approved of the location of the line to Shuswap Indian reserve, north of Atherlinar tp., at mileage 62.54.

Kaslo to Three Forks, B.C.—At a public meeting held at Sandon, B.C., July 3, a resolution was passed asking the Provincial Government to approve of the building of this branch of the C.P.R., and not to aid the reconstruction of the Kaslo and Slocan Ry.

Wharf at Victoria.—Work was started July 10 on the 240 ft. addition to the wharf at Victoria.

Esquimalt and Nanaimo Ry.—We are advised that a contract has been let to Palmer Bros. and Hemming, Vancouver, B.C., to build 22 miles of branch lines in the Cowichan district. The longest branch will start from near Duncan and will run to Cowichan Lake, 18.5 miles, and the other branch will leave the main line near Westholme, and will run to tidewater at Osborne Bay, 3.5 miles. Construction will be started at once, and it is expected to have both branches opened for traffic in the spring.

Track laying on the extension to Port Alberni has been completed to the summit beyond Cameron Lake, and it is expected that steel will be laid into Port Alberni by Aug. 15. The wharf at the terminus is completed.

Reports from Victoria state that extensive deposits of iron have been discovered in the vicinity of the upper Quinsam Lake, on property held by United States interests. A deputation representing the mineowners waited on R. Marpole, Vice President, in Vancouver, July 10, with a view of having a branch built to serve the mines. It is said that an engineering party will be put in the field to locate a line from a point on the main line survey north of Comox, to Upper Quinsam Lake, about 15 miles. (July, pg. 657.)

Telephone Dispatching on the G. T. R.

The G.T.R. has been using the telephone for dispatching trains upon two sections for the past eighteen months, viz., from North Parkdale, via Allandale, to Burlington Jct, 140 miles, and from Allandale to North Bay, 185 miles, with satisfactory results. An unconfirmed report states that a decision has been reached to abandon the system of dispatching trains by telegraph on all lines and to use telephones instead, over the whole of the company's system. This, it is said, will require the installation of over 30 circuits at a cost of something like $500,000. The cost of installation is said to be about 75% greater than the telegraph, but a saving of about 50% in operation is effected.

Otis Cars on C.P.R. Coal Pile at Montreal.

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AND THEIR USES

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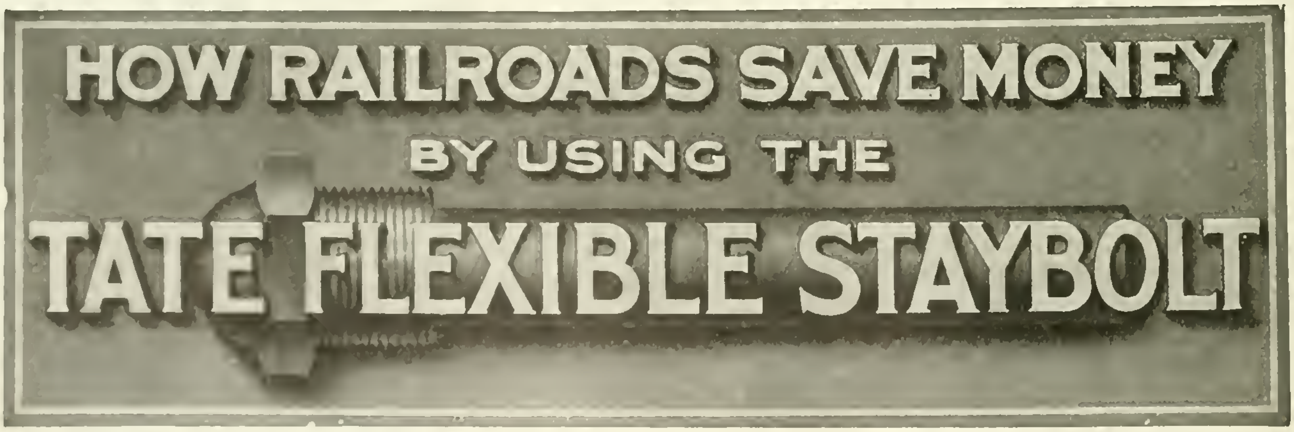
THE HART-OTIS CAR CO., LIMITED, MONTREAL



TIME HAS DEMONSTRATED

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Canadian Northern Ry. Earnings, Etc.

Gross earnings, working expenses and net profits from July 1,, 1910, with increases over, or decreases from, those of 1909-10 :

	Earnings.	Expenses.	Net. Earnings	Net Increase.
July	$1,225,100	$876,900	$348,200	118,600
Aug.	1,093,000	830,000	263,000	58,600
Sept.	1,279,900	898,700	381,200	69,700
Oct.	1,627,800	1,047,300	580,500	99,800
Nov.	1,565,400	1,006,500	558,900	11,500
Dec.	1,255,400	896,200	359,200	24,800
Jan.	822,600	720,900	101,700	20,800
Feb.	803,100	667,300	135,800	4,300
Mar.	1,270,600	915,800	354,800	82,500
Apr.	1,345,400	984,300	361,100	29,900
May	1,445,600	1,042,400	403,200	34,600
	$13,733,900	$9,886,300	$3.847,600	$513,500
Inc.	$22,141,300	$1,627,800	$513,500	....

Approximate gross earnings for June $1,465,300, and for two weeks ended July 14, $711,250, against $1,228,600, and $586,700, for same periods 1910.

The average mileage operated for the period ended May 31, was 3,354, against 3,168 for the same period 1909-10.

◆

C.P.R. Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases over 1909-10, from July 1, 1910 :

	Earnings.	Expenses.	Net Profits.	Net Increase or Decrease
July	$8,869,214.32	5,384,594.73	3,484,619.50	1,004,748.86+
Aug.	9,255,831.67	5,563,659.34	3,691,672.33	727,614.46+
Sept.	9,315,213.67	5,403,614.03	3,911,599.64	479,710.47+
Oct.	10,229,370.77	5,724,210.25	4,505,160.52	118,863.33+
Nov.	9,413,238.22	5,676,115.96	3,737,122.26	44,784.31+
Dec.	8,705,283.99	5,418,750.10	3,286,533.87	171,110.79−
Jan.	5,740,206.34	5,084,088.47	656,117.87	660,478.52−
Feb.	6,375,576.57	5,230,869.06	1,144,707.51	342,311.73−
Mar.	8,880,640.59	5,644,074.05	3,156,566.54	445,393.15+
Apr.	8,672,024 54	5,515,049,93	3,156,974.61	175,863 48+
May	9,312,057.17	6,367,972.41	2,944,084.76	387,820.61+
	$94,688,157.85	$61,012,998.33	$33,675,159.52	$2,553,119.21+
Inc.	$8,506,485.02	$9,953,365.81	$2,553,119.21	....

Approximate gross earnings for June $9,040,000, and for two weeks ended July 14, $4,266,000 against $8,404,000 and $3,950,000 for same periods 1910.

Commencing July 1, the mileage operated was increased to 10,462.

◆

Duluth, South Shore and Atlantic Ry.—Operating revenue for May, $262 615.28; expenses, $202,624.81; net revenue, $59 990.74, against $298,112.11 operating revenue; $223 999.76 expenses; $74 112.35 net revenue for May 1910. Aggregate operating revenue for 11 months ended May 31, $2,853,120.07; expenses $2,033,330.86; net revenue $799,789.21, against $2,999,166.48 aggregate operating revenue; $2 065,618.67 expenses; $933,547.81 net revenue for same period 1909-10. Approximate earnings for June, $291,206, and for week ended July 7, $67,856, against $301,887 and $63 162 for same periods 1910.

Mineral Range Road.—Operating revenue for May, $63 132.18; expenses $57,837.84; net revenue $4,394 34 against $63,899.54 operating revenue; $66 424 64 expenses; $2,525.10 net expenses for May, 1910. Aggregate operating revenue for 11 months ended May 31, $686,617.20; expenses $655 943.35; net revenue $30,673.85, against $763,762.09 aggregate operating revenue; $680,973.68 expenses; $82,788.41 net revenue for same period 1909-10. Approximate earnings for June, $60,287, and for week ended July 7, $12,901 against $65,278 and $11,116 for same periods 1910.

Minneapolis, St. Paul & Sault Ste Marie Ry.—Operating revenue for May, $1,075 621.59; expenses and taxes, $807,907.26; operating income, $267,624 33, against $1 196 049 50 operating revenue; $794,406.03 expenses and taxes; $401,643.47 operating income for May, 1910. Aggregate operating revenue for 11 months ended May 31, $12,034,211.11; expenses and taxes, $8,414 760.62; operating income, $3 619,450.49, against $14 068 812.18 aggregate operating revenue; $8 175 472.02 expenses and taxes; $5,893,340.16 operating income for same period 1909-10. Approximate earnings for June, $1 813 010, and for week ended July 7, $458,851, against $1,026,866 and $458,172 for same periods 1910.

Chicago Division.—Operating revenue for May, $700,057.92; expenses and taxes, $575,228 96; operating income, $124 828 96 against $798,060.82 operating revenue; $566,774.84 expenses and taxes; $231,285.98 operating income for May 1910. Aggregate operating revenue for 11 months ended May 31, $8 142 306.16; expenses and taxes $6,441 140.97; operating income $1,701 165.19 against $8,132,662.84 aggregate operating revenue; $5 680,835.93 expenses and taxes; $2 451,826.91 operating income for same period 1909-10.

Grand Trunk Ry. Earnings, Expenses, Etc.

The following figures show the earnings of the G.T.R., C.A.R., G.T. Western Ry., and D.G.H. and M. Ry., separately, for May, as compared with May, 1910:—

GRAND TRUNK RAILWAY.

	1911.	1910.
Earnings	$3,060,000	$2,850,200
Expenses	2,041,000	1,827,600
Net earnings	$1,019,000	$1,028,600

CANADA ATLANTIC RAILWAY.

	1911.	1910.
Earnings	$185,650	$176,600
Expenses	177,400	157,500
Net earnings	$8,250	$19,100

GRAND TRUNK WESTERN RY.

	1911.	1910.
Earnings	$528,300	$533,000
Expenses	485,200	445,100
Net earnings	$43,100	$87,900

DETROIT, GRAND HAVEN & MILWAUKEE RY.

	1911.	1910.
Earnings	$168,000	$165,900
Expenses	160,000	151,600
Net earnings	$8,000	$14,300

TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate from Jan. 1 to June 30:—

	1911.	1910.
Grand Trunk Ry.	£3,559,218	£3,318,809
Canada Atlantic Ry.	205.263	194.243
G.T. Western Ry.	656,543	642,384
D.G.H. & M. Ry.	206,581	195,843
Totals	£4,627,605	£4,351,279

◆

National Transcontinental Railway Shops at Transcona.

In our last issue general particulars were given of the shops, etc., to be erected at Transcona, near Winnipeg, for which the N.T.R. Commissioners invited tenders up to July 11. The following additional particulars are now available. The plans call for lumber sheds, scrap platform and storage bins, scrap-platform and machine shop, freight-car shop, planing mills, paint storehouse, coach paintshop, coach shops east and west, car-department office, and motive-power office, in addition to the indirect heating plant, the yard-crane runway, and sewer system. Contractors are asked to tender on the additions in bulk.

The freight-car shop will be 600 by 200 ft., with nine through tracks, having a capacity for 108 standard freight cars. In this building will be established a 20-ton electric traveling crane with a 5-ton auxiliary. The coach shop will be 115 by 260 ft. Along each side will be a balcony 16 ft. wide, with a light wall inclosing it from the floor of the balcony to the roof of the building. Material will be handled up to these balconies by large hoists, one at each corner of the building. The coach paint shop will be 87 by 340 ft., with a standing capacity for 16 standard coaches. The planing mill will be 100 by 300 ft., arranged so that standard cars of material can be run in at the east end and the material unloaded right at the machines.

The plans for the lumber shed call for a building 60 by 165 ft., and those for the wheel foundry show a building 70 by 150 ft., laid out on the straight-floor principle, with four floors for 25 wheels each, giving a capacity of 100 wheels a day. This building, like all others, can be extended when desired. There will be 32 annealing pits and 2 pitting cranes. The cupola room, core room, and charging floor will be at the north end of the building and equipped with pneumatic elevator scaleroom, pneumatic charging machine, blower, storage tracks, and all necessary details for operation. When the wheels leave the wheel foundry they will be taken to the wheel and machine shop, a building 70 by 160 ft. spanned by a 10-ton electric traveling crane.

The paint stores will be 30 by 40 ft., the scrap platform, constructed of wood, 30 by 300 ft., and the dry kiln 40 by 50 ft., divided lengthwise into two kilns. The coils for heating the kiln will be distributed on the concrete floor, which drains to a gutter. After the doors are shut the kilns will be controlled from a small cabinet at the west end, in which will be the steam and return control valves, lighting switches, and recording thermometers, the sensitive bulbs of which will be placed several feet along the wall inside the kilns. In this way after the kiln is closed a complete record of the process will be obtained in the control cabinet.

The motive power office building will be brick with a steel interior frame, 60 by 68 ft., with two stories and a basement for a large testing laboratory, lavatories, and storage. The ground floor will be for officials and clerks, with the drafting room, file room, and blue-printing room on the next floor. A vault will be carried up from basement to roof with vaults on each floor. The car-department office building will be similar to the motive power office building.

As there is no municipal sewer for drainage from the shops, a separate sewer system will be installed, and, as there is not sufficient fall from the shops to the Red River for a gravity flow sewer, a pumping station will be installed to force the sewage to the river. A gravity system of tile collecting pipes will run through the shops connecting with roof down spouts, sanitary sewers, and all drains. This sewer line will be arranged with manholes, surface drains, vents, etc., and discharge into a concrete sump, and will form the basement of the pumphouse. The next floor will carry the volute centrifugal pumps, of 15,000 gallons per minute capacity, with suction pipes running down into sump and shafts running up to the floor above, where the vertical shaft motors for driving the pumps will be located.

The details of the shop plant were developed, and the actual construction is to be carried out under the supervision of F. W. Walker, M.E., Superintendent of Terminal Shops for the N.T.R.

◆

The Quebec Bridge.

Work in connection with the rebuilding of the bridge across the St. Lawrence River at Quebec is being progressed with on both sides of the river. The work in progress is the demolition of the portion of the old substructure which is to be replaced. The caisson which was damaged last year, having been repaired, was recently put in position on the south shore and is being sunk into place, and it is expected to have it out of danger from ice during the winter. Caisson number two is being sunk at the site of the north main pier. Caisson number three was launched June 26, and is being sunk into position. Caisson number one is 180 ft. long by 55½ wide, 44 ft. high, and weighs with boilers and pumps 2,600 tons. The other two caissons are each 85 ft. long by 60 ft. wide and 55 ft. high. These are placed end to end and 10 ft. apart. The contractors expect to have the work well forward by the winter, and to have the substructure completed by the end of 1912.

◆

The C.P.R. has just completed the installation of a telephone train despatching system on its lines in New Brunswick.

The British Privy Council, London, Eng., gave judgment July 12 dismissing the appeal of E. A. Wallberg against the decision of the Supreme Court of Canada, in which $57,000 was awarded him for work done at the Intercolonial Ry. shops at Moncton, N.B., for which action was originally entered for $90,000.

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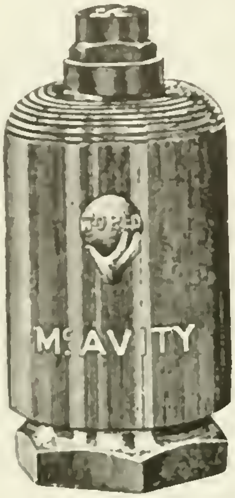
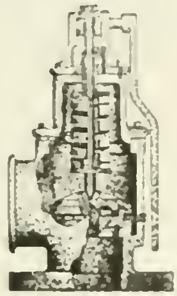
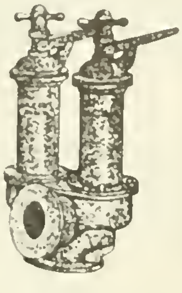


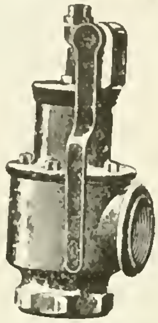
FLANGED BASE SECTIONAL VIEW



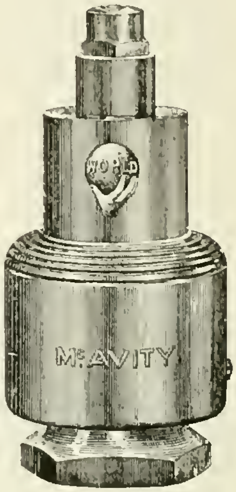
TWIN



SCREWED BASE



PLAIN



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Canadian Northern Ry. Construction, Etc.

Canadian Northern Quebec Ry.—We are advised that while the matter of the erection of shops at Limoilou, Que., has been under consideration for some time, no definite decision has been reached as to what will be done.

The matter of the company's terminals in Montreal is being widely talked of at present, owing to extensive purchases of land which have been made in the city, and between Montreal and the Back River by what is known at the Deayton-Shaw Syndicate. It is stated that these latter proposals will be developed for industrial plants along the route of the direct line of the C.N.Q.R. from Ottawa, and as sites for suburban residences. We are advised that it is proposed to obtain an entrance into the centre of the city by means of a tunnel under Mount Royal. The feasibility of this proposal is being investigated and plans are being prepared. So far as the laying out of terminals is concerned nothing has been decided, either as to whether the company will lay out terminals for itself or join with some other company, presumably the G.T.R.

Canadian Northern Ontario Ry.—The first section of the line from Toronto to Ottawa, viz., from Toronto to Trenton, 100 miles, has been completed with the exception of a few crossings of other lines, and it is expected to start a regular train service over it in August.

The Board of Railway Commissioners has approved the revised location of the line and station grounds in Belleville; of location of line through Camden tp., mileage 145.8 to 149 from Toronto, and near Yarker village, mileage 152.13 to 152.72 from Toronto, as well as for revised location between mileage 11.37 and 14 from Ottawa, and through two lots at mileage 50 from Ottawa.

Subcontracts are reported to have been let for grading between mileage 180 and mileage 200 from Toronto, by Ewen Mackenzie as follows:—P. W. MacLean, Brechin, 2.75 miles; P. Allan, Chaffee's Loch, half a mile; L. MacLean and R. MacIsaac, Brechin, 1.25 miles; D. J. O'Donnell, Toronto, A. O'Donnell, Beaverton, and S. Mackenzie, Toronto, four miles; Stewart and Hart, Portland, four miles; C. A. Cook, Brechin, four miles. Subcontracts are also reported let on other parts of the line:—McDonald and Chisholm, Hardman's Bridge to Rideau River; H. Christian, Rideau River at Hog's Back to Richmond; P. J. Brennan, from Richmond west to Smith's Falls.

The question of the location of the terminals in Ottawa is still unsettled, and it is said that nothing definite will be done in regard to them until some questions in connection with the route of the proposed Georgian Bay canal have been settled.

A contract has been let to the Northern Construction Co., and Foley Bros. for the construction of the line from Sellwood Jct. to Port Arthur, Ont., about 550 miles. This is the first section to be placed under contract of the line from Ottawa to Port Arthur, for the building of which the Dominion Parliament recently passed an act guaranteeing the company's bonds. The act also covers the building of a direct line from Ottawa to Montreal, which is already under construction by the Canadian Northern Quebec Ry., and a portion of the Canadian Northern Ontario Ry., already in operation in the vicinity of Sudbury. Work on the Sellwood Jct.-Port Arthur line is to be started at once, and the whole line is to be completed by the end of 1913.

After leaving the existing line at Sellwood Jct., the route follows the Vermillion River through a productive timber and mining district to its source, and then proceeds through a maze of lakes and rivers to the Hudson's Bay Co.'s Flying Post factory, and then enters what is known as the great clay belt of New Ontario. The route for about 250 miles is along the southern portion of this clay belt through a comparatively easy country for construction, and then works on to the southern shore of Lake Nipigon, reaching navigable water at Orient Bay. An abandoned outlet of the lake is followed to the present outlet at Cameron Falls, and then the route is laid out to the C.P.R., which is crossed near Nipigon station. The C.P.R. is paralleled into Port Arthur, and according to Port Arthur press reports the mileage between Nipigon and Port Arthur will be operated as a double track line jointly by the C.P.R. and the C.N.O.R. The route is laid out in the form of a wide curve crossing the height of land about 100 miles north of Lake Superior. The mileage through the territory north of the height of land is through well timbered country, from which considerable traffic will come, and as the land is cleared it will be open for settlement for agricultural purposes. The maximum gradient will be 6 ft. in the thousand against westbound traffic, and 5 ft. in the thousand against eastbound traffic. There will be a number of large viaducts and bridges along the line, with a good deal of rock work at the Nipigon, and a tunnel of 1,100 ft. at Lake Nipigon. The route followed will convey the line to the southeast of the Timagami forest reserve, and will be considerably to the south of the National Transcontinental Ry., gradually approaching it to the north of Long Lake, where the two lines will be about 20 miles apart. From this point the new line will run south to the south of Lake Nipigon, the N.T.R. going round the north end.

Plans and profiles of the route from mileage 280 to mileage 300 from Sudbury, in unsurveyed territory, have been deposited with the Registrar of Algoma at Sault Ste. Marie, Ont., and the Board of Railway Commissioners has approved location plans of the line in Nipigon, Lyon and Dorion tps., and through unsurveyed territory in Thunder Bay District, subject to certain conditions in connection with C.P.R. property.

Duluth, Winnipeg and Pacific Ry.—Contracts are reported to have been let to Bailey and Marsh, Minneapolis, Minn., for the erection of a 10-stall roundhouse, with machine shop, storehouse and office building at Duluth, Minn. (July, pg. 661.)

Canadian Northern Ry.—An extension of the Birds Hill branch to the beaches on the east side of Lake Winnipeg is under construction, grading work having been started July 4. General Manager McLeod stated that it had not been determined where the line would terminate, but it was not intended to carry it to Fort Alexander at present time.

Work has been started with a view of getting the Thunder Hill branch ready for traffic as far as sec. 36-34-6 this season, and it was stated by General Manager McLeod, July 11, that it was expected to have both the Thunder Hill line and the Rossburn extension ready for traffic as far as the main line this season.

The Hallboro branch, from Hallboro westerly to Beulah, Man., 75 miles, has been opened for traffic, and on the same day a train service was placed in operation on the Maryfield branch from Maryfield to Luxton, Sask., 68 miles.

A 10-stall roundhouse, with a machine shop and turntable, are under construction at Regina, Sask.

The company is laying heavier steel from Regina to Warman, Sask., on the old Qu'Appelle, Long Lake and Saskatchewan Ry.

Track is reported to have been laid on about 40 miles of the branch out of Delisle, Sask., and the remaining 10 miles was expected to be laid by the end of July.

The branch line from Vegerville, southerly in the direction of Calgary, has been opened for traffic to Munson, Alta. The Board of Railway Commissioners has directed the company to fence the right-of-way and provide farm gates along this line as far as track has been laid at once.

Plans for the entry of a branch line into MacLeod, Alta., came before the city council, June 30, and a preliminary agreement has been reached, under which the company will build its principal shops and headquarters for Southern Alberta there.

Revised location plans have been approved by the Board of Railway Commissioners through tps. 14-16, ranges 25-26, west of the 2nd meridian, Alta., mileage 70.81 to 84.25, and orders have also been issued authorizing the C.N. Alberta Ry. to join its tracks with those of the C.N. Western Ry. in sec. 33, tp. 54, range 2, west of the 5th meridian, Alta., approving of location plans from tp. 53, range 10.13, to tps. 53-52, ranges 18-23, both west of the 5th meridian, mileage 82.03 to 166.01, and approving revised location plans for the line through tp. 24, ranges 27-28, west of the 4th meridian, Alta., mileage 243.77 to 250.27.

General Manager McLeod, on his recent visit of inspection to the line being built to Athabasca Landing, Alta., stated that it was expected to have it completed this season.

Final location is reported to have been completed for the line to the boundary of British Columbia, which is reported to be under contract as far as Brule Lake, 74 miles west of Wolfe Creek, and it is said the grading gangs are working as far as 46 miles west of Wolfe Creek.

Surveys are reported to be in progress for a branch line from a point west of Edmonton into the Peace River country, E. M. Hill and J. P. McKenzie being in charge.

Canadian Northern Pacific Ry.—The 1,000 ft. wharf which is being built at Port Mann, B.C., is rapidly approaching completion. The low lying land along the river bank is being filled in, and a large area of land has been cleared. Track has been laid from the wharf to a junction with the Great Northern Ry. to facilitate the moving of construction material. This track will form a part of the yard tracks, for which the clearing is being done.

A considerable mileage of the grading for the line along the Fraser Valley has been completed and A. R. Mann, President, Northern Construction Co., the general contractors, made a trip of inspection over the route from Port Mann to Hope Summit, July 10. It is expected that track laying will be started at an early date.

Plans have been deposited with the Department of Public Works, Ottawa, showing location of proposed bridges over the Salmon and Sumas rivers in New Westminster district.

The 163 mile section of the line from Hope to Kamloops, B.C., for which a contract has been let to the Northern Construction Co., and Foley, Welch and Stewart, is about the heaviest piece of railway construction put under contract since the C.P.R. was built. This section of the line starts at Hope Summit, near mileage 70 from Port Mann, and keeps on the south bank of the Fraser River, the C.P.R. being on the north bank. The river and the C.P.R. are both crossed between Cisco and Lytton and the line continues to Kamloops north of the C.P.R., round Kamloops Lake, to the South Thompson River. This mileage covers the construction along the Fraser and Thompson River canyons, and in-

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cludes considerable bridge work and heavy rock work, there being two tunnels, one at Yale, 2,000 ft. long, and one at Battle Bluff on Kamloops, 2,740 ft. long. The line is located on a 0.4% gradient, compensated for curvature, and the sharpest curve is one of eight degrees.

The headquarters for the construction is at Vancouver, and A. R. Mann, President of the Northern Construction Co., is in charge. Subcontracts have been let as follows:—

Palmer Bros. and Hemming, Vancouver, Hope to Yale, 14 miles;

Burns and Jordan, Spokane, Wash., Yale east, 14 miles;

G. Chew, Spokane, 5½ miles;

Geo. Cunningham and Co., Greenwood, B.C., 5½ miles to Boston, Bar;

W. P. Tierney and Co., Vancouver, 11 miles;

A. E. Griffin and James Welch, 19 miles to Lytton;

Grant Smith and Co., Seattle, Lytton to Spences Bridge, 23 miles;

Twohy Bros., Portland, Ore., Spences Bridge east, 41 miles;

Grant Smith and Co., 30 miles to Kamloops.

The contractors are getting in their supplies and establishing camps, and it is expected that active operations will be started on construction early in Aug. Owing to the topography of the country some difficulty will be experienced in securing camp sites. A majority of these camps will be located on the C.P.R. or on the opposite side of the river, which will be spanned at frequent intervals by wire suspension bridges to facilitate the delivery of equipment and supplies. Two years is the period assigned for the completion of this big undertaking. The contractors state that they expect to have 7,000 men along the grade before Oct.

A party in charge of W. I. Bassett is revising the location between the headquarters of the North Thompson River and the Yellowhead Pass.

Canadian Northern Eastern Ry.—The line constructed as the Portland Canal Short Line Ry., and extending from Stewart to Ward's Pass, B.C., was opened for traffic, June 24. The name of the company was changed to the C.N.E. Ry. Co. last session of the British Columbia Legislature. Hon. W. Templeman, a member of the Dominion Government, in a speech after the opening of the line, said: "If they come to me for a guarantee of their bonds for the railway from Stewart to Edmonton I would have no hesitation whatever in supporting it. I am speaking for myself and not for the Dominion Government. I think the Dominion is more able to do this than the provincial. The Dominion Government has very little to do with the public directly. All we can do is to aid railway construction, build public wharves and give you telegraphic communications."

Vancouver Island.—T. G. Holt, Executive Agent, C.N.P.R., visited Victoria, B.C., July 2, and in an interview said it was almost certain that the balance of the main line mileage on Vancouver Island would be put under contract by the end of the year. Engineers were engaged in checking and finally laying the location line from Cowichan Lake west and northerly to the towns and canal at Alberni. As soon as this work was completed the engineers would start on the surveys northerly from Alberin to the ultimate terminal of the line at the north end of the island. As regards the terminals in Victoria, if satisfactory arrangements could be made as to the late Songhees Indian reserve, the company would prefer to have them located there. The line would certainly be taken into the city.

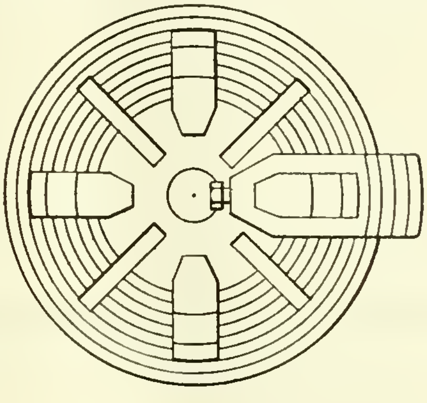
Satisfactory progress is being made on the first section out of Victoria, now under contract, and grading gangs are working as far out as Sarke Lake. F. G. Holt completed a trip of inspection as far as Sarke Harbor, July 10.

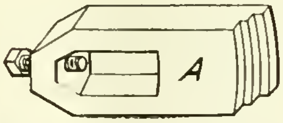
Wellington Colliery Co.—The approval of the British Columbia Government has been asked by the Canadian Collieries (Dunsmuir), Limited, for the carrying out of certain works on Puntledge River, by the Wellington Colliery Co. The company's works include a line of railway from near Fiddicks Jct. to Wellington, on Vancouver Island.

◆

Lathe Chuck Attachment.

The attachment shown in the accompanying illustration is in use at the C.P.R. Angus Shops, Montreal, and serves to increase the radius of usefulness of an ordinary lathe chuck of small dimensions. It consists of auxiliary jaws A that slip over the regular jaws and are held in place by set screws. The one shown is intended for holding piston rings or other hollow work that may be caught on the inside. It is evident, however, that a modification of the same arrangement having an overhang, may be applied, by which larger diameters may be chucked than would be possible with the regular chuck.—Railway Age Gazette.





◆

Canada's Great Expansion in Railway Construction.

The seventy-fifth anniversary of the completion of the first railway in Canada, viz., the Champlain and St. Lawrence Ry., extending from La Prairie, on the St. Lawrence River, to the Richelieu River, 16 miles, occurred on July 23 on this line the cars were drawn by horses during the first year of its operations. For eleven years this was the only railway in Canada, for it was not until 1847 that there was any increase. In that year 38 miles of line were added, and in 1850 an additional 12 miles were added, bringing the mileage up to 66 miles. From that date onward there was an annual increase, the mileage in 1855 having reached 1,414 miles, while in 1861 it had increased to 2,146. Since that year the new mileage brought into operation has gone on increasing, the figures for mileage in operation at the ten year periods following:—1871, 2,695 miles; 1881, 7,331 miles; 1891, 13,838 miles; 1901, 18,104 miles; 1911, 26,000 miles (estimated). The actual mileage in operation at June 30, 1910, the last date for which official figures are available, was 24,731 miles, and taking into consideration the rate of increase in mileage of recent years, when the figures for the year ended June 30 are made up, it will be found that the estimated mileage in operation of 26,000 is not very far out. These figures, however, do not include a considerable mileage of lines owned by collieries, logging companies, and other industrial concerns which are operated only for the company's own purposes. The present rate of increase in mileage, as it has been for some years past, has been proportionately greater in Canada than it has in any other country in the world, and from the contracts entered into, and the lines projected, it is likely that this state of affairs will be continued for some years to come.

There are over 2,000 miles of line in process of construction, and already this year contracts have been let for the building of over 2,000 miles additional, and contracts will shortly be let for the last 410 miles of the Grand Trunk Pacific Ry. The building of these lines means a vast capital expenditure spread over the next three years, and makes the Canadian railway construction field the most valuable market in the world for firms catering for that class of trade.

The total capital invested at June 30, 1910, was $1,410,297,687, of which $101,816,271 was invested during the financial year. The capital invested for the current year can hardly have been less than $125,000,000, and considering the amount of construction in progress and what is projected, it would appear that for some years to come Canada can look forward to the expenditure of about the same amount of money annually upon new construction. What this means to the country can scarcely be estimated. Within the last decade there have been developed in Canada the great steel rail making plants at Sydney, N.S., and Sault Ste. Marie, Ont.; a great locomotive building plant at Montreal, and the enlargement of the one at Kingston, Ont., and the car building plants in Montreal, to say nothing of the extensions of previously existing plants, and the erection of works for the manufacture of other supplies necessary for the building, equipment and operations of the lines.

The individual expansion of Canada is as yet in an early stage, and it is practically impossible to form any adequate idea to what extent it may have developed within the next half century. In 1861 there were 2,146 miles of railway in operation; in the half century that has since elapsed the mileage has increased twelvefold, while the industrial expansion of the country has been in proportion. Standing therefore at the beginning of the fourth period of 25 years, we find that Canada is in the forefront of the countries of the world in the matter of railway construction, and that with her increasing development, there is not likely to be any diminution in the rate of railway building for some years to come.

◆

Montreal-St. Lambert Tunnel.—Interest was revived in the proposals for the building of a tunnel under the St. Lawrence River at Montreal, by reports from that city, July 16, that considerable areas of land have been secured on the south shore and that a meeting of persons interested in the project was to be held in Montreal, July 26, for the purpose of discussing the project. It is said that D. McDonald and P. Dubee, of the Montreal St. Ry., and H. A. Dorsey, President, Dominion Park Co., and others have recently acquired considerable areas of land on the south shore of the St. Lawrence River, in St. Lambert, Victor and Longueuil, and that the project of connecting Montreal with the south shore is under consideration. It is said that in addition to the Montreal St. Ry., the Delaware and Hudson Ry. might also use the tunnel.

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National Transcontinental Railway.

The plans prepared under the direction of the Commissioners for the N.T.R. for the station building in Quebec have been approved by C. M. Hays, President, on behalf of the Grand Trunk Pacific Ry., and it is said that tenders will be asked for its construction at an early date. The building will be erected on the site of the old Champlain Market. The plans provide for a building 257 by 124 ft. It will be three stories high, surmounted by a cupola. The basement will be of concrete, and the upper part chiselled Deschambault granite. The ground floor will have a 17 ft. ceiling, and the other two stories will be 12 ft., while the rotunda under the cupola will be 63 ft. The layout of the train shed provide for the laying of six tracks at once, with the ultimate intention of laying five additional tracks. The building is expected to be completed by the end of 1912.

The Commissioners are receiving tenders to Aug. 3, for the erection of station and other buildings on the line as follows:—Seection 10, from Cochrane to Currie, Ont.; section 11, from Fraser to Grant, Ont.; section 12, from Superior to Dugald, Ont.

Tenders are also being received for the erection of a coaling station having a capacity of 1,000 tons, at Grant, Ont., mileage 232.7, District D.

GRAND TRUNK PACIFIC RAILWAY.

The Winnipeg City Council has refused to approve of a proposal of the G.T.P.R. to close 36 streets and lanes in Fort Rouge, along the right-of-way from Pembina Road to Oak Point Jct.

In connection with the proposed G.T.P. branch line into Brandon, Man., a plan has been submitted to the City Council showing an entry at the south east corner of the city boundary, passing north of the exhibition ground, and paralleling the Canadian Northern Ry. to a junction with the Brandon, Saskatchewan and Hudson Bay Ry., a Great Northern Ry. line.

The Board of Railway Commissioners has authorized the opening for traffic of the branch from Melville northerly to Canora, Sask., and of the Melville-Regina branch from Melville to Balcarres, Sask. The grading on this latter branch has been completed into Regina, and track laying is in progress. A bridge is under construction across Berry Creek, and this is expected to be completed in the fall. Work is to be started at once on the line from Regina to the International boundary, for which line the whole of the plans have been approved by the Board of Railway Commissioners. The line will terminate on the boundary in sec. 6, tp. 1, range 2, west of the second meridan. It is said that one of the Great Northern Ry. branch lines will be connected with this branch, and that G.N.R. trains will be operated over it into Regina. Grading is reported to be completed westerly from Regina, as far as Pasqua, in the direction of Moose Jaw.

The Board of Railway Commissioners has approved of location plans from mileage 20.3, at the east line of sec. 28, to mileage 40.01, at the west line of sec. 3, tp. 17, range 26, west of the second meridan, and also for a branch line from Moose Jaw, north westerly from the east line of sec. 36, tp. 16, range 27, to the west line of sec. 11, tp. 21, range 4, west of the third meridian, Sask., mileage 0 to 48.55.

The extension of the branch line from Young to Prince Albert, Sask., is expected to be completed this year. It will be 100 miles long, and 60 miles of track have been laid. Track laying is in progress on the remaining 40 miles.

From Biggar, Sask., a branch line is under construction to Battleford. Grading is reported to be practically completed and it is expected to have the track laid by Dec. 31.

The Board of Railway Commissioners has authorized the opening for traffic of the line from Biggar towards Calgary, mileage 0, to 19.97. A considerable mileage has been graded beyond this point, and tracklaying will be gone on with at an early date. It is intended that this line will effect a junction with the Tofield-Calgary branch, a few miles north of Calgary. Authority has been given by the Board of Railway Commissioners to run freight trains over this latter branch from Tofield to the crossing of the Red Deer River. This line is under construction to Calgary, but considerable difficulty is being experienced in obtaining a route, owing to the objections raised by the C.P.R. to the crossing of the irrigation ditches on its lands. The general route plan has been approved by the Board of Railway Commissioners, and the question of the crossing of the ditches was heard at a special session of the Board, July 18.

Route plans have been filed for a line from Calgary to Nanton and on to Lethbridge, Alta. Surveys are being made for an extension via Raymond to Coutts on the International boundary.

Grading on the main line west of Edmonton is reported to be well advanced as far as Tete Jaune Cache, to which point a contract has been let. Track has been laid to Athabasca River, 210 miles west of Edmonton, and less than 30 miles from Yellow Head Pass. The subcontractors are getting their plant on to the last 20 miles to be graded, and it is expected to have this completed by Dec. 31.

We are officially advised that tenders will be received to Aug. 15 for the building of the last portion of the main line, viz., the 410 miles intervening between Tete Jaune Cache to Aldermere, B.C.

A contract is reported to have been let to Foley, Welch and Stewart for a tunnel, about 0.25 mile in length, at mileage 44 from Prince Rupert, in order to avoid the construction of snowslides. The work is expected to be completed by Jan. 1, 1913.

We are advised that it is not proposed to do anything in the way of preparing plant, etc., on the company's projected dry-dock, shops and roundhouses at Prince Rupert until the agreement covering the tax assessment has been approved by the electors.

Collingwood Schreiber, Consulting Engineer to the Dominion Government, arrived in Vancouver, July 10, from Prince Rupert, B.C., having completed a trip of inspection over the coast section of the G.T.P.R. In an interview he is reported to have stated that owing to the decreasing mileage of railways under construction in the United States the contractors on the line had been enabled to secure practically all the men needed. The line was in operation for nearly 100 miles from Prince Rupert, and over 75% of the grading had been completed between Copper River and Hazleton. There had been some delay in the bridge work owing to high water in the river at Hazleton. It was expected that track would be laid to Hazleton by Dec. 31. From Hazleton to Aldermere the grading was well forward. (July, pg. 623.)

◆

The British Collieries (Brazeau), Ltd., has been incorporated under the Dominion Companies Act, with a capital of $5,000,000, and offices at Winnipeg, for the purpose of developing coal fields in the Brazeau River district of Alberta. The powers given include authority to build railways in connection with the collieries. The provisional directors are:—E. Brown, H. W. Hutchinson, D. C. Cameron, J. S. Hough, D. R. Dingwall, F. S. Harstone, Winnipeg; J. W. Hayward, M. J. Tobin, Vinton, Iowa.

Canadian Specifications for Classification.

Since the matter under this heading on pg. 707 went to press we have been furnished with the following additional information:—

CANADIAN NORTHERN RAILWAY.

43.—Excavation shall be classed under four heads, viz.:—Solid rock, loose rock, hard pan and earth; and shall be paid for according to the following definitions.

44.—All stones or boulders found in excavation measuring more than 27 cubic feet, and all solid quarry stone requiring blastings in order to remove it shall be termed solid rock.

45.—Loose rock shall include all kinds of shale rock, soap stone, and other rock which can be removed with pick and bar without blasting, also detached stones of less than one cubic yard and more than two cubic feet.

46.—Hard pan shall consist of all kinds of earth that are so hard that four horses on a plough cannot provide free shovelling or scraping material, or where powder has to be used to loosen.

47.—All other excavat'on of whatever kind shall be termed earth excavation.

The following alternative specifications are used by the C.N.R. for some contracts:—

43.—Excavations shall be classed under two heads, viz.:—Solid rock, and "all other materials"; and shall be paid for according to the following definitions.

44.—All stones or boulders found in excavation measuring more than 27 cubic feet, and all solid quarry stone requiring blastings in order to remove it shall be termed solid rock.

45, 46 and 47.—All other materials found in excavations other than solid rock as described in section 44 above, shall be termed "all other materials," and paid for at the schedule rate for "all other materials."

NATIONAL TRANSCONTINENTAL RAILWAY.

Grading will be commonly classified under the following heads: solid rock excavation, loose rock, and common excavation.

Solid rock excavation will include all rock found in ledges or masses of more than one cubic yard, which, in the judgment of the engineer, may be best removed by blasting.

All large stones and boulders measuring more than one cubic foot and less than one cubic yard, and all loose rock, whether in situ or otherwise, that may be removed by hand, pick or bar, all cemented gravel, indurated clay and other materials, that cannot, in the judgment of the engineer, be ploughed with a 10-in. grading plough, behind a team of six good horses, properly handled; and without the necessity of blasting, although blasting may be occasionally resorted to, shall be classified as loose rock.

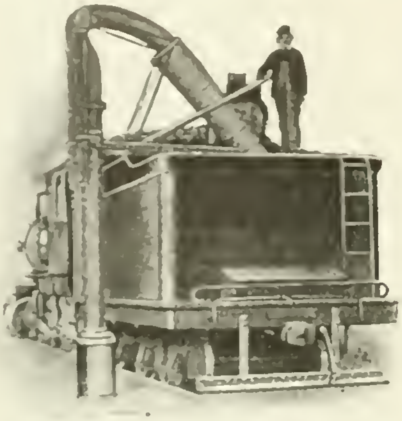
Common excavation will include all earth, free gravel or other material of any character whatever not classified as solid or loose rock.

◆

Scots in Canada.—J. Murray Gibbon, Advertising Agent in the C.P.R. European office, London, Eng., has written an interesting book, "Scots in Canada," in which he shows how large a place the sons of Scotland have had in the exploration and development of Canada. The book gives a lot of facts, historical incidents, and names, which are scarcely likely to be found in the more strictly historical books about Canada. One of the points emphasized in the book is the historic character of the C.P.R., showing how it has grown along the old trade route of the North West Company, and, most important of all, how five of the seven of the men who composed the original syndicate for building the line were Scotsmen.

Railroad Standpipes

Sheffield-Johnson, the Ideal Combination of Valve and Spout



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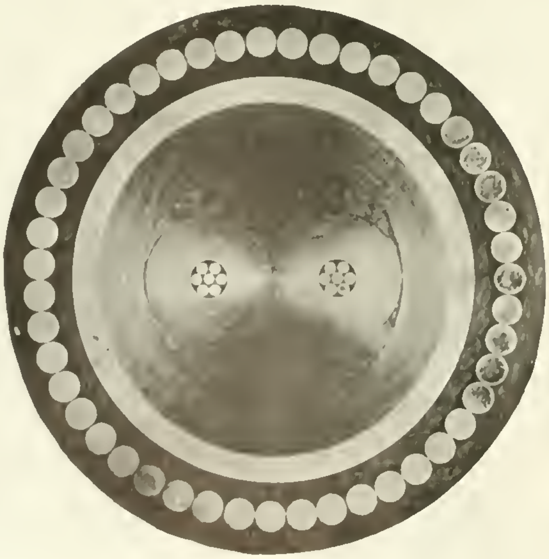

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Mechanical Stokers.

The American Railway Master Mechanics' committee on this subject presented the following report at the Atlantic City Convention recently:—

Your committee feels fully justified in expressing the opinion that such progress has been made in the development of mechanical stokers to warrant railways installing a limited number upon large locomotives at least, and thus lend their aid in the perfection of a device which your committee has concluded is a necessary appliance to heavy tractive-power locomotives, when such locomotives are called upon to exert their full capacity for a prolonged period.

The large locomotives at present being constructed would unquestionably render service nearer their maximum capacity if the firing were mechanical, and your committee is of the opinion that it behooves the members of this Association to participate actively by utilizing such stokers as have been developed, and, by actual application, assist in the solving of the many problems which must naturally present themselves during practical operation.

The benefits to be derived might properly be again referred to, viz.: Utilization of the maximum boiler capacity of locomotives; reduction of black smoke, because of the possibility of maintaining a thin, level fire; application of coal in more minute quantities; improved life of flues and fire boxes; the reduced labor required should make the positions of firemen more attractive, which will carry therewith obvious benefits to the railways.

The requirements for mechanical stokers, as recommended by your committee, in brief, are:—That they should be capable of firing coal in excess of the maximum requirements of the locomotive; that the fire-box door be free of any attachment which would prevent the fireman from giving such attention as fires may require; be entirely mechanical from tender to grate; be capable of handling bituminous run-of-mine coal, which will include a coal crusher, mechanically operated, on the tender; distribute the coal in the fire box in such a manner as to call for no assistance from the fireman other than regulation of supply and possibly the adjustment of the mechanical appliances for distribution; maintain an ideal fire for economic coal consumption without emission of black smoke in objectionable quantities; reliability of service.

The committee then briefly described the various mechanical stokers and concluded as follows:

This report does not include any tests comparing efficiency of mechanical stokers to hand firing, as your committee believes that mechanical stokers must be made flexible and reliable mechanics before any prospects of improved economy in fuel consumption may be expected.

Tests comparing inferior fuel used with mechanical stokers to regular supply for hand firing, thus taking advantage of difference in present fuel values, should not be accepted as proof of economy, as such relations would not maintain with the extension to any appreciable number of mechanical stokers.

The progress during the past year has been sufficiently marked to lead your committee to believe that it can present a final report at the next convention upon at least several of the stokers which have already been developed sufficiently to perform actual continuous service.

◆

The Salisbury and Albert Ry. has been closed down between Hillsboro and Albert, N.B., since May 1, and it is reported that it is likely to be closed down between Hillsboro and Salisbury as well.

Railway and Allied Associations, Clubs, Etc.

The names of persons given below are those of the secretaries.

Canadian Car Service Bureau, J. E. Duval, 401 St. Nicholas Building, Montreal.

Canadian Freight Association, T. Marshall, Union Station, Toronto.

Canadian Freight Association (Western Lines), W. E. Campbell, 101 Bon Accord Building, Winnipeg.

Canadian Railway Club, J. Powell, St. Lambert, Que. Meetings at Montreal 1st Tuesday each month, 8.30 p.m., except June, July and August.

Canadian Society of Civil Engineers, C. H. McLeod, 413 Dorchester St. west, Montreal.

Canadian Street Railway Association, Acton Burrows, 70 Bond Street, Toronto.

Canadian Ticket Agents Association, E. de la Hooke, London, Ont.

Central Railway and Engineering Club of Canada, C. L. Worth, 409 Union Station, Toronto. Meetings at Toronto 3rd Tuesday each month, except June, July and August.

Eastern Canadian Passenger Association, G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers Club of Montreal, C. M. Strange, 9 Beaver Hall Square, Montreal.

Engineers Club of Toronto, R. B. Wolsey, 94 King St. west, Toronto.

Quebec Transportation Club, J. S. Blanchet, Quebec.

Western Canada Railway Club, W. H. Rosevear, 52½ Princess St., Winnipeg. Meetings at Winnipeg 2nd Monday each month, except June, July and August.

◆

Railway Finance, Meetings, Etc.

Algoma Eastern Ry.—An issue of $2,500,000 first mortgage 5% bonds, redeemable in 50 years, is being made on the London, Eng., market. The principal and interest is guaranteed by the Lake Superior Corporation. The issue price was 93%.

Brockville, Westport and Northeastern Ry.—A receiver was appointed for the company's affairs July 13, on the application of the trustee for the bondholders. A majority of the bonds is said to be held by Mackenzie, Mann & Co. interests, which also hold the majority of the common stock. It was ordered that no sale of the property be made before Sept.

Dominion Atlantic Ry.—A special general meeting of shareholders was held in London, Eng., July 12, to increase the number of directors from three to five.

Dominion Atlantic Ry.—Gross earnings for May, $97,100, against $87,143 for May, 1910. Gross earnings for June, $112,700, against $108,412 for June, 1910. Aggregate gross earnings for 12 months ended June 30, $1,250,400, against $1,325,726 for same period 1909-10.

Imperial Coal Co.—An order has been made for the sale of the mining property of the Imperial Coal Co. at Beersville, N.B., in connection with the winding up of the company in liquidation. The property will be sold at Moncton, N.B., Aug. 30.

The railway now known as the North Shore Ry., was originally chartered as the Imperial Coal Co.'s Ry.; its name being subsequently changed to the Beersville Coal and Ry. Co., and later on to the North Shore Ry.

London and South Eastern Ry.—The annual meeting was held at London, Ont., July 4. Following are the officers and directors for the current year:—President, W. J. Reid; Vice President, T. H. Smallman; Secretary and Treasurer, J. W. Little; other directors, J. Labatt, J. A. Campbell, M. Masuret, and the mayor of London, ex-officio.

Maritime Coal, Ry. and Power Co.—The National Trust Co., Montreal, received to July 17 offers of bondholders to sell the company's first mortgage bonds in accordance with the terms of the trust deed as to the investment of the sinking fund.

Quebec and Lake St. John Ry.—The bondholders' protection committee has announced that in anticipation of legislative sanction of the agreement of Feb. 16 between the Q. & L. St. J.R., the Railway Share & Trust Agency Co., and the Canadian Northern Ry., the Q. & L. St. J.R. has undertaken to pay to the bondholders' committee, interest to July 1 on the new 4% debenture stock, to which the committee, as holders of deposited bonds, will be entitled in accordance with the agreement on exchange of securities, the payment to be deemed to have been made on account of arrears of interest due on the deposited bonds should the agreement not be sanctioned.

Total earnings for June, $60,979.03, against $54,295.83 for June, 1910. Aggregate total earnings for six months ended June 30, $271,516.32, against $267,370.67 for same period 1910. The average earnings per mile for June was $213.66, and for the six months period, $951.11, against $190.25 and $948.31 for the respective period in 1910.

Quebec Central Ry.—Gross earnings for May, $115,346.87; expenses, $74,557.51; net earnings, $40,789.36, against $99,393.54 gross earnings; $64,555.88 expenses; $34,837.66 net earnings for May, 1910. Aggregate gross earnings for 11 months ended May 31, $1,078,232.44; expenses, $734,913.14; net earnings, $343,319.30, against $984,834.34 aggregate gross earnings; $677,437.90 expenses; $307,396.44 net earnings for same period 1909-10.

Quebec Oriental Ry.—Notice is given that a call of $10 a share, payable Aug. 14, has been made upon the holders of 1,250 shares. E. S. Elvey, 194 Temple Chambers, Temple Ave., London, Eng., is Secretary of the company.

Temiscouata Ry.—Profit on operation for May, $6,618, against $5,732 for May, 1910. Aggregate profit for five months ended May 31, $13,582, against $15,378 for same period 1910.

◆

Control of Pere Marquette Railroad.

The fact that D. B. Hanna, Third Vice President of the Canadian Northern Railway, went over the Pere Marquette lines, both in Canada and the United States, recently, with W. Cotter, President and General Manager of the latter company, gave rise to a report that the Mackenzie Mann interests were about to acquire the P.M.R.

We do not think that any such deal is likely to be made, at all events not in the near future.

◆

Railway Route Maps Approved.

The Minister of Railways has approved of the following route maps:—

Grand Trunk Pacific Branch Lines Co. July 7. First 14 miles of Cutknife branch. 7th July, 1911.

Montreal and Southern Counties Ry. July 7. From Victoria Bridge, southerly and westerly, to the Country Club, 1¼ miles.

◆

The C.P.R. has offered prizes amounting to $750 for the best ten acres of alfalfa grown in 1912, open to all farmers in its irrigation block.

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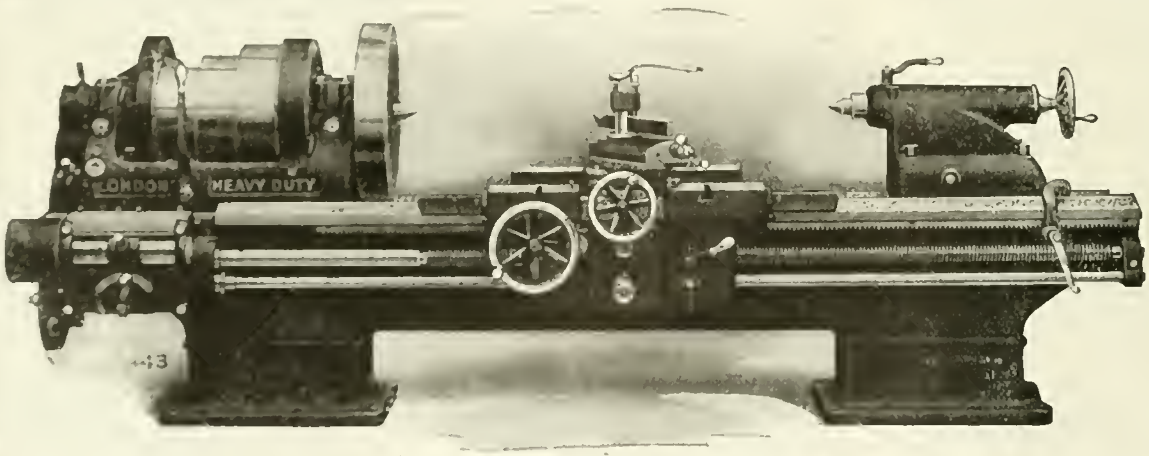

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Orders by the Railway Commissioners.

Beginning with June, 1904, we have published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the hearing took place and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the date assigned to them.

13949. June 14.—Approving Central Vermont Ry. bylaw appointing D. T. Lawrence, G.F.A., to issue tariffs of tolls.

13949. June 14.—Approving bylaw of Hamilton Radial Electric Ry. authorizing G. E. Waller, G.F. and P.A., to issue tariffs.

13950. June 14.—Authorizing C.N.O.R. to cross public road in Loughborough tp.

13951. June 13.—Authorizing C.P.R. to build spur from its 8th Ave. spur in Regina, Sask.

13952, 13953. June 14. — Authorizing C.N.O.R. to cross three highways and to cross and divert highway in South Crosby and South Elmsley tps.

13954. June 12.—Approving Kettle Valley Ry. location from mileage 35.3 to 45.6 north of Midway B.C.

13955. June 12.—Approving deviation of Kettle Valley Ry. location between Westbridge and Wolverine Creek, B.C.

13956. May 22.—Authorizing G.T.P. Branch Lines Co. to cross highway on its Prince Albert Branch in n.w. ¼ sec. 4, tp. 43, r. 26, w. 2 m., Sask.

13957. June 12.—Authorizing C.P.R. to divert main line and cross four highways at Winnipeg Beach, Man.

13958. June 14.—Authorizing C.P.R. to build bridge 18.7 on its St. Gabriel subdivision, District 3, Eastern Division.

13959. June 15.—Authorizing C.N.R. to cross William St., Smiths Falls, Ont.

13960. June 14.—Approving drainage work to be built under G.T.R. in Woolwich tp., Ont.

13961. June 15.—Authorizing C.P.R. to build its Kipp to Aldersyde branch across two highways and divert same.

13962. June 15.—Authorizing C.P.R. to cross with its Weyburn-Lethbridge branch 22 highways in Saskatchewan and Alberta.

13963. June 15.—Authorizing C.P.R. to build its Kipp to Aldersyde branch across 47 highways in Alberta.

13964. June 15.—Approving Wells Fargo and Co. bylaw authorizing J. D. Ludlow and G. S. Lee to issue tariffs of tolls.

13965, 13966. June 15.—Authorizing G.T.R. to use eight bridges on its Ottawa Division.

13967. May 9.—Authorizing C.N.R. to cross with its Hallboro branch 11 highways in Manitoba.

13968. Mar. 28.—Approving location of C.P.R. Hamiota to Birtle branch from sec. 7, tp. 14, r. 23, northwesterly for 32.67 miles, to sec. 12, tp. 17 r. 12, w. p.m., Man.

13969. June 19.—Approving revised location of C.N.R. through tps. 14-16, rs. 25-26, w. 2 m., Sask., mileage 40.81 to 84.25.

13970. June 19.—Approving C.P.R. bylaw authorizing G. M. Bosworth, V.P., W. R. MacInnes, F.T.M., W. B. Bulling, A.F.T.M., Eastern Lines; W. B. Lanigan, A.F.T.M., Western Lines, and C. E. E. Ussher, P.T.M. to prepare and issue tariffs of tolls.

13971. June 19.—Authorizing C.P.R. to build under highway in cons. 4 and 5, Ops tp., Ont.

13972. June 19.—Authorizing C.N.O.R. to cross public road in lot 10, con. 5, and lot 10, con. 6, Nepean tp.

13973, 13974. June 19.—Authorizing G.T.P. Branch Lines Co. to cross with its Regina-Boundary branch, 27 highways between mileage 59 and 90, and five highways on its Prince Albert branch.

13975. June 19.—Authorizing city of Revelstoke, B.C., to erect wires across C.P.R. at Wales St.

13976. June 19.—Authorizing Seymour Power and Electric Co. to erect wires across C.P.R. wires in Hamilton tp., Ont.

13977. June 6.—Rescinding order 8111, Sept. 15, 1909, Board having no jurisdiction re length of section on Boissevain and Minto sections of Brandon, Saskatchewan and Hudson Bay Ry., and re increasing staff of sectionmen.

13978. June 19.—Approving revised location of C.N.O.R. at Fallowfield, Nepean tp., mileage 11.37 to 14 from Ottawa.

13979. June 19.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to build bridge 42.6 on south half of lot 8, con. 1, Mara tp., Ont.

13980. June 19.—Ordering G.T.R. within 90 days to install improved type of electric bell at Diltz Rd. crossing, Halton tp., Ont.

13981. June 19.—Approving location of G.T.R. station at Ash, Trafalgar tp., Ont.

13982. June 19.—Authorizing C.P.R. to cross with its Weyburn-Lethbridge branch four highways in Alberta.

13983. June 19.—Approving location of C.P.R. station at Colonsay Sask.

13984. June 12.—Approving revised location of C.N.O.R. through tp. 24, rs. 27-28, w. 4 m., Alta., mileage 243.77 to 246.26, and 246.57 to 250.27.

13985. June 14.—Dismissing application of residents of St. Stanislas, St. Prosper, and St. Severin de Proulxville parishes, Que., re alleged inadequate train service of C.N.Q.R.

13986. June 13.—Authorizing G.T.P. Branch Lines Co. to build spur to Dobell Coal Co.'s premises in sec. 35, tp. 50, r. 19, w. 4 m., Alta.

13987. June 12.—Authorizing G.T.P. Branch Lines Co. to divert roads in secs. 1, 2, 9 and 10, tp. 21, r. 13 w. 2 m., Sask.

13988. June 6.—Ordering V.V. and E. Ry. within 30 days, to build suitable culvert, sewer and drain under its line from Front St. to False Creek, Vancouver, B.C.

13989. June 12.—Authorizing C.P.R. to build spur to Moose Nose ballast pit across road allowance, in Springfield municipality, Man.

13990. June 12.—Authorizing G.T.P. Branch Line Co. to cross highway on its Prince Albert Branch, mileage 105, Hudson's Bay Co.'s Reserve, Sask.

13991. June 6.—Approving location of part of C.N.O.R. Sudbury-Port Arthur line through Nipigon, Lyon and Dorion tps. and unsurveyed territory Thunder Bay District, subject to certain conditions in connection with C.P.R. property.

13992. June 12.—Authorizing G.T.P. Branch Line Co. to close and divert road on its Yorkton branch, mileage 16.9, Sask.

13993. June 12.—Approving part of location of Lachine, Jacques Cartier and Maisonneuve Ry., subject to certain conditions with regard to streets, etc., in Montreal.

13994. June 12.—Authorizing Toronto and Eastern Ry. to cross public road at mileage 15.3, Oshawa, Ont.

13995. June 19.—Authorizing C.P.R. to build spur into Cranbrook Jobbers' premises, Cranbrook, B.C.

13996. June 19.—Authorizing C.P.R. to build spur to Maple Creek Light, Power and Milling Co.'s premises, Sask.

13997. June 19.—Authorizing C.N.R. to divert road on its Moose Jaw southeasterly line.

13998 to 14001. June 19-21.—Authorizing G.T.P. Branch Lines Co. to cross with its Regina-Moose JaJw branch seven highways; with its Prince Albert branch highways between secs. 20 and 29, and with its Battleford branch, 17 highways, in Saskatchewan, and with its Biggar-Calgary branch, 12 highways, in Alberta.

14002. June 20.—Approving G.T.P. Branch Lines Co. location of Moose Jaw northwest branch from east line of sec. 36, tp. 16, r. 27, to west line of sec. 16, tp. 19 r. 29, w. 2 m., mileage 0 to 24.43, Sask.

14003, 14004. June 20.—Authorizing G.T.P. Branch Lines Co. to cross with its Regina-Moose Jaw branch seven highways, and with its Moose Jaw northwest branch 19 highways in Saskatchewan.

14005. June 20.—Approving location of G.T.P. Branch Lines Co. Moose Jaw northwest branch from east line of sec. 17, tp. 19, r. 29, w. 2 m., to west line of sec. 11, tp. 21, r. 4, w. 3 m., mileage 24.43-48.55, Sask.

14006 to 14011. June 20. — Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to cross and close certain streets in Lindsay, and to cross road allowance in Manvers, Ops and Cavan tps., and King St., Bethany, Ont.

14012 to 14015. June 20.—Approving location of C.P.R. stations at Duval, Boharm, Pilot Butte, and Leslie, Sask.

14016. June 20.—Approving location of C.P.R. Swift Current to Brooks branch from sec. 3, tp. 20, r. 19, w. 3 m., at mileage 40 to sec. 7, tp. 22, r. 24, w. 3 m., at mileage 78, Sask.

14017. June 20.—Approving revised location of C.P.R. Lacombe easterly branch in sec. 26, tp. 37, r. 14, at mileage 85.77, to sec. 2 tp. 35, r. 5, w. 4 m., at mileage 147, Alta.

14018. June 20.—Approving C.N.O.R. location through Camden tp., mileage 145.82 to 149, from Toronto.

14019. June 20.—Authorizing Kettle River Valley Ry. to divert road northwest of Midway, B.C.

14020. June 21.—Ordering C.N.R. to build bridge over Serviceberry Creek, Alta., before July 8, under penalty of $25 a day.

14021. June 21.—Authorizing G.T.R. and Hamilton St. Ry. to operate over interlocking plant at crossing of King St. on G.T.R. Port Dover branch, Hamilton, Ont., speed not to exceed 10 miles an hour.

14022. June 21.—Approving revised location of V.V. and E. Ry., being part of section from east line of sec. 15, tp. 16, to west line of tp. 26, from mileage 6 to a connection with C.N. Pacific Ry. at mileage 13.3, New Westminster District B.C.

14023 to 14026. June 21.—Authorizing Kettle Valley Ry. to cross four highways and divert one northwest of Midway, B.C.

14027. May 30.—Approving plan of C.N.R. and C.P.R. joint station at Regina, Sask.

14028. June 21.—Authorizing C.P.R. to build spur to ballast pit across Government St., Dryden, Ont.

14029. June 21.—Approving revised location of C.P.R. main line from mileage 0, on B.C. Southern Ry. south of Wardner, to north of Fort Steele and northerly at mileage 35.7, Kootenay District, B.C.

14030. Apr. 1.—Authorizing C.P.R. to cross C.N.R. Beulah to Rapid City branch at mileage 9.3 from Hamiota, interlocker to be installed.

14031. June 21.—Authorizing C.P.R. to use bridges 33.3 and 34.4 on Schreiber Subdivision, Lake Superior Division.

14032. June 20.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to cross six highways in Manvers tp., Ont.

14033. June 21.—Approving location of portion of C.P.R. branch from Swift Current to Brooks, Sask., for 40 miles from main line.

14034. June 21.—Authorizing C.P.R. to build spur into premises of Cameron and Heaps and Peart Bros., Regina, Sask.

14035. June 20.—Authorizing C.P.R. to cross with its Kipp to Aldersyde branch, highway crossing at mileage 59.41, Alta.

14036 June 19. — Authorizing Kootenay Central Ry. (C.P.R.) to cross and divert highways and crossing of B.C. Southern Ry.

14037. June 12.—Authorizing C.N. Alberta Ry. to join C.N. Western Ry. in sec. 33, tp. 54, r. 2, w. 5 m., Alta.

14038, 14039. June 16.—Authorizing C.N.R. to cross with its Moose Jaw southeasterly line 26 highways in Saskatchewan.

14040, 14041. June 21, 19.—Authorizing G.T.R. to use bridges 50 and 1, at Holland Ave. and Preston St., Ottawa, Ont.

14042. June 21.—Authorizing G.T.P. Branch Lines Co. to cross with its Moose Jaw northwest branch, highway at mileage 25.9 Sask.

14043. June 21.—Authorizing G.T.P.R. to cross highway and divert same in s.w. ¼ sec. 27, tp. 22, r. 6, w. 2 m., Sask.

14044. June 21.—Approving location of G.T.P. Branch Lines Co. Regina-Moose Jaw branch from east line of sec. 28 to west line of sec. 30, tp. 17, r. 23, w. 2 m., mileage 20.3 to 23.32, Sask.

14045. June 21.—Authorizing G.T.P. Branch Lines Co. to cross with its Calgary Branch eight highways in Alberta.

14046. June 12.—Approving location of G.T.P. Branch Lines Co.'s Regina-Boundary branch from east line of sec. 32, tp. 3, r. 4, to International boundary, sec. 6, tp. 1, r. 2, w. 2 m. Sask.

14047. June 23.—Authorizing C.N.R. to open for traffic its line from Maryfield to Luxton, 68 miles.

14048. May 23.—Dismissing application of city of Toronto for order varying order 10169, Dec. 8, 1909, re Sunnyside and Keele St.

14049. June 21.—Approving C.N.O.R. location near Yarker, Camden tp., mileage 152.13 to 152.72, from Toronto.

14050, 14051. June 21.—Approving agreements between Bell Telephone Co. and La Compagnie de Telephone de St. Ours, and Howick Telephone Co. for interchange of business.

14052. June 23.—Authorizing South Ontario Pacific Ry. to take G.T.R. lands in Flamboro tp., Ont.

14053. June 21.—Authorizing G.T.P. Branch Lines Co. to open for freight traffic its Yorkton branch from Melville to Canora, Sask.

14054. June 21.—Approving G.T.P. Branch Lines Co. Biggar-Calgary branch from s.e. ¼ sec. 1, tp. 36, r. 15, to south line of sec. 31, tp. 34, r. 17 w. 3 m., mileage 0 to 19.97, Saskatoon District, Sask.

14055, 14056. June 26.—Approving Kootenay and Alberta Ry. standard plan of overhead bridges and bridges over Mill Creek and Lang's Coulee, Alta.

14057. June 23.—Approving C.N. Alberta Ry. location through tp. 53, r. 10-13, w. 5 m., mileage 82.03 to 101.79.

14058. June 24.—Authorizing C.N.R. to cross seven highways in Antler municipality, Sask.

14059. June 23.—Approving C.N. Alberta Ry. location through tps. 53 and 52, rs. 14-18, w. 5 m., mileage 101.79 to 133.23.

14060. June 23.—Authorizing C.N. Alberta Ry. to cross public road with its St. Albert westerly line.

14061. June 23.—Approving location of C.N. Alberta Ry. through tps. 53-52, rs.

(*Continued on pg. 755.*)

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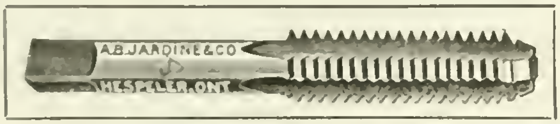

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Toronto, Canada, August, 1911.

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GENERAL SALES AGENTS

(*Continued from pg.* 751.)

18-23, w. 5 m., mileage 133.23 to 166.01.

14062, 14063. June 24, 21.—Authorizing C.N.R. to cross 29 highways in Saskatchewan.

14064. June 21.—Authorizing Toronto Eastern Ry. to cross three highways in Whitby tp., Ont.

14065. June 23.—Approving Eastern British Columbia Ry. local freight and passenger tariffs C.R.C. 16 and 3, pending enquiry into B.C. rates generally.

14066. June 24.—Authorizing T.H. and B. Ry. to install block signals between Hamilton and Vinemount, Ont.

14067. June 19.—Authorizing Algoma Eastern Ry. to build spur to Spanish River Pulp and Paper Co.'s mills, Espanola, Ont.

14068. June 23.—Authorizing G.T.P. Branch Lines Co. to open for freight traffic portion of its Tofield-Calgary branch from Tofield to Red Deer River crossing, Alta.

14069 to 14071. June 23, 24.—Authorizing G.T.P. Branch Lines Co. to cross certain highways in Saskatchewan and cross and divert eight highways on its Regina Boundary branch, and three highways on its Calgary branch.

14072. June 23.—Authorizing C.P.R. to build spur for Canadian Gate Co., Guelph, Ont.

14073 to 14075. June 23.—Authorizing C.P.R. to use bridges 0.3, 34.0, 37.9, 3.4, 66.6 and 68.0 on its St. Guillaume, Drummondville and Megantic subdivisions.

14076 14077. June 23.—Authorizing Kootenay Central Ry. (C.P.R.) to cross with its main line, highway at mileage 23.42, Fort Steele, and approving portion of location of main line from lot 46, at mileage 62.54 northerly to Shuswap Indian Reserve, north of Athalmar townsite, B.C.

14078. June 7.—Rescinding order 13813, June 1, re tunnel under C.P.R. at St. Lawrence Boulevard, Montreal, and extending time for completion to Sept. 15.

14079. June 7.—Approving plan B for subway at Brock Ave., Toronto, cost to be assessed as follows:—$5,000 from grade crossing fund, 20% of remainder to be paid by Toronto, 32% by C.P.R. and 48% by G.T.R.

14080. June 23.—Approving New Westminster Southern Ry. Standard Freight Tariff C.R.C. 796, pending inquiry into B.C. rates generally.

14081. May 30.—Authorizing C.P.R. to build subway at Jane St. York tp., according to amended plan, and rescinding order 12622, Dec. 12, 1910, $5,000 to be paid from grade crossing fund.

14082. June 27.—Authorizing C.P.R. to build spur for Brandon Pressed Brick and Tile Co., Trafalgar tp., Ont.

14083. June 9.—Authorizing town of Shawinigan Falls, Que., to build subway under C.N.Q.R. on Station Ave., $5,000 to be paid from grade crossing fund.

14084. June 23.—Approving highway diversion of G.T.P.R. between secs. 4 and 5, tp. 25 N., r. 10, w. 2 m., Sask.

14085. June 24.—Authorizing B.C. Southern Ry. (C.P.R.) to build spur for East Kootenay Lumber Co., East Kootenay District, B.C.

14086. June 26.—Authorizing C.P.R. to build spur for Lethbridge-Weyburn Realty Co., Alta.

14087, 14088. June 26.—Authorizing C.P.R to cross with its Regina, Saskatoon and North Saskatchewan branch, 46 highways in Saskatchewan, and with its Kininvie branch, 34 highways in Alberta.

14089. June 24.—Approving location and detail plans of G.T.P.R. station at West Winnipeg, parish lots 17-22, Headingly, Man.

14090, 14091. June 24, 26.—Authorizing C.N.R. to open for traffic its line from Hallboro to Beulah, 75 miles, and authorizing crossing of 50 highways on same.

14092. June 26.—Authorizing C.N. Alberta Ry. to cross 85 highways.

14093. June 28.—Approving plans for terrace or covering over C.P.R. and Hull Electric Ry. adjacent to Chateau Laurier Hotel, Ottawa.

14094. June 15.—Authorizing C.N.R. to build spur for Arctic Ice Co., St. Vital, Man.

14095, 14096. June 27.—Authorizing C.N.R. to cross two public roads on its Rossburn branch, Sask.

14097. June 20.—Authorizing Niagara St. Catharines and Toronto Ry. to build spur for Electric City Athletic Association, Ltd., Niagara Falls, Ont.

14098. June 27.—Authorizing C.P.R. to build spur for St. Lawrence Flour Mills Co., Montreal.

14099. June 15.—Authorizing C.P.R. to build third track across Keewatin St., Winnipeg.

14100. June 21. — Authorizing G.T.P. Branch Lines Co. to build overhead crossing on its Calgary branch.

14101. June 15.—Ordering C.N.R. to provide ballast for raising grade of yard and to build third spur for John Arbuthnot Lumber Co., Winnipeg.

14102. June 27.—Ordering C.P.R. to build subway for J. Hextall, Calgary, Alta., in sec. 34, tp. 24, r. 2, w. 5 m.

14103. June 15.—Authorizing city of St. Boniface, Man., to build Plessis St. across C.P.R. Emerson branch.

14104. June 15.—Ordering C.N.R. to repair diamond and crossing at Tache Ave., St. Boniface, Man., within 30 days, also declaring that ambulance and street cars have right of way over switching movements, under penalty of $10 for each default.

14105. June 15.—Dismissing complaint of MacPherson Fruit Co., Winnipeg, re alleged overcharge by Dominion Ex. Co. on shipment of strawberries from Burlington, Ont., to Winnipeg and Brandon, Man.

14106. June 14.—Rescinding order 13119, Feb. 24, re C.N.R spur on blocks 17, 18, 61, 62, 63, 64 from Russell to Fifth St., between Van Horne and College Aves., Brandon, Man.

14107. June 14.—Ordering Brandon, Saskatchewan and Hudson's Bay Ry. (G.N.R.) to build transfer track to connect with C.N.R. and C.P.R., on application of city of Brandon, Man.

14108. June 26.—Approving Quebec Ry., Light, Heat and Power Co.'s bylaw authorizing C. E. A. Carr, General Manager, or J. A. Everell, Superintendent, to prepare and issue tariffs of tolls.

14109. June 27.—Ordering C.N.R to fence its right of way and erect farm gates on its Calgary-Vegreville branch, upon which rails have been laid, before Aug. 1, under penalty of $100 a day.

14110. June 28.—Authorizing Quebec Ry., Light and Power Co. to build across Cote de Courville Road, Montmorency, Que.

14111. June 28.—Approving location and plans for G.T.R. passenger station and restaurant at Cobourg, Ont..

14112. June 28.—Approving Vancouver, Fraser Valley and Southern Ry. Standard Freight Tariff C.R.C. 1.

14113. June 29.—Ordering that B.C. Electric Ry. be made party to application re protection by C.P.R. of street crossings in Vancouver.

14114. June 22.—Ordering C.P.R. to furnish certain information to Vancouver Board of Trade within 30 days, in connection with segregating annual return.

14115. June 22.—General order re boiler inspection, testing, etc.

14116. June 30.—Authorizing C.P.R. to cross five streets in Perth, Ont.

14117. June 29. — Authorizing G.T.P. Branch Lines Co. to cross with its Regina-Boundary branch, highway in Enniskillen, Sask.

14118. June 15. — Authorizing G.T.P. Branch Lines Co. to open for freight traffic its Melville-Regina branch from Melville to Balcarres, Sask.

14119. June 30.—Authorizing G.T.P.R. to erect station at Pacific Jct., block 25, s.d. parish lots 32-34. St. Charles, Man.

14120 to 14124. June 30. — Authorizing G.T.P. Branch Lines Co. to erect 14 stations. to divert road on its Prince Albert branch, Saskatchewan, to cross and divert 12 highways in Alberta, to divert one in Manitoba, and to build bridge over Elbow River at mileage 200.7.

14125. June 29.—Approving location of G.T.P. Branch Lines Co. Regina-Moose Jaw branch from sec. 25, tp. 17, r. 24, to sec. 3. tp. 17, r. 26, w. 2 m., mileage 23.32 to 40.01, Sask.

14126, 14127. June 30, 28.—Authorizing G.T.P. Branch Lines Co. to cross with its Moose Jaw Northwest branch, 23 highways, and cross and divert four highways in Saskatchewan.

14128. June 29.—Authorizing G.T.R. to cross with four additional tracks, McKinstry, Dickson. Hillyard, Niagara and Wentworth Sts., Hamilton, Ont.

14129. June 29.—Authorizing G.T.R. to build spur for Dominion Sewer Pipe Co. at Waterdown Station, Ont.

14130. June 29.—Authorizing G.T.R. to use bridges 155, 157, 158 and 159 on its Eastern Division, and bridge at mileage 289.83.

14131. June 28.—Ordering C.N.R. to do certain cleaning of ditches and yards at Emo, Ont., within 30 days, under penalty of $25.

14132 to 14134. June 29, 30.—Authorizing C.N., Alberta Ry. to build its St. Albert Westerly line across nine highways in Alberta.

14135 to 14140. June 29. — Authorizing C.N.O.R. to cross four highways in Montague tp.; to cross public road in Nepean and Gloucester tps.; approving revised location at Otter Creek, in lots 1 and 2, con. 1, Bastard tp., and lots 26 and 27, con. 1, South Elmsley tp., mileage 50 from Ottawa; authorizing the crossing of public road in Camden tp., and approving revised location of line and station grounds in Belleville.

14141. June 29.—Authorizing C.N.R. to cross with its Crooked Lake branch, six highways in Saskatchewan.

14142. June 28.—Extending to Oct. 31 time for installation of interlocker by C.N.O.R. at G.T.R. crossing, Cobourg.

14143. June 30.—Authorizing C.P.R. to build road diversion in Manvers tp., Ont.

14144. June 29.—Approving detail plans of C.P.R. station at Lacombe, Alta.

14145. June 28.—Authorizing C.P.R. to build additional track across road allowance between secs. 29 and 30, tp. 9, r. 22, w. 4 m.

14146. June 29.—Authorizing C.P.R. to build two Y's across Government road at Yahk station, B.C.

14147, 14148. June 29.—Authorizing C.P.R to build bridge 37.3 on its mountain subdivision and to build bridge over Kaministikura River at Fort William, Ont.

14149 to 14151. June 28.—Authorizing Algoma Eastern Ry. to cross under aerial tramway at mileage 24.25, and to cross highway at lot 3, con. 3, Drury tp., mileage 28.45, and approving location from mileage 21 to 46.75, Ont.

14152. June 29.—Approving detail plan of G.N.R. station at Otter, B.C.

14153. June 29.—Authorizing Dominion Atlantic Ry. to build bridge over Moose River, N.S.

14154. June 29.—Authorizing B.C. Government to build level crossing on lot 265, group 1, Similkameen Division, Yale District.

14155. June 29.—Ordering C.P.R. to build highway crossing in Barons, Alta.

14156. June 28.—Authorizing city of Toronto to rebuild bridge over C.P.R. at Weston Road.

14157, 14158. June 28, 29. — Authorizing Quebec Ry., Light and Power Co. to open for traffic eastbound track from its junction with main line near Beauport station to Montmorency Falls Park, 3.4 miles, and to build a double-track span over culvert at Beauport.

14159. June 15.—Ordering C.N.R. to raise its track on River Ave., Main St. and Belle Ave., Winnipeg, by Sept., 1912, 20 to be paid from the railway grade crossing fund, 30% of remainder by C.N.R., 30% by city of Winnipeg, 30% by city of St. Boniface, and 10% by Winnipeg Electric Ry.

14160. June 28.—Authorizing C.N.O.R. to build bridge over Napanee River at Yarker, mileage 153.44 from Toronto.

14161. 14162. June 30.—Authorizing C.N.R. to build across highways on its Vegreville-Calgary branch, Alta.

14163. June 28.—Approving Brandon, Saskatchewan and Hudson's Bay Ry. bylaw 8, authorizing H. A. Jackson, A.T.M., St. Paul, Minn., to prepare and issue tariffs of tolls.

14164. June 24.—Authorizing G.T.R. to build overhead bridge at Queen St., Palmerston, Ont., in lieu of subway.

14165. June 20.—Approving C.P.R. clearance plan of overhead structure at Weston Road, Toronto.

14166. June 28.—Authorizing G.T.P. Branch Lines Co. to divert road on its Prince Albert branch, Sask.

14167. July 6.—Authorizing C.N.R. to open for traffic its Vegreville extension from mileage 0 to 162.

14168. July 6.—Authorizing G.T.P. Branch Lines Co. and C.P.R. to operate trains over interlocking plant at Camrose, Alta., without stopping.

14169. June 30.—Approving location of C.P.R. Swift Current southeasterly branch from main line in sec. 30, tp. 15, r. 13, near Swift Current, 40 miles, to sec. 19, tp. 11, r. 10, w. 3 m., Sask.

14170. June 12.—Ordering that C.P.R. provide at Montfort Jct. a platform 250 ft. long, commencing at the diamond, work to be completed by Aug. 1, 1911, C.P.R. and C.N.R. to stop trains opposite the platform, and rescinding order 6084, Jan. 14, 1909.

14171. July 10.—Authorizing G.T.R. to build spur for Dominion Flour Mills, Ltd., Montreal.

14172. July 12.—Authorizing C.P.R. to rebuild bridge at mileage 74.6, Eastern Division.

14173. July 11.—Authorizing G.T.R. to build additional track across Walker and Edward Sts., Prescott, Ont.

14174. July 12.—Authorizing C.P.R. to rebuild bridge at mileage 97.2 on its Sherbrooke subdivision, Que.

14175. July 11.—Authorizing G.T.P. Branch Lines Co. to carry traffic over its Melville-Regina branch from Balcarres to Edgeley, Sask.

14176. July 12.—Authorizing C.P.R. to rebuild bridge 69.3 on its Toronto subdivision, Ontario Division.

14177. July 12. — Approving Standard Freight Tariff G.N.C.R.C. 799 of Vancouver, Victoria and Eastern Ry.

14178. July 12.—Authorizing Maine and New Brunswick Electric Power Co. to maintain high tension power line across C.P.R. in Andover parish, N.B.

14179. June 28.—Authorizing N.T.R Commissioners to take possession of certain lands of the Temiscouata Ry. in Edmunds-

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ton and Madawaska parish, N.B.

14180. July 12.—Relieving C.P.R. from further protection of crossing at Dunner St., Norwood, Ont.

14181. July 12.—Authorizing C.N.O.R. to divert public road on part lots 33, 34, 35, Tyendinaga tp.

14182. July 12.—Ordering Dominion and Canadian Ex. Cos. to perform collection and delivery services for Burrell Rock Drill Co., Belleville, Ont., and that all express companies perform collection and delivery services upon both sides of all streets, fixing municipal boundary lines in which municipal collection and delivery services are established.

14183. July 13.—Authorizing C.P.R. to open for traffic its Forward branch from mileage 26 to 52.2, Sask.

14184. May 9, 10.—Ordering Bell Telephone Co. by Sept. 15, to make long distance connection with about eight applicant companies for interchange of business, etc.

14185, 14186. July 13, 12.—Authorizing C.P.R. to build spurs to Toronto Furniture Co.'s premises across Mowat Ave., Toronto, and in Peel county, one mile south of Cheltenham, Ont.

14187. July 12.—Authorizing C.P.R. to build extra track across road diversion in Ayr, Ont.

14188, 14189. July 13, 12.—Approving location of C.P.R. stations at Hosmer, B.C., and Canmore, Alta.

14190, 14191. July 13.—Authorizing G.T.R. to use bridges 21, 51 and 64 at mileages 76.02, 125.64 and 154.05, and bridge 122, St. George Viaduct, Middle Division.

14192 to 14194. July 14.—Authorizing C.P.R. to use bridges at mileages 75.3, 78.7, 37.4, 70.5, 84.1, 78.5, 40.3, 8.6, 7.4 and 42.1, on Toronto, London and Windsor Subdivisions, Ont.

14195, 14196, July 13.—Authorizing G.T.R. to use bridge 45 at mileage 116.19 and 115 at mileage 55.35, Middle Division.

14197. July 13.—Authorizing G.T.P. Branch Lines Co. to divert road on its Regina Boundary branch in s.s. ¼ sec. 29, tp. 9, r. 12, w. 2 m., Sask.

14198. July 13.—Extending to July 31, time for completion of C.P.R. spur into Horseshoe Quarry Co.'s premises.

14199. July 12.—Approving location of G.T.P.R. station at Druro, Sask.

14200. July 12.—Authorizing G.T.R. to change location of its spur to Sylvester Mfg. Co., Lindsay, Ont.

14201. July 12.—Authorizing Saskatchewan Government to carry road across C.N.R. in sec. 19, tp. 29, r. 2, w. 3 m.

14202. July 12.—Authorizing C.N. Alberta Ry. to cross road allowance between secs. 25 and 26, tp. 53, r. 8, w. 5 m.

14203. July 11.—Authorizing C.N.R. to open for freight traffic its line from Luxton to Ceylon, Sask., 89 miles.

14204. July 13.—Ordering C.N.O.R. to raise trestle across Lake St. Francois, near Newaygo station, by Aug. 15, under penalty of $50 a day.

14205. July 14.—Authorizing city of Ottawa to maintain 6 ft. sewer under C.P.R. between Merton and Pinhey Sts.

14206. July 14.—Authorizing C.N.O.R. to build bridge over Sucker Creek, Tyendinaga tp.

14207. July 14.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to rebuild bridge at mileage 67.9.

14208. July 14.—Authorizing Algoma Eastern Ry. to build bridge over West River crossing at mileage 55.96.

14209. July 14.—Ordering Napierville Jct. to file before Sept. 1, joint through freight tariffs to points on lines of N.Y., N.H. and H. Rd., and authorizing first named company to make refund to Lefebvre and Mahon, Howick, Que., in excess of lawful rate charged on carload of hay from St. Edouard, Que., to Worcester, Mass.

14210. July 14.—Extending for three months from July 18, time for completion of spur on Lauriston St., Saskatoon, Sask., without prejudice to complaint of A. Bowerman, the whole matter to be reheard at Saskatoon at next meeting of Board.

14211. July 14.—Ordering on application of Camrose, Alta., board of trade that plans be submitted for changes to interlocker plant for transfer work, to be completed by Sept. 1, and paid equally by the two railways.

14212. July 15.—Ordering G.T.R. to re-establish passenger service on trains 7 and 65, and 58 and 6, between Palmerston and Wiarton, record of passengers to be kept between Aug. 1 and 31, inclusive, and to be filed with Board by Sept. 15.

14213. July 18.—Ordering C.P.R. and G.T.P.R. to file joint tariffs of tolls on G.T.P.R. lines by shortest joint mileages via Camrose, Alta., Saskatoon, Sask., and Portage la Prairie, Man., on lumber, etc., said joint tariffs to apply from all shipping points from which tariffs of lumber, etc., apply to points east of Rocky Mountains on C.P.R. and C.N.R. Should any disagreement arise between companies full particulars of points in dispute to be reported to Board not later than Sept. 1.

Too Late for Classification.

Alberta Central Ry.—In an interview in Winnipeg, July 10, J. Carlyle Moore, Vice President, is reported to have stated that good progress had been made with the construction of the line. Up to that time the company had been grading with its own forces, and about 40 miles had been completed from Red Deer, Alta., westerly. A contract had been let to D. F. Macarthur for the grading of between 60 and 70 miles beyond the point to which the work is now in progress, and it was hoped to have steel laid on about 100 miles this fall. This mileage will open up the Brazeau River coalfields, but it is intended sometime in the future to extend the line to the Yellowhead Pass. The company has also power to build a line easterly from Red Deer to Moose Jaw and other points. (July, pg. 645.)

Since the above was put in type, we have been officially advised that a contract for the construction of the line to sub-grade, from Red Deer to Rocky Mountain House, 64 miles, has been let to D. F. Macarthur, of Winnipeg. The work is to be completed to the east end of the North Saskatchewan River at Rocky Mountain House by Nov. 30, the line into the Brazeau coalfields being an extension from Rocky Mountain House westward.

Kettle Valley Lines.—R. Smalles, a member of the contracting firm of L. M. Rice & Co., stated in Vancouver, July 12, that his firm had been awarded a contract for building a further section of 40 miles on this line. The first part under contract extends from Bull Creek to the summit near the headquarters of the west fork of the Kettle River. Work is to be started at once and pushed to completion as fast as possible. The contract held by the firm for grading, etc., on the section to Bull Creek has been completed and 20 miles of track has been laid on it. Work was started in Penticton, July 11, on the grading for the line in that town which will connect the wharf, now nearing completion, with the divisional yards which are to be laid out. President J. J. Warren is reported to have stated in a speech at the cutting of the first sod, that about $4,000,000 would be spent on construction in the town and its vicinity. Work is reported to be progressing rapidly on the section from the C.P.R. at Merritt to the headquarters of the Coldwater River near the Hope Summit. Track has been laid on this section for over 20 miles. (July, pg. 647.)

St. John Valley Ry.—Press reports from Fredericton, N.B., July 17, state that while everything is in readiness for the signing of the agreement for the building of the railway along the St. John Valley, as between the Provincial and Dominion Governments, and A. R. Gould, representing the St. John and Quebec Ry., there is some likelihood of a hitch occurring owing to some differences in regard to the specifications. (July, pg. 649.)

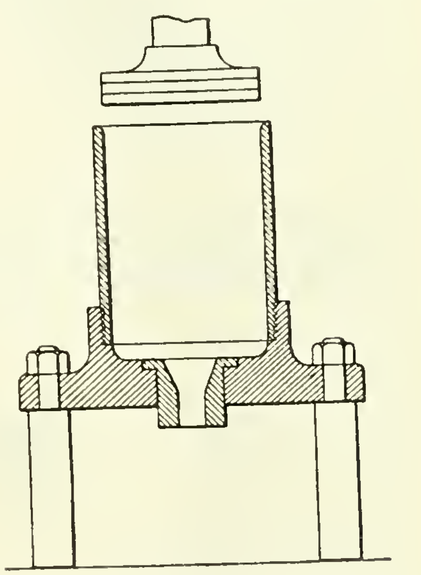
Great Northern Ry.—A committee was appointed by the Vancouver City Council July 12 to confer with the company's engineers as to industrial spur lines in the city, with a view of obtaining a consent order from the Board of Railway Commissioners.

Tenders were asked, July 12, for the erection of a pier 800 ft. long and 148 ft. wide, on the waterfront between Heatley Ave. and the sugar refinery. A freight shed 100 ft. in width will be built along the whole length of the pier, having a roadway of 24 ft. wide on each side. A. Stewart, Assistant Chief Engineer, stated that the work would be started within a month and completed as fast as possible. (July, p. 655.)

White Pass and Yukon Ry.—In an interview at Vancouver, B.C., July 12, on his return from the north, O. L. Dickeson, Vice President, said in the past month negotiations had been started whereby the copper regions near Whitehorse will be opened up, and that the question of the building of branch lines was under consideration.

A C.P.R. Grease Press.

A simple grease press in use in the C.P.R. roundhouse at Glen Yard, Montreal, is shown in the illustration. It consists of a 6-in. pipe that has been bored out and screwed into a cast iron base. This base receives the grease die which is slipped in from above. After the pipe is filled with the grease to be formed, the piston is forced down by air pressure, driving the grease out through the die in the base.—Railway Age Gazette.



Grain Elevators in Canada.

Following is a summary of the number of grain elevators, with capacity, throughout Canada:—

	Number.	Capacity. bush.
British Columbia	6	444,000
Alberta	249	8,764,500
Saskatchewan	904	26,465,000
Manitoba	707	21,813,800
Ontario (mills)	4	1,740,000
Ontario (terminals)	15	25,700,400
Eastern transfer	24	20,535,000
Totals	1909	106,462,700

Creosoting Ties for C.P.R.—The C.P.R. has made a contract for a term of years with the Dominion Tar and Chemical Co., Ltd., to treat about 1,000,000 ties a year. The plant is located at Transcona, near Winnipeg. The preservative used is creosote, a distillation of coal tar, or the heavy oils of tar. The treatment is to place the ties in cylinders, and, after closing the doors, apply a vacuum, subsequently filling the cylinders with creosote and subjecting the timber to an oil pressure, maintaining the same for as long a time as the class of the timber treated necessitates. The charge is then withdrawn and the operation is complete.

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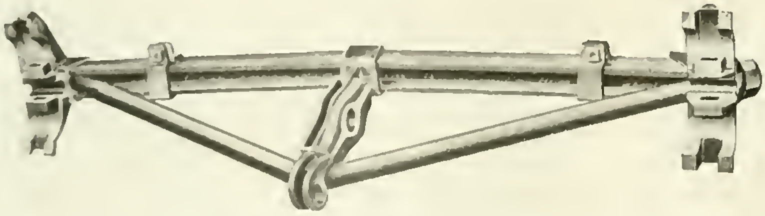

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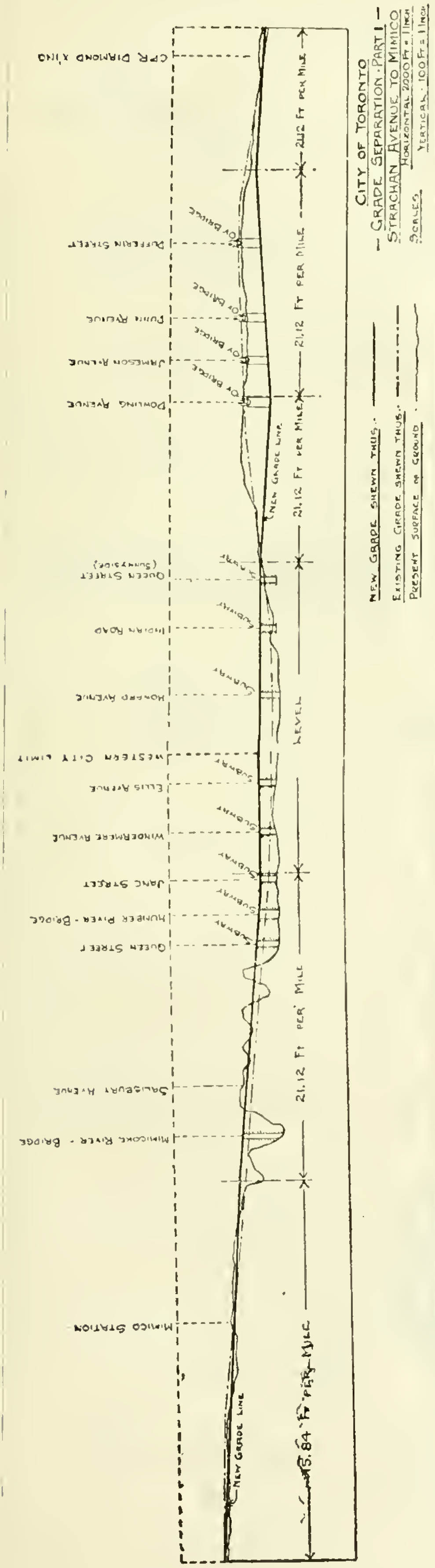


Grand Trunk Railway Grade Revision at Toronto.

The elimination of level crossings over the railways along the lake front of Toronto is being carried out by the G.T.R., in conjunction with the city council. The work is being done under orders of the Board of Railway Commissioners, and at present only the western half is being undertaken on the G.T.R.'s Toronto-Hamilton line. In order to carry out the plan it was found necessary to start work near the new roundhouses and yards at Mimico, consequently an agreement had also to be made with the township council of York. As a result the first section of the work covers about six miles, from the Bathurst St. Jct., in Toronto, to near Mimico.

The plan given on this page shows the portion of this section from the C.P.R. diamond, westward to Mimico, and it will be seen that there are shown the level of the existing track, the present ground levels, and the level at which the new track is to be laid. The existing tracks ascend westbound on a gradient of 0.7% for about 3,000 ft. west of the C.P.R. diamond, and then for 1,400 ft. with a 0.28% gradient, then descend with 0.96% gradient for 2,300 ft. Then for a distance of 1,100 ft. the tracks are level, followed by a descending gradient of 0.63% for 4,900 ft., and 800 ft. of practically level track. Then there is an ascending gradient of 0.26% for 1,500 ft., breaking to one of 0.45% for 13,900 ft.

The new line which is being built will have a dump wide enough to carry four tracks, and will start from near Bathurst St. Jct. with an ascending gradient of 0.40% for about 2,400 ft., followed by a descending gradient of 0.40% for 4,700 ft., then an ascending gradient 0.40% for 3,460 ft., a level stretch of 6,300 ft., then an ascending gradient of 0.40% for 6,450 ft., reaching the end of the revision with a 0.30% ascending gradient for 8,000 ft. At Dufferin St. the new rail level will be about 22 ft. lower than the existing rail level, and at Dunn, Jameson and Dowling Avenues, 25 ft. lower than the existing level. At these four points bridges will be built to carry the streets across the tracks, at practically the present street level.

The new rail level at Sunnyside will be 4½ ft. above the present rail level. After a lengthened fight it was decided to carry the road at Sunnyside across the railway by means of a bridge, and in order to pacify certain interests the G.T.R. is acquiring considerable waterfront property at Sunnyside. From near Sunnyside to Ellis Ave., the track will be raised to about 14 ft. higher than the present track level, and subways will be built under the tracks at Queen St., Indian Road, Howard Ave., Ellis Ave., Windermere Ave., Queen St. W. crossing.

The Humber will be crossed by a new four track steel bridge, for which a pier is sunk in the middle of the river. The building of the pier caused considerable discussion and an appeal to the Public Works Department, on the ground that it would be an obstruction to a navigable river.

The bank carrying the track west of Sunnyside will be faced on the lake shore road side by a concrete retaining wall, extending practically the whole way to Swansea. There will be a similar retaining wall along the exhibition grounds. The abutments of all bridges and for all subways are of concrete, and the superstructures of steel.

The biggest cutting is that near Sunnyside. This is made 140 ft. in width at the top, and 63 ft. at grade, where all fills are 67 ft. wide.

The train service is being carried on as usual, temporary tracks having been laid at some points where changes in the alignment are being made. The work is being done by the company's own forces, under the charge of D. McCooe, Superintendent of Grade Revision. J. R. W. Ambrose, Assistant Engineer, is in charge of the engineering work for the company, and E. L. Cousins represents the city's engineering department.

The second part of the work to be taken in hand will be the viaduct, which the Board of Railway Commissioners has ordered be built from just west of John St. to near Berkeley St. The plans for this viaduct are to be filed in Aug. Though not a part of this work, the building of the new Union Station has to be taken into consideration in connection with improvements on the lake front are being considered. This will probably be carried out along with the viaduct, and the whole may be completed in about three years.

◆

Transportation Conventions in 1911.

Sept. 19.—American Association of General Passenger and Ticket Agents, St. Paul, Minn.

Oct. 10.—Railway Signal Association.

Oct. 17-18.—American Railway Bridge and Building Association, St. Louis, Mo.

Oct. 19-21.—American Association of Dining Car Superintendents, Cincinnati, O.

Nov. 17-18.—American Association of Freight Traffic Officers, Cincinnati, O.

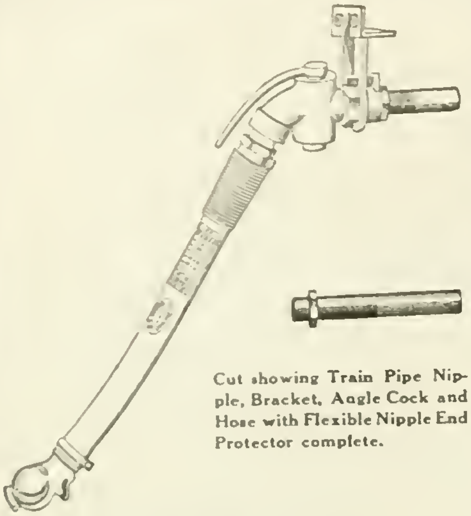
◆

Flange Lubrication on C.P.R. Western Lines.—Since the matter under this heading on page 713 went to press we have received a letter from C. H. Temple, Assistant Superintendent of Motive Power, C.P.R., Winnipeg, stating that a number of locomotives have been equipped with the flange lubricator, which was described in our July issue, page 605, and plan of which was given on page 611 of that issue. Mr. Temple states that the lubricator, which is using fuel oil, has shown satisfactory results. The oil is fed through a regulating valve from the cup to the feed pipe and flange shoe, which consists of a piece of rubber hose. The steam from the air pump exhaust pipe, passing through a coil placed within the oil cup, maintains the oil in fluid state.

Experiments with Longer Ties.—The Canadian Society of Civil Engineers committee on ties recommended at the last annual meeting in Winnipeg that experiments be made with 10½ ft. ties. We are officially advised that the society took no action and gave no instructions for carrying out experiments, nothing has been done. D. Macpherson, Assistant Chief Engineer, National Transcontinental Ry., who has been chairman of the committee for some time, tendered his resignation, but at the urgent request of the Society consented to retain the position for another year.

Quebec Central Ry. Officials.—There are a few slight errors in the list of Q.C.R. officials published on page 731. J. T. Reid is now Assistant Superintendent, and has been succeeded by C. K. Bartlett, as Chief Dispatcher.. The engineer is J. T. Morkill, not J. T. Mockill, and the Car Foreman is R. G. Price, not N. G. Price.

A. Gray, heretofore Resident Engineer, Ottawa Division, G.T.R., Ottawa, has been appointed on the Dominion Government engineering staff, in connection with the Upper Ottawa storage scheme, which is being undertaken as a part of the proposed Georgian Bay canal system, of which C. R. Coutlee is Chief Engineer.



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MAINLY ABOUT PEOPLE.

Lord Strathcona has been admitted to the freedom of the city of Bath, Eng.

Mrs. John MacTaggart, eldest sister of Sir Wm. Mackenzie, died in Winnipeg July 22, aged 76.

W. H. Biggar, K.C., General Counsel, G.T.R., is in England, accompanied by his eldest son.

A. A. Maver, Master Mechanic, G.T.R., left Montreal, July 19, for a holiday trip to the southern States.

G. H. Shaw, General Traffic Manager, C.N.R., and Mrs. Shaw, returned to Toronto from Great Britain, July 20.

Sir Donald D. Mann, Vice President, C.N.R., returned to Canada, via New York, from England, at the end of June.

C. A. Hanson, of Coates, Son and Co., London, Eng., and Hanson Bros., brokers, Montreal, has been elected sheriff of London.

Sir William Mackenzie, President, Canadian Northern Ry., accompanied by Lady and Miss E. Mackenzie, returned from England, July 5.

G. D. Minty, a Winnipeg barrister, who died there suddenly July 3, was a son-in-law of N. Weatherston, formerly agent Intercolonial Ry. at Toronto.

H. E. Smith, Comptroller, Montreal Street Railway, underwent an operation about the middle of July and is reported to be convalescing satisfactorily.

Major J. F. Smith, who died at Barrie, Ont., July 10, was for 40 years G.T.R. station agent at that place. One son is in the C.P.R. service at Victoria, B.C.

Col. H. H. McLean, K.C., M.P., Vice-President St. John, N.B., Railway, who commanded the Canadian contingent at the coronation, returned to Canada July 9.

O. L. Dickeson, Vice President, White Pass and Yukon Ry., returned to Vancouver, B.C., July 12, from a trip to Alaska, in which he was accompanied by Mrs. Dickson.

W. T. Payne, Manager, C.P.R. Trans-Pacific Steamship service, arrived in Vancouver, July 9, on his way to Yokohama, Japan, after a holiday in Europe and Canada.

Col. Sir Henry and Lady Pellatt entertained the members of the Society of Knights Bachelor at the Cliffords Inn Hall and Garden, in London, Eng., June 28.

Peter Ryan, Registrar, eastern division, Toronto, who is interested in the Caraquet and Gulf Shore Ry., in New Brunswick, celebrated his golden wedding July 11.

G. Sterret, civil engineer on the G.T. Pacific Ry., construction staff on the Tete Jaune Cache section of the line, was married at Lindsay, Ont., recently to Miss R. McDiarmid.

Mrs. Arthur Spragge, of Toronto and Golden, B.C., was nominated as C.P.R. representative at the sixth annual meeting of the Alpine Club at the Great Divide camp, B.C., July 26.

G. M. Higginson, Trainmaster, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont., was presented with a hand bag and pipe, July 19, on starting for a holiday trip to Western Canada.

Sir Wm. Van Horne was awarded the grand championship for the finest boar, and obtained a large number of prizes in the classes for Yorkshire pigs at the Winnipeg exhibition recently.

W. H. Rosevear, of St. Lambert, Que., ex-General Car Accountant, G.T.R., was married at Montreal, July 12, to Miss M. I. Peebles, recently headmistress of the Practice School of Macdonald College.

W. R. McRae, Superintendent Truck and Motor Department, Toronto Ry., sailed from Montreal July 12, with his wife and family, on the s.s. Royal Edward, to spend two months in Europe.

Ralph Mojeski, M. Am. Soc. C. E., of Chicago, who is a member of the Quebec Bridge Board of Engineers, has been awarded the honorary degree of Doctor of Engineering by the University of Illinois.

H. R. Charlton, General Advertising Agent, G.T.R., returned to Montreal June 12, from a tour through the Jasper Park district of Alberta, which the G.T. Pacific Ry. proposes to develop as a tourist district.

F. H. McGuigan, formerly Fourth Vice President, G.T.R., is head of the firm of F. H. McGuigan and Co., of Toronto, which has secured the contract for the construction of the filtration plant at Montreal.

P. J. Myler, Vice President, Canadian Westinghouse Co., Hamilton, Ont., and H. H. Gildersleeve, Manager, Northern Navigation Co., Sarnia, Ont., have been elected directors of Travellers Life Assurance Co. of Canada.

A. M. Bennett, for four years chemist at the Montreal Steel Works, was presented with a loving cup, and an emerald and pearl pendant for Mrs. Bennet, July 6, on his leaving Montreal for England, for a similar engagement.

J. D. Altimas, Car Accountant, C.P.R., Montreal, was elected on the committee on office methods and accounting, for three years, at the recent annual meeting of the Association of Transportation and Car Accounting Officers at Cape May, N.J.

Lord Strathcona, who has held the position of High Commissioner for Canada, in London, Eng., for 15 years, has announced that on account of his age, and acting on the advice of his physician, he must relinquish the office at an early date.

Thomas Kinney, Track Superintendent, Sandwich, Windsor and Amherstburg Ry., died suddenly at Windsor, Ont., July 3. He had been in the company's service 16 years, first as trackman and for the past five years as track superintendent.

W. H. Jordan, chief clerk to General Freight and Passenger Agent, C.N.Q.R. and Q. & L.St.J.R., Montreal, was presented with a toilet outfit by the local staff on his leaving Montreal to take up the position of chief clerk to the General Traffic Manager, Canadian Northern Ry. at Toronto.

Col. Henry G. Prout, M. Am. Soc. C. E., First Vice-President and General Manager of the Union Switch & Signal Co., Swissvale, Pa., has been awarded the honorary degree of Doctor of Laws by the University of Michigan. In 1902 he received the honorary degree of Master of Arts from Yale University.

E. J. Brien, whose appointment as Trainmaster, District 2, Lake Superior Division, Schreiber, Ont., was announced in our last issue, was born at Carleton Place, Ont., Sept. 1, 1869, and entered C.P.R. service, Jan. 9, 1891, since when he has been, to June, 1911, switchman, brakeman and conductor, consecutively.

Sir Thomas, Lady and Miss Tait arrived in Montreal July 10, after a residence of eight years in Melbourne, Australia. Since retiring from office as Chairman of the commission managing the Victoria State Railways last autumn, Sir Thomas has been traveling leisurely from Australia, via India and Europe, with his wife and daughter.

R. A. Ross, E.E., and M. Can Soc. C.E., and H. Holgate, M. Can. Soc. C.E., who have been associated for many years as Ross & Holgate, consulting engineers, in Montreal, have dissolved partnership. In future the business will be carried on as R. A. Ross & Co. Mr. Holgate has been elected President of the Cedar Rapids Power Co.

A. R. Macdonell, railway contractor, formerly of Montreal, died July 15 at Frimley Park, Surrey, where he had lived for the past two years, having gone to England owing to failing health. He carried out a number of large contracts, one of the last being on the National Transcontinental Ry. in Northern Ontario, in partnership with M. J. O'Brien.

Sir Wm. Whyte, replying to a resolution of congratulation from the Victoria, B.C., Board of Trade, July 11, said: "The kind things that have been said to me during the past few days have touched me more than the honor itself, and it is my earnest hope that I may continue to merit the esteem and respect of my friends during the remainder of my life."

T. H. Curtis, who was President of the Master Car Builders Association for 1910-11, and who recently resigned as Superintendent of Motive Power, Louisville and Nashville Rd., has been appointed Mechanical Engineer of the commission to investigate smoke abatement in Chicago, which was appointed by the Chicago Association of Commerce.

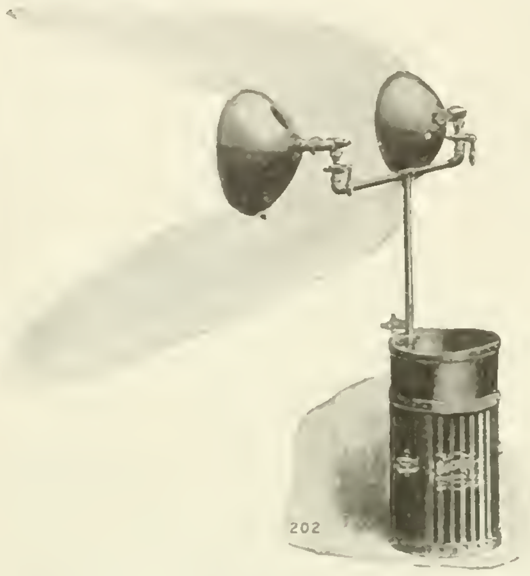
Sir Wm. Whyte, Vice President, C.P.R., visited Montreal in the middle of July, to confer with the President on a number of matters relating to the Western Lines, which gave rise to press reports that he was about to retire. Though still an exceedingly vigorous man, Sir William has reached an age when he might, naturally, desire to be relieved of the immense responsibility he has carried for so many years and to enjoy a well-earned rest, but it is not thought that he will retire in the very near future.

A supplementary list of subscribers to the King Edward Memorial Fund, in Montreal, includes the Canadian Pacific Ry., $2,500; R. B. Angus, director, C.P.R., $1,000; Sir H. Montagu Allan, $1,000; N. Curry, President, Canadian Car and Foundry Co., $1,000; C. M. Hays, President, G.T.R., $1,000; C. R. Hosmer, director, C.P.R., $1,000; R. Meighen, director, C.P.R., $1,000; Sir Thos. G. Shaughnessy, President, C.P.R., $1,000; Sir William C. VanHorne, director, C.P.R., $1,000.

A. T. McKean, whose appointment as City Freight Agent, C.P.R., Winnipeg, was announced in our last issue, was born at St. John, N.B., Dec. 18, 1886, and entered C.P.R. service, June, 1903, since when he has been, to Apr., 1904, clerk in General Freight Department, St. John, N.B.; Apr., 1904, to Mar., 1906, stenographer and statistical clerk, same department; Mar. to Oct., 1906, stenographer to Master Mechanic, Winnipeg; Oct., 1906, to Dec. 31, 1908, stenographer, correspondence clerk, assistant chief clerk, Assistant Freight Traffic Manager's office, Winnipeg; Jan. 1, 1909, to June 15, 1911, Soliciting Freight Agent, Winnipeg.

W. H. Sample, whose appointment as Master Mechanic, Ottawa Division, G.T.R., Ottawa, was announced in our last issue, was born in Altona, N.Y., Aug. 20, 1864, and entered railway service July 20, 1882, since when he has been, to Apr., 1886, fireman, Central Vermont Ry.; Apr., 1886, to July, 1887, engineer, Central Vermont Ry.; July, 1887, to Aug., 1889, engineer, Atcheson, Topeka and Santa Fe Ry.; Aug., 1889, to Feb., 1901, engineer, Central Vermont Ry.; Feb., 1901, to July, 1906, road foreman, Central Vermont Ry.; July, 1906, to Mar. 15, 1911, Superintendent of Motive Power and Car Department, Northern Ry. of Costa Rica.

E. Eley, who has been appointed General Foreman, passenger car repair shops, C.P.R., West Toronto, was born



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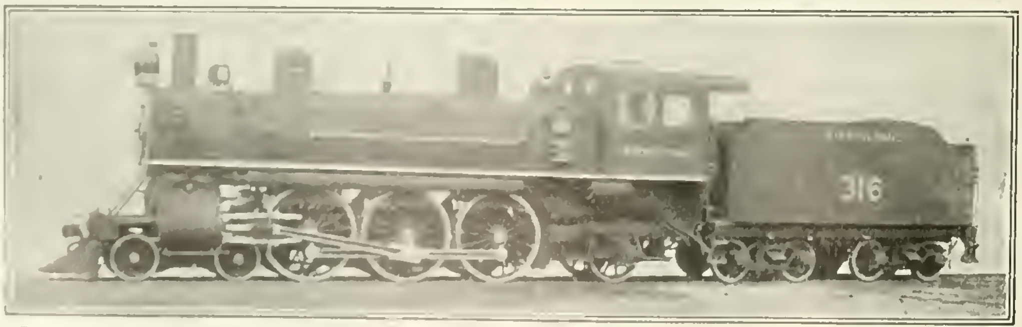

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in London, Eng., in 1867, and commenced railway service with the Great Northern Ry., at King's Cross, London, Eng., June, 1888, and came to Canada in 1889. He entered C.P.R. service in the Bridge and Building Department, Mar., 1894, and was transferred to the Car Department at North Bay, Ont., Aug., 1894, and was, from Mar., 1902, to Jan., 1903, charge hand at Chapleau, Ont.; 1903 to July, 1906, leading hand at North Bay, Ont.; July, 1906, to Feb., 1907, Car Foreman at Quebec; Feb., 1907, to May, 1911, Car Foreman at Glen Yard, Montreal.

S. B. Clement, who has been appointed Chief Engineer and Superintendent of Maintenance, Temiskaming and Northern Ontario Ry., North Bay, Ont., was an honor graduate in civil engineering of McGill University, and has served as an engineer of construction, C.P.R., on survey work, T. and N.O.R.; Assistant Engineer, Ontario Hydro-Electric Power Commission, Assistant Engineer and Chief Engineer, T. and N.O.R.

F. L. Ellingwood, whose appointment as Superintendent of Building Construction, C.P.R., was announced in our last issue, was born at Eastport, Me., Aug. 6, 1863, and commenced engineering work in the early 80's, on construction, and later in the Bridge and Building Department, Burlington, Cedar Rapids and Northern Ry. He afterwards studied architecture in New York, and was in practice as such until 1905, in the latter part of which he was placed in charge of the drawings, etc., for the Pennsylvania Rd. terminal in New York City. On the completion of this work, he returned to private practice, and carried out the designing and construction of a number of large public buildings.

R. Meighen, President, Lake of the Woods Milling Co., which owns an extensive system of grain elevators in the north western provinces, died somewhat suddenly in Montreal, July 12. He was a director of the C.P.R., and of the Dominion Transport Co., and President of the New Brunswick Ry., which has large areas of land in New Brunswick, its railway being leased to the C.P.R. He was a brother-in-law of Lord Mount Stephen, one of the original incorporators of the C.P.R. The value of his estate has been quoted as about $7,000,000. The funeral held July 15 was largely attended, Sir Thos. G. Shaughnessy, President, and R. B. Angus, director, C.P.R., being among those present.

G. S. Cooke, whose appointment as Superintendent G.T.P.R. lines Winnipeg to Watrous, Sask., was announced in our last issue, was born at Montreal, Oct. 27, 1875, and entered railway service Apr. 1, 1890, since when he has been, to Oct. 1, 1896, clerk in stationery department, G.T.R., Montreal; Oct. 1, 1896, to Feb. 15, 1900, clerk in Superintendent and Trainmaster's office, G.T.R., Montreal; Feb. 15, 1900 to Oct. 16, 1901, chief clerk to Trainmaster, G.T.R., Battle Creek, Mich.; Oct. 20, 1901, to Mar. 1, 1905, chief clerk to Superintendent, St. Louis, Iron Mountain and Southern Ry., Mer Rouge, La., Van Buren, Ark., and Aurora, Mo.; Mar., 1905, to Jan., 1906, chief clerk to Superintendent, Chicago, Cincinnati and Louisville Rd.; Jan. to Aug., 1906, chief clerk to General Superintendent, same road; Aug., 1906, to Aug., 1907, Trainmaster, same road, Peru, Ind.; Sept. 1, 1907, to Oct. 15, 1908, chief clerk, Engineering Department, Grand Trunk Pacific Ry.; Oct. 15, 1908, to June 1, 1911, Trainmaster, G.T.P.R., Melville, Sask.

Geo. W. Torrance, Freight Agent for Ontario for the White Star-Dominion Line Steamships, with office in Toronto, who died in Montreal July 21, was one of the best known and best liked traffic officials in Canada. He had been ailing since last winter, when he had a severe attack of la grippe. Early in July he left Toronto for a rest and change of air, going to Montreal, and from there to Metis, Que., with his sister. They then went on to St. Andrews, N.B., but as he grew worse they returned to Montreal, where he went to Victoria Hospital, suffering from a complication of diseases to which he quickly succumbed. He was a son of the late David Torrance, some time President of the Bank of Montreal, and had been in Toronto for some 35 years, first as representative of the Dominion Line Steamships, and latterly of the White Star-Dominion Line. In his young days he was an excellent lacrosse player, and always took great interest in sports. For many years he was a director of the Ontario Jockey Club, and latterly was chairman of its executive committee.

Lacey R. Johnson, Assistant Superintendent of Rolling Stock, C.P.R., Montreal, whose portrait appears on the first page of this issue, was born at Abingdon, Berks, Eng., June 22, 1855, and educated at the Grammar School there. He entered railway service as an apprentice at the Great Western Ry. works, Swindon, June 1, 1870, and was Chief Engineer and Foreman of Mechanics at the Woolwich Arsenal, Jan. 1 to Aug., 1876, and fitter and erector, Sept., 1876, to Nov., 1878; Manager, Davis and Sons' engineering works, London and Abingdon, Nov., 1878, to Aug., 1879. In Sept., 1879, he went to India as draughtsman on the Scinde, Punjaub and Delhi Ry., and was subsequently foreman of machine and erecting shops there. He left India on account of health, Mar., 1882, and entered G.T.R. service at Montreal as draughtsman June, 1882, and joined the C.P.R., Nov. 2, 1882, since when he has been, to Nov., 1885, General Foreman at Carleton Jct.; Nov., 1885, to May, 1886, Assistant Master Mechanic, Eastern Division, Chapleau, Ont.; May, 1886, to Apr., 1901, Master Mechanic, Pacific Division, Vancouver, B.C., and from the commencement of the trans-Pacific service his jurisdiction extended over the engineering department of the vessels, during which time he spent three different winters in Hong Kong superintending alterations and repairs to the company's vessels; Apr. to Sept., 1901, on the purchase of the Canadian Pacific Navigation Co. by the C.P.R., he was Superintending Engineer of the combined fleets, which position was severad from the locomotive and car department; Sept. 1, 1901, he was appointed Assistant Superintendent of Rolling Stock at Montreal, which position he still holds.

The late George W. Torrance.

* * *

The Railway and Marine World's Mechanical Editorship.

Frederick H. Moody, B.Sc., has been appointed Mechanical Editor of the Railway and Marine World, and will enter on his duties at once. His career eminently fits him for this work. After passing through Harbord Collegiate Institute, Toronto, he entered the University of Toronto, and graduated, with honors, in mechanical and electrical engineering. He then took the post graduate course in mechanical engineering, receiving the degree of Bachelor of Applied Science, with honors, and was appointed Demonstrator in Thermo-dynamics at the University, instructing the third and fourth year students. He also had charge of a night class in steam engine design at the Toronto Technical School.

His practical work has been varied and thorough. He served the major portion of his time as machinist apprentice with the John Inglis Co., Ltd., engine builders, machinists, etc., Toronto, and his other practical work includes shop work on high tension transmission apparatus with the General Electric Co. at Schenectady, N.Y., designer of locomotive details with the American Locomotive Co. at Schenectady, N.Y., and designer of vacuum and marine pumps, largely for vessels for the United States Navy, with the Blake and Knowles Pump Co., East Cambridge, Mass.

Then he took up mechanical editorial work, and was for some time associate editor of the Maclean Publishing Co.'s technical papers, Canadian Machinery, The Power House, and the Canadian Foundryman, in Toronto. Latterly he has been one of the associate editors of Machinery, and of Railway Machinery, published in New York, which is said to have the largest circulation of any mechanical paper in the world. He is thus thoroughly equipped for the work he will have to do for the Railway and Marine World, and which will speak for itself. We confidently ask for him the cordial co-operation of railway mechanical officials generally, which, we are sure, he will receive, and in this connection we wish to extend our cordial appreciation for favors and support, for which we are indebted to very many of them, in the way of contributions of matter, information, hints, etc.

In pursuance of the policy announced at its inception, namely, to thoroughly cover every department of railway work, the Railway and Marine World has always devoted a considerable amount of space to mechanical matter, and, as a consequence, enjoys a most thorough circulation throughout the Dominion among steam and electric railway officials in the mechanical departments, reaching the superintendents of rolling stock, master car builders, master mechanics, locomotive foremen, road foremen of locomotives, car foremen, shop foremen, etc., as well as all other classes of railway officials.

The rapid increase in railway mileage, and the establishment of new and enlarged shops, which is going on, renders it desirable that still more space should be devoted to mechanical matters in future, and we, therefore, decided to increase our editorial staff, in order that the ground may be even still more effectually covered. We feel confident that our action will be appreciated by our readers.

* * *

A. E. Starr has been appointed acting Manager, C.P.R. Telegraphs, Victoria, B.C., during the absence on leave of W. Christie.

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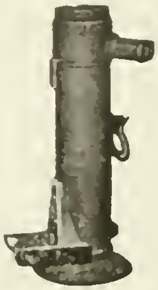

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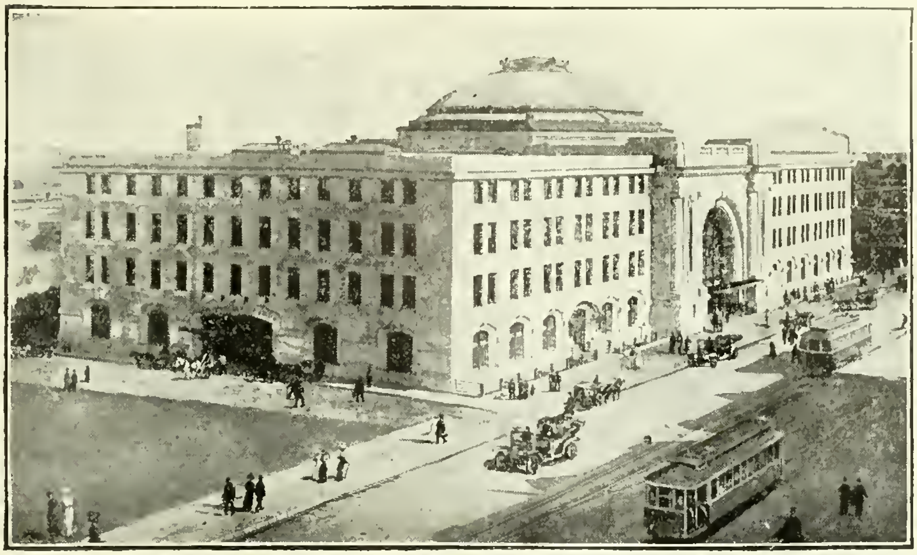
Fort Garry Union Station, Winnipeg.



Fort Garry Union Station, Winnipeg.

The union station which is being built at Winnipeg by the Canadian Northern Ry. for the joint use of itself and the Grand Trunk Pacific Ry., is rapidly approaching completion. The station and terminal yards occupy about 70 acres of ground, located very close to the centre of the city, and bounded by Water St. on the north, Main St. on the west, the Assiniboine River on the south, and the Red River on the east. On this site was originally located old Fort Garry, built in 1812 to protect the trading post previously established by the Hudson's Bay Company, and which was the original settlement of the city.

The Passenger Station Building is located on Main St., directly opposite Broadway, and is an imposing structure, built entirely of stone, having a length of 350 ft. along Main St., and a width of 140 ft. The larger portion of the building is four stories and basement, with an elaborate central portion, having great arched windows on all four sides, and surmounted by a massive dome 100 ft. high above street level. The centre of this dome is directly opposite the centre of Broadway. The main entrance is off Main St., at centre of building, beneath a great stone arch, having massive stone columns on either side projecting 10 ft. beyond the building walls. The main floor is at the street level, and will be devoted entirely to station facilities.

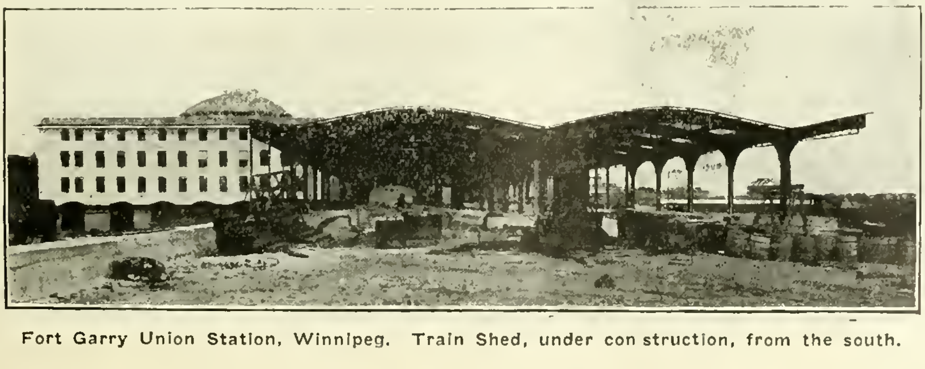
The main floor plan, for convenience to passengers, and facility of operation, represents the highest type of modern passenger station design. Passengers going through the main entrance will pass through a vestibule and arrive directly into the ticket lobby, a clear circular space 90 ft. in diameter, entirely unobstructed by columns, seats or booths of any kind. This lobby is directly beneath the great dome and is exceptionally well lighted by the great arched windows, one on each of the four sides. On the east and west sides these windows open through to the front and rear walls of the building, and on the north and south sides open directly out on the large open courts. The lobby is surrounded on the first story by balconies overlooking the main floor. These balconies run between the great arched ribs, which, rising from the main floor, taper away to the summit of the dome. The ticket booths are arranged on south side of lobby, and passengers after purchasing tickets will go directly to baggage checking counter at rear of booths. They may then pass out from lobby through rear vestibule direct to subway under tracks, from which ample stairways lead up to the train shed platforms overhead. On the north side of ticket lobby space is provided in each corner for telephone and telegraph booths and newspaper and book stands. Passengers who must wait for trains may pass through north side of ticket lobby into waiting room, which has an area of 9,000 sq. ft. By this arrangement of having the waiting room adjoining and separate from ticket lobby, a quiet and orderly waiting room is assured, as all passengers going to and from trains may pass directly through the unobstructed ticket lobby without entering waiting room. The confusion incident to having both moving and waiting passengers together will be effectually prevented by this arrangement.

Adjoining the waiting room on the west side and facing on Main St., is the lunch room, area 1,300 sq. ft., also the restaurant, area 2,200 sq. ft. Both of these rooms have a separate entrance off Main St., so that they are capable of handling local business direct. Adjoining the waiting room on the east side is the men's waiting room, area 1,800 sq. ft., and the women's waiting room, area 1,800 sq. ft., each provided with toilets and wash stands. On the north side of waiting room an exit is provided to a 50 ft. street on private property, which may be used exclusively for carriages. The central portion of the waiting room is covered over by an arched skylight 40 ft. wide by 100 ft. long, above which is an open court, thus providing the waiting room with excellent light. A special feature has been made of the construction of these skylights. They are composed of vault light in panels and made absolutely watertight, which, in a region of heavy snowfalls and extremes of temperature will prevent the annoying leaks and draughts incident to large skylights of ordinary construction in this climate.

The walls of waiting room are embellished with the coat of arms of each of the various provinces of the Dominion, executed in gold leaf and colors. The seats in this room are heavy oak benches of the movable type, these being generally considered as the most desirable for station purposes. Arranged around the waiting room are the usual concessionary booths for the sale of cigars, candy, souvenirs, etc. The interior of waiting room and ticket lobby has the effect of stone construction throughout, the wainscoting being of marble 6 ft. high, and the floors of terrazzo. This construction gives not only a very attractive appearance to the rooms, but has the advantage of being sanitary and readily cleaned. All stairways are of iron with marble treads.

The entire south wing of the main floor is occupied by the baggage room, area 8,000 sq. ft., and the express room, area 8,000 sq. ft. In the future, when more space is required, both the baggage and express will occupy space beneath the tracks and platforms adjoining rear of building, as described further on. The space at first occupied by them in the building may then be used for additional waiting room space, if considered desirable at that time, or for other station purposes. The central portion of this wing is covered by an arched skylight similar to that over the waiting room in the north wing, there being an open court in the interior of this wing also. A driveway for baggage and express waggons is provided at the south end of building. The level of this driveway is 3½ ft. below the level of main floor, and is reached by a short 5% grade down from Main St. The waggons will be loaded and unloaded on an 8 ft. platform outside of building wall, which spans the basement area away below. The baggage and express will be handled by hand trucks between the building and the train platforms, through trucking subways beneath train sheds, and by electric elevators from subways to each platform at either end of train shed.

The basement floor is 15 ft. below the level of Main St. The entire north wing of this floor will be devoted to immigrants. There is a waiting room, area 10,000 sq. ft., having a lunch counter on the north side, and a laundry and separate men's and women's bathrooms on the east side. Adjoining the waiting room on the south side is a separate men's smoking room, with toilets, area 3,000 sq. ft., also a women's waiting room with toilets, area 3,000 sq. ft. The immigrants will be conducted to and from waiting room and trains by means of a stairway at rear of building, leading direct from basement to passenger subway. A separate immigrants' entrance off Main St. is provided leading down from street to basement, partly by a stairway and partly by ramp. It will therefore be seen that immigrants will be well provided for, and will be han-



Fort Garry Union Station, Winnipeg. Train Shed, under construction, from the south.

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dled to and from both trains and the street without coming into contact with other passengers.

Fort Garry Union Station, Winnipeg. Waiting Room.

In the north wing of basement floor, at the southwest corner, a barber shop is provided, area 1,300 sq. ft., which can be reached by stairways from both Main St. and the main vestibule of building. The remainder of the west side of wing is occupied by the kitchen, area 6,000 sq. ft., which will supply the restaurant and luncheon rooms directly overhead. The remainder of this wing is occupied by the boiler and engine rooms, also heating and ventilating apparatus. There are four boilers of 130 h.p. each, provided for heating purposes. Under the central portion of building, the basement floor will be used for storage of sleeping and dining car supplies, and miscellaneous storage purposes. The basement is surrounded on all four sides by an open areaway 10 ft. wide, which supplies light and air to the basement rooms.

The second, third and fourth floors will be occupied entirely by the local and general Western Offices of the Canadian Northern and Grand Trunk Rys. These offices are to be on either side of a corridor, the interior row of offices in each wing facing on the open court. Each floor provides an available office space of 25,000 sq. ft., exclusive of corridors, stairway, elevators and toilets. Provision has been made in the design of foundations and steel structure for the future addition of five office floors, so that the building will then be capable of providing 200,000 sq. ft. of available office space.

The building is so designed that there will be no necessity for artificial lighting in any portion during the day. The electric lighting of the main floor has been artistically arranged. In the ticket lobby the lamps for the greater part are concealed, the interior of the vast dome being illuminated by the brilliant reflected light from these invisible lamps. In addition there is a large chandelier containing 150 lights, suspended above the centre of lobby. A special feature has been made of the heating and ventilating layout. The heat will be supplied by hot water system, using the indirect method on the main floor, and the direct method on the office floors.

The structure of the building is of the steel skeleton type. The column loads are supported at the foundations by concrete piles, each pile designed to carry a load of 40 tons. The character of the soil at the site is the blue clay common to Winnipeg, the supporting power of which cannot be relied upon to sustain a greater load than 3,000 lbs. to the square foot. The use of concrete piles was necessary, owing to the fact that they lie between the high and low water lines of the Assiniboine River, which is about 1,000 ft. from the building site.

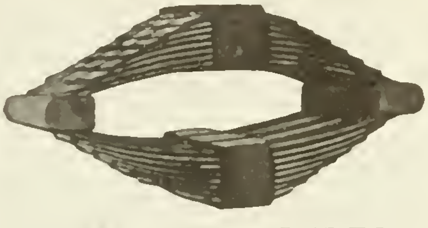
In the space allowed for the various rooms of the station, and also in the design of passenger track layout, ample provision has been made for the probable rapid growth of Winnipeg, and the consequent increase of requisite station facilities and traffic. The architects believe that the station as designed will meet all demands that will be made upon it for many years.

Fort Garry Union Station, Winnipeg. Waiting Room.

Passenger Yard and Train Shed.—The track layout for both the passenger and freight yards was developed after much study by the engineers and other officials of both railway companies in cooperation with the architects. Several preliminary layout plans showing the various types of passenger terminals were made and studied. It was finally decided that a layout of the through station type, with approach tracks elevated over the intersecting streets, and with tracks raised sufficiently above main floor of station to allow a passenger entrance subway beneath, was the most desirable, giving the greatest operating efficiency for the present and prospective traffic to be handled at Winnipeg, as well as providing the greatest convenience to passengers.

The maximum development of the passenger terminal layout will consist of eight through passenger tracks, with adjacent platforms, and two separate open running tracks at rear for through freight trains. The platforms will be 20 ft. wide, and can be made 1,650 ft. long. By means of this great length, and by the use of the double cross-overs, each track will be capable of handling two trains of 11 cars each during periods of heavy traffic. The total capacity of platforms will be 200 70 ft. cars. The platforms will be of reinforced concrete construction raised 12 ins. above base of rail. Between each pair of tracks there will be three lines of pipe for water, steam and gas. Passengers going to trains will pass from rear of ticket lobby into a 50 ft. wide subway, with head room of 10 ft., having 7 ft. wide stairways on each side, leading up to each platform. This subway will be so arranged by means of railings and gates that there will be no interference between passengers going to trains with those coming from trains. The subway will be heated in winter from the building. The elevation of tracks over the subway will be 10 ft. above level of main floor of station. A slight ramp down from rear of ticket lobby to floor of subway will allow a clear head room of 10 ft.

As already described, the baggage and



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THE LESSON

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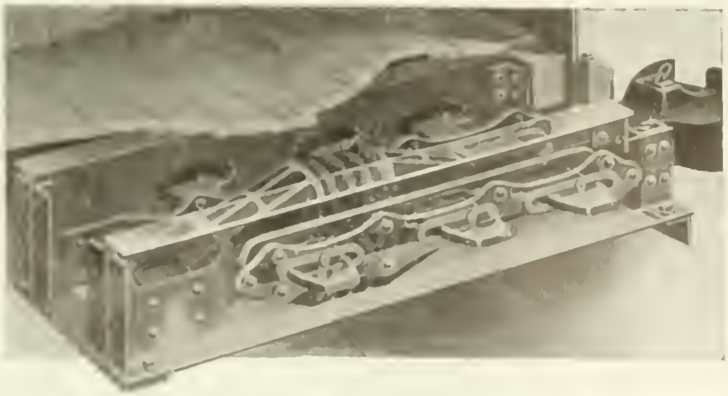

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express business will be handled for the present in the south wing of station building. In the future, however, these facilities will occupy space beneath the tracks, the tracks being carried overhead by steel viaduct construction. The south wing of station need then contain only a baggage checking counter for the convenience of passengers, with pneumatic tube connection with baggage room. The remainder of this wing will be used for any other station purpose desired. All the sheds beneath tracks will have a clear head room of 10 ft. They will be approached from a 50 ft. driveway, 3 ft. 6 in. below floor of sheds, with a 4% grade down from Main St., south of station building. On the south side of this driveway are the express sheds, one for each road, with an available floor space of 15,000 sq. ft. in each shed. On the north side is the baggage room, with an available floor space of 20,000 sq. ft., also the mail room, with 10,000 sq. ft. On both the express and baggage sides of drive there will be a row of electric elevators, one to each platform. These lifts will supply all trains departing for the west and south, and arriving from the east. The fact that the largest portion of all express business handled at Winnipeg arrives from the east and departs to the west, determined the location of sheds on this side of train shed. To supply the eastbound departing trains and the westbound arriving trains, the baggage and express will be handled through a 15 ft. trucking subway at rear of train shed to a row of elevators on north side of train shed. By these arrangements there will be no necessity for trucking of any kind being done on the train platforms, thereby affording the passengers the unobstructed use of the platforms, and avoiding all interference and confusion. This system of handling baggage, express and mail beneath tracks, with elevators to each platform, is in successful operation at some of the largest and most modern passenger terminals in the U.S., notably the union station at St. Louis, the Rock Island station at Chicago, the union station at Washington, D.C., and the Pennsylvania Rd. station at Pittsburgh. Similar systems of baggage and express handling are also successfully used in many of the large railway terminals in Europe.

Approaches to Passenger Terminal.—The west approach starts from the present main track on the north bank of the Red River, about 2,000 ft. west of Main St., and descending on an earth embankment at a maximum ruling gradient of 0.4%, passes over Main St. on a double track plate girder bridge, allowing an underclearance of 14 ft. for the street roadway. It then crosses the Assiniboine River on a new double track steel truss bridge 400 ft. long, one span of which is a swing bridge, as required by the Dominion Government. The east approach starts from the main line, near St. Boniface station, and rising on an earth embankment, with the ruling 0.4% gradient, crosses the Red River, on a new double track steel truss bridge 900 ft. long, containing one draw span, as required by the Government. It then crosses on steel plate girder bridges, the Winnipeg Transfer Ry., Mill St., Notre Dame Ave. and Water St. Each of the street roadways have at least 14 ft. clear head room. The base of rail is practically level from the Red River bridge to the Assiniboine River bridge at elevation 769.0, which is approximately 10 ft. above the level of Main St. At each end of the passenger layout there will be a signal tower, from which all signals, switches and crossovers will be controlled. The electro-pneumatic system of interlocking will be used. All track work is of first class construction, with 80 lb. rails and gravel ballast. While the Government requires all bridges across either the Red or Assiniboine Rivers to contain draw spans, only the Red River is navigable for any but small boats.

Due to the inevitable future development of the great fertile northwestern portion of Canada, Winnipeg will undoubtedly in time occupy the same important position as the railway centre of Canada, that Chicago now occupies as the railway centre of the United States. The officials of the joint railways and the architects have made this fact the leading consideration in the layout and design of both passenger and freight terminals. The plans were so drawn that the above described grand scheme of operation may be realized in the ultimate development, but necessitating the initial construction of only that portion necessary to handle the traffic presented by the requirements of the present and immediate future. The railway officials who co-operated for the construction of these joint terminals, and who personally rendered valuable assistance to the architects in their work of designing the terminals, are: Sir Wm. Mackenzie, President; Sir Donald Mann, Vice President; and M. H. McLeod, General Manager of the Canadian Northern Ry.; C. M. Hays, President; E. J. Chamberlin, Vice President and General Manager, and B. B. Kelliher, Chief Engineer, G.T. Pacific Ry. Warren and Wetmore, of New York City, are the architects who have had charge of the design, and who have supervised the construction of both the station building and the track layout of passenger and freight yards. Peter Lyall and Sons are the general contractors for the station building.

How to Organize a Railway Fuel Department, and its Relation to Other Departments.

By T. Duff Smith, Fuel Agent, Grand Trunk Pacific Railway.

When we consider that at least 8% of the earnings of our railways is spent on fuel, it must be plain to every thinking man that here we have a large item of expenditure which requires expert management and should be under the control of a department which should have its proper recognition in the departments of all railways.

The fuel department should consist of the fuel agent, his clerical staff and fuel inspectors also in cases where the railway company owns and operates its own coal dock, a dock superintendent and his staff. Taking them in the order named, we commence with the fuel agent. I do not believe in keeping the accounting separate from the purchasing and distributing parts of the work, so will state that the fuel agent should be held responsible for all fuel from the time it is purchased until it is finally accounted for to the audit department.

What are the necessary qualifications of a fuel agent and what are his principal duties? Before we can use any fuel it has to be purchased, and on this point there is a great difference of opinion as to who should purchase fuel. My own opinion is that it should be done by the fuel agent, under the direction of the general manager or general purchasing agent. He should have a thorough knowledge of all the different qualities and grades of coal on his own line and adjacent thereto, and should keep in close touch with all movements in the way of development thereon. It would also be proper to study the geological formation of all districts adjoining his line, so that he may know where to look for future supplies. To insure economical working he should be familiar with the capabilities of the different classes of bituminous coal, also hard, slack and lignites, by the use of which he may greatly reduce the cost of heating roundhouses, stations, etc.

The distribution of coal should be closely watched, so as to prevent congestion and avoid extra haulage. The actual office work of issuing orders for distribution and also tracing cars which have not reached destination in reasonable time should be assigned to one of the office staff designated fuel distributor.

The fuel agent should not spend too much time in the office where the routine work can be attended to by the clerical staff, but should be out on the line as much as possible, getting in close touch with the men who have the actual handling, master mechanics, road foremen agents, etc., and thus gain information which will enable him to make economies, probably only small ones, but which all tell in the year's work.

He should have a knowledge of the

Fort Garry Union Station, Winnipeg. Ticket Lobby.

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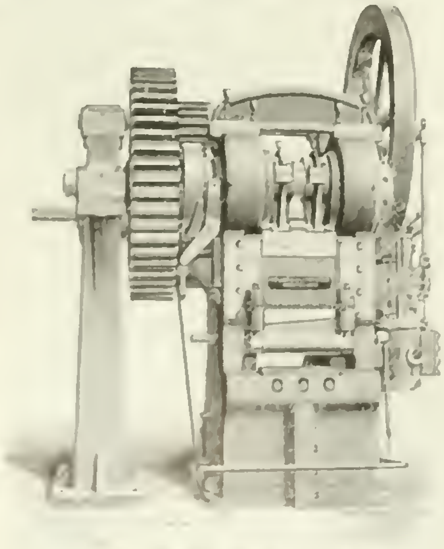

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different systems of handling coal, so as to be able to meet any contingencies and to keep the actual cost of handling at a minimum. He should so arrange his supplies that while amply protecting himself against any possible shortage by reason of unforeseen delays, bad weather, wrecks, wash-outs, etc., he may not have too much stock on dumps, thus causing extra cost by shrinkage, double handling and interest on money lying idle. He should have an all round knowledge of the accounting system, and have such reports sent in as will keep him in close touch with actual stocks and costs. The system of records should be such that it is absolutely impossible for any car, or, in fact, any fuel to remain unaccounted for. The actual charging for the fuel and distribution of charges should be done by the fuel accountant, who is on the fuel agent's staff.

He should keep in close touch with the general manager, purchasing agent or other officer to whom he directly reports, so that he may have immediate advice on questions of policy, etc., with general superintendents, so that they may facilitate movement of cars and also to get advance notice of any extra supplies required by reason of rush of traffic, opening pits or track laying. He should also consult them as to any alterations required to improve coaling tracks or plants, especially at temporary coaling stations. He should also have daily communication with the car service agent, so that a proper supply of equipment may be available at points required. On some lines as on my own, we have a heavy westbound movement during the early part of the navigation season, and a heavy eastbound movement during the fall months. Having to bring in our coal supply over the Great Lakes during navigation, it is most essential to keep well posted as to the car situation, so that we may load all cars west with coal and save light cars (in our case we have to use all box cars), and so make traffic both ways, thus saving equipment and power. This same principle will apply to all local conditions.

But the most important official to the fuel agent is the superintendent of motive power or master mechanic. Fully 90% of our fuel is used by this department, and it is only by the close cooperation of the two departments that the best results may be obtained. On a few roads they have a properly organized testing department, but with the majority all tests have to be made by the mechanical department, so that, to a great extent, the fuel agent has to rely on the result of their labors. Also where a performance sheet is compiled, it will not be possible to get any improved performances unless the two departments work closely together. In passing, let me state that I am not in favor of the "pooling" system, as under it you cannot place the blame on the actual man who is wasting or burning too much fuel.

The last man, but far from the least, to mention on the fuel staff is the fuel inspector. To fill this position I prefer a practical miner to any one else. He should, of course, be competent to judge whether the coal is up to the standard required by contract. His duties are, to see that all cars, before loading, are clean and in fit condition to carry coal, so that there will be no loss by leakage. To see that all cars are weighed both empty and loaded, noting any differences between actual and stenciled tare. To inspect all coal loaded, which should be done at the picking table, where he can see all the coal and detect impurities, and that the coal is properly cleaned. To report daily, by mail, if within one day's journey, otherwise by code wire, all cars loaded, giving car numbers, weights and destination, also reporting any local conditions at mine, such as variations in quality, opening new seams, car supply and labor conditions, especially when there is any friction between operators and employers, thus giving the fuel agent an opportunity to protect his stocks against any shortage caused by a possible strike or lock-out. As far as consistent, he should confer with operators when they have trouble with bad veins, etc., and try by practical advice to help improve matters. I have been receiving coal from one mine where, by our inspector's practical advice, the quality of the coal has improved fully 20% during the last six months. Operators, instead of objecting to such inspectors, are pleased to have them. Inspectors should have the power to absolutely refuse any coal not up to standard, and having given your inspector this power, trust him, and stand behind him and you will soon find that operators will tender you only the article you have purchased.

T. Duff Smith,
Fuel Agent, Grand Trunk Pacific Railway.

In conclusion, the fuel department, although generally looked upon as one of the minor departments of a railway, is really one of the most important, as we all know that, next to labor, fuel is the greatest expense in the railway budget. It is not an earning department like the freight or transportation departments, but in the hands of a competent fuel agent it does earn money, not by bringing it in but by saving, and the best fuel agent is the man who, while giving greatest efficiency in working will keep down the actual cost of his fuel and handling to a minimum, at the same time keeping watch to see that none of the fuel is being wasted by other departments.

The foregoing paper was read at the International Railway Fuel Association's annual meeting recently.

◆

F. R. Glover, Assistant General Manager, British Columbia Electric Ry., returned to Vancouver, July 10, from a lengthened trip to England and Scotland.

TRANSPORTATION APPOINTMENTS.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Alberta Central Ry.—M. Neilson, until recently Consulting Engineer, Montreal St. Ry., has been elected Vice President and General Manager, A.C.R.

Canadian Northern Ry.—Following are the officials of the recently established District 6, at Brandon, Man.:—Superintendent, W. E. Roberts; Chief Dispatcher, W. I. Munroe; Trainmaster, G. A. Cunliffe; Bridge and Building Supervisor, T. Harris; Locomotive Foreman, H. Williams; Roadmaster, Portage la Prairie to Regina, Maryfield and Wawanesa subdivisions, all with offices at Brandon; Roadmaster, Brandon Jct. to Calder, Hallboro to Beulah, E. Cheetham, with office at Neepawa, Man.

Canadian Pacific Ry.—A. Rutledge, heretofore Assistant Superintendent, has been appointed Superintendent, Sleeping, Dining and Parlor Cars, and News Service, District 1, embracing the lines east of Toronto and Sudbury, Ont. Office, Glen Yards, Montreal.

E. Eley has been appointed Foreman Passenger Repair Shops, West Toronto, Ont., vice F. W. Perry, appointed Divisional Car Foreman, Toronto.

J. Sindall has been appointed Locomotive Foreman at Sutherland, Sask., vice J. McQuarrie, transferred.

R. Cooper has been appointed Assistant Car Foreman at Moose Jaw, Sask. This is a new position.

J. D. Muir, heretofore Locomotive Foreman at Red Deer, Alta., has been appointed Locomotive Foreman at Medicine Hat, Alta., vice A. Mallinson, transferred to Revelstoke, B.C.

F. McFarlane, heretofore Locomotive Foreman at Crowsnest, B.C., has been appointed Locomotive Foreman at Red Deer, Alta., vice J. D. Muir, promoted.

M. A. Cardell, heretofore shop foreman at Medicine Hat, Alta., has been appointed Locomotive Foreman at Strathcona, Alta.

H. W. McLeod, heretofore Trainmaster, District 3, British Columbia Division, Grand Forks, has been appointed Trainmaster, District 1, British Columbia Division, vice W. M. Ansley, transferred. Office, Revelstoke, B.C.

L. L. Ashton has been appointed Assistant Roadmaster, District 1, British Columbia Division, Revelstoke, vice J. Todd, resigned.

A. Mallinson, heretofore Locomotive Foreman at Medicine Hat, Alta., has been appointed General Foreman, with supervision over Car Department as well as Locomotive Department, at Revelstoke, B.C., vice W. Kennedy, resigned.

A. W. G. Clark, heretofore General Fuel and Locomotive Inspector, Western Lines, Winnipeg, has been appointed Trainmaster in charge of territory between Laggan and Field, B.C., including Field terminals, vice A. N. McIntyre, transferred. Office, Field.

W. M. Ansley, heretofore Trainmaster, District I, British Columbia Division, Revelstoke, has been appointed Trainmaster, District 3, British Columbia Division, vice H. W. McLeod, transferred. Office, Grand Forks, B.C.

A. N. McIntyre, heretofore Trainmaster, District I, British Columbia Division, Field, has been appointed Trainmaster, District 2, Vancouver to and including Kamloops. Office, Vancouver.

T. H. Crump, heretofore Trainmaster, District 2, British Columbia Division, Vancouver, has been appointed Trainmaster in charge of Vancouver terminals, Westminster Jct. and Westminster subdivision. Office, Vancouver.

Central Vermont Ry.—At a board meeting, July 27, E. H. Fitzhugh, here-

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tofore Vice President, was elected President, vice C. M. Hays, resigned.

Dominion Atlantic Ry.—At a board meeting in London, Eng., July 12, Sir Thos. G. Shaughnessy and D. McNicoll, President and Vice President, C.P.R., were elected as additional directors of the D.A.R.

Grand Trunk Pacific Ry.—R. D. Thomas has been appointed Assistant to General Superintendent, vice N. B. Walton. who was also Trainmaster, District 4, 5 and 6, promoted. Office, Winnipeg. The position of Trainmaster, Districts 4, 5 and 6, has been abolished.

A. MacNamara has been appointed Assistant to Master Mechanic at Rivers, Man.

E. Hacking has been appointed General Car Foreman at Rivers, Man.

N. B. Walton, heretofore Assistant to General Superintendent, and Trainmaster, Districts 4. 5 and 6, Winnipeg, has been appointed Superintendent, lines Watrous to Edmonton, inclusive. Office, Wainwright, Alta.

Dr. Traynor has been appointed District Surgeon at Kitselas, B.C.

Dr. C. A. Eggert has been appointed Division Surgeon. Office, Prince Rupert, B.C.

The following agents have been appointed:—Hinton, Alta., G. Mann; Mirror, Alta., P. L. Harper; outside agencies: Fort William, Ont., R. Street Co.; Red Deer, Alta., G. H. Lindsay; Lacombe, Alta., J. McKinley; Wetaskiwin, Alta., J. P. Johnston; Strathcona, Alta., H. L. Sandeman.

Grand Trunk Ry.—J. H. Corcoran, heretofore of the Intercolonial Ry. passenger department at Moncton, is reported to have been appointed Travelling Passenger Agent of the G.T.R. in the Maritime Provinces, with headquarters at Moncton.

W. Walker has been appointed Resident Engineer, Ottawa Division, vice A. Gray, who has been appointed Assistant Engineer. Upper Ottawa River Storage, Public Works Department, Ottawa. Office, Ottawa.

John Walker has been appointed Resident Engineer, Northern Division, Allandale, Ont., vice H. W. McAll, resigned.

E. C. Lee. heretofore yard foreman has been appointed General Yard Foreman at Depot Harbor. Ont.

The following agents have been appointed:—Compton, Que., J. A. Provencher; Bowmanville, Ont., E. H. Brown; Anson Jct., Ont., H. F. Ward; Brampton, Ont., W. E. Holwell; Beachville, Ont. W. A. Abray; Komoka. Ont. N. A. McCallum; Pinkerton, Ont. R. M. Sparling; Paisley, Ont., S. Young; Harriston, Ont. J. H. Fawcett; Ayton, Ont. V. Cavanagh; South Indian, Ont., W. Key; Pembroke, Ont., F. O. Parent; outside agency, Sault Ste. Marie, Ont., W. R. Thom.

Temiskaming and Northern Ontario Ry.—J. H. Black, Superintendent. North Bay, Ont., having resigned to become General Manager, Northern Ontario Light and Power Co. at Haileybury, Ont., the position of Superintendent has been abolished.

S. B. Clement, heretofore Chief Engineer, has been appointed Chief Engineer and Superintendent of Maintenance of Way and Motive Power Department. Office, North Bay, Ont.

W. A. Griffin, heretofore Traffic Accountant, has been appointed Superintendent of Traffic, and in addition to his present duties will have jurisdiction over dispatchers, station agents, operators, trainmen, enginemen, and other matters pertaining to transportation. Office, North Bay, Ont.

A. J. Parr, heretofore Freight and Passenger Agent, has been appointed General Freight and Passenger Agent, reporting direct to the Commission. Office, North Bay, Ont.

G. W. Lee, General Agent, North Bay, Ont., heretofore reporting to the Superintendent, will hereafter report direct to the Commission.

H. F. MacDonald, heretofore acting Accountant, has been appointed Accountant, reporting direct to the Commission. Office, Toronto.

The Railway as a Manufacturer.

By E. J. McVeigh Storekeeper G.T.R.
Ottawa Ont.

The railway must necessarily be a manufacturer, but the important question is where will it stop. Beyond doubt the place to stop at is the point where manufacturing does not pay. In other words, where the article can be bought cheaper in the trade than it can be manufactured by the railway. This would seem to be a self evident proposition, but to keep right in the matter, as in many others, requires eternal vigilance on the part of some one. Our railways are today manufacturing many articles that could be bought at less than they cost to make in our shops, and they go on doing this until some one happens to notice it, and that item is dropped. But what is every man's business, is no one's business, and what we require is a more systematic supervision of this branch of our work.

The supply department is much to blame in this matter. How often do we place orders on shops for certain items of material without first making sure that such items can be made there better and cheaper than it could be purchased for. Are such orders not often made with the idea of decreasing our bills payable without considering whether we are, or are not, saving money. It is good business to compare our own cost of manufacture with the price at which we may purchase, but it is not good business to manufacture without carefully making that comparison.

The shop people were not the first to sin in this matter. In fact, they have stood out against it in most cases, until forced to give in, and the bad example so set has led to much evil, for it soon became known that while it was difficult to get certain things by purchase, no one seemed to care about the same thing made in the shops, so it was just made and that was all there was to it. Thus the evil grew, until it got away beyond orders placed by the stores department, and when John Smith of the motive power department. had his requisition for a new desk returned cancelled by the head of his department. who considered that the old desk was good enough for a few years yet, John told his troubles to James Jones, of the car department, and Jim, being a good chap, and knowing that he would want something from the machine shop some day, got busy and made the desk for Smith. His men were not cabinet builders, they didn't have the material to hand, but they managed it all right. And what did it cost? Neither Jim Jones nor anyone else knows, but it is a safe bet that it was at least twice what such a desk could be bought for, and the railway paid, while the purchasing agent was pleased to see the item cancelled, and the head of the motive power department congratulated himself that time on having saved a few dollars.

Had we not encouraged this "make it in the shop" business, the evil would never have grown to its present proportions. We are all more or less to blame in the matter, and it is up to each one of us to help to put a stop to it. The violated principle here makes of this a very serious matter indeed. for our heads of departments no longer control expenditure. It is not the one desk that Jones of the car shop made for Smith of the motive power, but we all soon became Smiths and Joneses. A small leak can let in water enough to sink a ship if left alone, and a leak that grows is naturally much worse.

With our present organization it would be unfair to ask the storekeeper to act as a spy on his friends, Jones and Smith, in their little game of scratch my back and I'll scratch yours, and the fact of the matter is he won't do it. In the first place he won't act the spy because he does not like that kind of thing, and in the second place, he won't be held responsible anyway, and he expects to want his own back scratched a little some day. This is not a simple matter to be disposed of by a general order, and so long as we are human we will never get it just right, just as we never reach perfection in anything. But to hit anywhere near the mark, we must shoot in the direction of it, and to control this business, to any extent, we must have some one on the ground responsibe for it. Why is not the storekeeper the man? It is a question of supplies, and he is the supply man, and it comes back to the question of his extended jurisdiction.

The method that suggests itself is that it should be laid down as a first principle that nothing in the nature of supplies be manufactured in shops other than to storekeepers order. Then it is up to him to see that he does not place orders for items that can be purchased for less money than it will cost to make them; he to inform the purchasing agent on this point, and shop people to have the privilege of returning improper orders, when they can show that they are such. An inspector, or other official, going through the shop and noting work other than regular repairs, may call for stores order covering same. If order cannot be produced, he has found something to enquire into. If it can, and he is still not satisfied, the storekeeper must explain. This would have a tendency to make both shop people and storekeeper careful. Then when it is understood that the storekeeper is responsible, and must account for all such work done in shops, and he has a right to demand explanation, the shop people will have him, as well as other officials, to dodge when doing unauthorized work. This will give Jones a good reason for refusing to make that desk for Smith. Quite frequently he only wants a reason for refusing to do it anyway.

This is not offered as a "cure-all," but like the good doctor's prescription, it is intended to "assist nature," human nature in this case. The storekeeper will not act as a spy on his fellow employes, nor will be continue to "butt in" when he has no authority. But make this his business and he will do it to an extent that will greatly improve the present conditions.

It is not necessary to tell railway men that as soon as a railway becomes big enough it should manufacture its own bar iron, brass and grey castings, machine bolts, track bolts and spikes, frogs and switches, build its own cars, etc., etc. These are large matters that have been fully considered and decided on. But even in these matters we must be constantly on the alert to see that our cost does not go up, and our standard of quality go down. Because we beat all creation last year, we must not take it for granted that we are doing the same thing this year. Men outside who make their living by manufacturing some one of these items are constantly straining every nerve to beat us at the game. We must keep ahead, or, in our own interest, quit. Then conditions change, and where we were forced to manufacture a thing a few years ago because no one else manufactured it, we may find today that it is now made both better and cheaper than we can do it. We should not go on mak-

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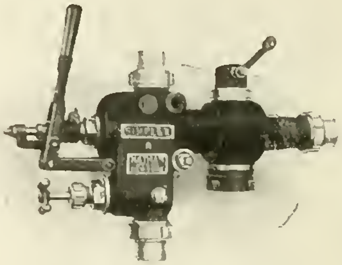

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ing things just because we started to do so some years ago.

Then we must guard against the danger of putting up with an inferior thing because we make it ourselves, in the mistaken idea that we are not losing money by doing so. Take one item that most roads delight to make for their own use, the cold set used by our track men. Now one good cold set will cut 20 rails, and many cut 100. Twenty bad sets will not cut one rail. But it costs us as much to make the bad tool as it does to make a good one, yet we often let the poor article pass because it is made in our own shop, whereas, if we purchased this tool at the same price it costs us to make it we would return them to the seller for replacement, and we would insist, and rightly, that each set be a good one. This applies to many other items, as well as cold sets.

Some years ago one of our railway papers published an article highly commending a shop foreman for a great saving he was making for his company by manufacturing coal hammers out of the 12 in. waste ends of 1¾ in. square tool steel. I drew the editor's attention to the fact that a piece of 1¾ square tool steel 12 inches long, was not generally considered waste, and I figured out for him what a coal hammer so made would cost. It came to about $1.40, and I told him that we used a coal hammer that was quite satisfactory, and it cost us 12 cents. The editor asked me to excuse him from publishing my letters and figures, as he did not want to emphasize the fact that he was as big an ass as the foreman who had tried to gain a reputation for economical management on such a poor foundation.

My own experience leads me to believe that a railway shop designed and equipped for repairs to cars or locomotives cannot turn out special articles cheaply, and we will all agree that we should not make an article at a greater cost than it may be bought for. But is it not also true that we should buy rather than manufacture, when we can manufacture at a cost only equal to that at which we can buy? Do not we increase business generally by so doing, which must rebound to the benefit of the railway, but we make friends for the railways, and surely there never was a time in the history of the world, when a friend was a more valuable asset than today.

I would not attempt to lay down rules for all people to work to, but in this matter of manufacturing there are certain general rules that should be followed, these are:

1.—The factory should be under the charge of the general storekeeper when situated near his headquarters, or under the divisional storekeeper on the division where the factory may be situated.

2.—The factory accounts should be kept separate from store and shop accounts, and a regular monthly balance sheet got out for each factory, their raw material, new tools, and repairs, and their pay roll being their debit, while their credit would be the value of finished article turned out.

3.—Accept no man's word as to what it costs to make anything, find out for yourself. Then compare the cost, and the article with the same thing as it can be purchased, when the thing is of such a nature that it can be purchased.

4.—Have standards and stick to them.

It may or may not pay a railway company to manufacture. It is highly probable that it may not if the business is not closely looked after, and close attention is the only way to know the truth, and I am of the opinion that there are few roads that would not greatly benefit by a careful enquiry into this matter, and the establishing of a system whereby it could, and would, be watched carefully.

The foregoing paper was read before the Railway Storekeepers' Association recently.

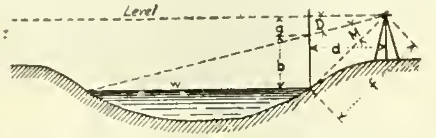
◆

Some Methods of Finding The Width of a Stream.

By H. A. Kohnharst, Lexington, Ky.

Where it is desirable in surveying to find the approximate width of a stream of moderate size, without having to cross it, one of the following methods may be found of service. Existing formulas will probably be found more accurate for streams of considerable width, and the use of the proposed ones will be more or less limited, in consequence. The advantages claimed over other ways are, the short time taken, and the fact that only one set-up is required.

The operations are as follows: Set up a transit on the bank, at a convenient distance from the edge of the water. Level the telescope, and have the rodman hold the rod as close as possible at the edge of the water. Take the reading, which is a + b. Then depress the telescope and focus at the opposite edge of the water, and take the reading on the rod. Call this b. If the first formula is used, the horizontal distance from the plumb line of the instrument to the edge of the water must be measured. Call this d. Let w be the width sought. Then we have two similar right triangles if the rod has been held plumb, which should be done. From the proportion of the sides,



$$w = \frac{bd}{a} \quad \ldots\ldots\ldots\ldots\ldots (1)$$

This method may be used if only a level is available, although the determination of the horizontal distance d to the edge of the water may be found somewhat awkward.

Where the transit is used, take the angle of depression, D, the reading b as taken in the first formula, and use this formula:

$$w = b \cot D \quad \ldots\ldots\ldots\ldots (2)$$

A third method is to obtain the inclined distance f, from the pivotal centre of the telescope to the edge of the water, and then to read the two vertical angles, one, D, from the horizontal to the opposite side; the other, M, from the opposite side to the nearer edge of the water, if the bank does not interfere with the line of sight. This gives three quantities in a scalene triangle, and, by the law of sines,

$$w = \frac{f \sin M}{\sin D} \quad \ldots\ldots\ldots\ldots (3)$$

The accuracy of the first formula will be increased if the distance of the set-up from the water is nearly equal to the width of the stream, as then the two triangles approach each other in size. The second formula was found to be more accurate than the first, by actual test, across a 90-ft. stream, though it may not be in all cases. Conditions in a particular case will determine which of the three formulas is to be used.—Engineering News.

◆

The Board of Railway Commissioners, July 18, granted leave to the White Pass and Yukon Ry. to reopen the case relative to its freight rates. The Board made an order for reduction in Jan., the operation of which has been suspended pending the rehearing, which has been set down for Oct.

Among the Express Companies.

Press reports from Regina, Sask., July 6, state that the Dominion Ex. Co. has abandoned its appeal against the recent judgment, which gave the city the right to tax the company's offices here.

The Board of Railway Commissioners has ordered the Dominion and Canadian Ex. Cos. to perform a specified collection and delivery service in Belleville, Ont., to perform similar services on both sides of all streets there, and to fix municipal boundary lines in which municipal collection and delivery services are established.

The Canadian Northern Ex. Co. has discontinued its service west of Kindersley, Sask., closing offices at the following places: Alsask, Fairmount, Fuller, Harwell, Merid and Pinkham, Sask. The office at Vandura, Sask., has also been closed, and waybill offices have been opened at Rosebank, Man., and Langbank, Sask.

In 1909 and succeeding years the Dominion Parliament voted sums for the purpose of promoting the development of a traffic in fish from the Maritime Provinces to inland points in Canada. The Minister of Marine stated in the House of Commons recently that the total weight of fish transported had been 7,276,847 lbs., of which 59,672 had been transported by freight in the financial year of 1907. The total weight carried in the three succeeding years by express and freight was as follows:—

	Can. Ex.	Dom. Ex.	Freight	Total
1908-09	190,691	173,028	213,723	577,442
1909-10	1,239,443	1,572,570	157,520	2,969,533
1910-11	1,599,958	1,837,932	1,837,932	3,670,200

The figures for 1910-11 are not complete, as the returns are not yet all in.

◆

Telegraph and Cable Matters.

W. M. Thompson is reported to have been appointed local manager, C.P.R. Telegraphs at Saskatoon, Sask., vice Skatebol, resigned to enter private business.

Press reports from Regina, Sask., state that the C.P.R. has abandoned its appeal against the judgment which recently gave the city the right to levy taxes on the company's telegraph offices there.

B. S. Jenkins, General Superintendent, C.P.R. Telegraphs, Western Lines, was in Vancouver recently on inspection trip, and is reported to have stated that the rapid development of territory necessitated increased telegraphic facilities, and that two new lines would shortly be added to the system, between Field and Kamloops.

At the recent annual convention of the Association of Railway Telegraph Superintendents at Boston, Mass., F. E. Camp, Inspector of Telegraphs, C.P.R., Revelstoke, B.C.; E. A. Speer, Inspector of Telegraph Construction, C.P.R., Toronto, and E. M. Payne, Inspector of Telegraphs, C.P.R., Winnipeg, were elected as active members. A paper on some hints was read by W. J. Camp, Electrical Engineer, C.P.R. Telegraphs, Montreal.

J. T. Phelan, Superintendent of Government Telegraphs, returned to Prince Rupert, B.C., at the end of June, from an inspection trip up the river and into the Naas district. He reported that work was somewhat impeded in the latter district, but that the second gang, stringing wire from Alice Arm is progressing favorably from that point across the Naas River. He stated that the telegraph line to Stewart would be completed before the winter, as also would the line to Goose Bay.

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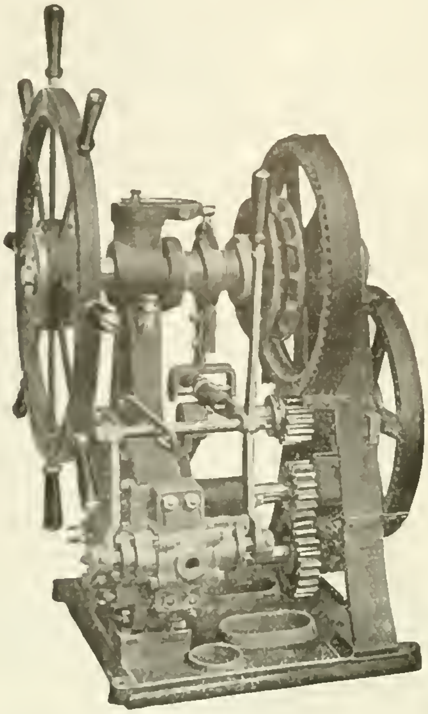

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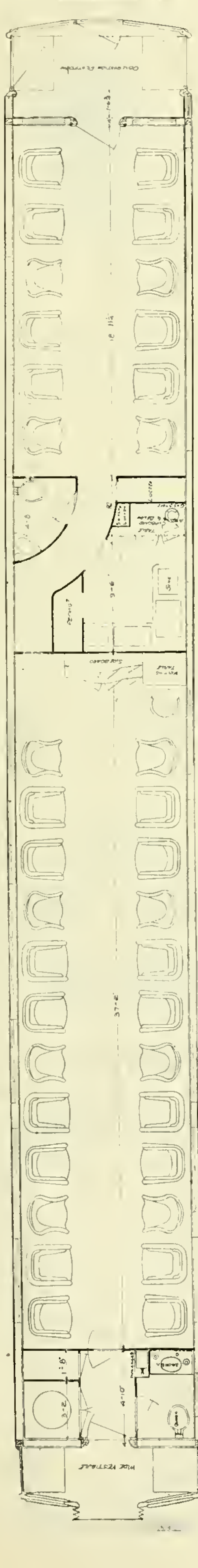


Parlor-Buffet Cars being built by Canadian Pacific Ry. For description see July issue, page 667.

Railway Rolling Stock Notes.

The International Ry. of New Brunswick is reported to have purchased a locomotive from the Intercolonial Ry.

The G.T.P.R. has received two colonist cars, nos. 2028 and 2029, from the Canadian Car and Foundry Co., Montreal.

The Canadian Northern Ry., between June 15 and July 15, ordered 40 thirty ton flat cars, 150 box cars, 15 first class coaches, 10 second class coaches, and three dining cars, from the Canadian Car and Foundry Co., Montreal.

The Temiskaming and Northern Ontario Ry. has received one American railroad ditcher from the American Hoist and Derrick Co., St. Paul, Minn., and one parlor cafe care, the Sesekinika, from the Canadian Car and Foundry Co., Montreal.

Press reports recently stated that the Canadian Northern Ry. had placed an order for 20 consolidation locomotives. We are officially advised that this is not an additional order to those already mentioned in our columns. The order for 20 consolidation locomotives was mentioned in our Jan. issue, and details were given in our Feb. issue. These locomotives will be equipped with the Schmidt superheater.

The New Brunswick Coal and Ry. Co. has added to its equipment a combination first class smoker, baggage and postal car. It was built in Moncton, N.B., and is 55 ft. long, the exterior finished in Pullman green and gold leaf. The first class compartment is finished in light ash, the window sashes in cherry, and fitted with reversible seats upholstered in green plush. The smoke room is similarly finished with pantasote upholstering.

The Canadian Northern Ry., between June 15 and July 15, received the following additions to rolling stock: three second class coaches, two first class coaches, and 40 flat cars, from the Canadian Car and Foundry Co., Montreal; four second class coaches and 55 stock cars from the Crossen Car Manufacturing Co., Cobourg, Ont.; 30 Hart cars from the Hart-Otis Car Co., Montreal; six 10-wheel locomotives from the Montreal Locomotive Works, and 110 box cars from the Nova Scotia Car Works, Halifax.

The Intercolonial Ry. has ordered the following rolling stock: two Pacific and three 10-wheel locomotives from the Canadian Locomotive Co., Kingston, Ont.; 230 thirty ton steel frame box cars, one refrigerator car, two baggage cars, 20 forty ton steel underframe platform cars, 25 Hart-Otis all steel dump coal cars, 50 tons capacity, from the Canadian Car and Foundry Co., Montreal; 50 forty ton steel underframe platform cars, 50 forty ton wood platform cars, two full postal cars, and two standard stock cars from the Nova Scotia Car Works, Halifax, N.S.

Following are the chief details of the refrigerator car which the Intercolonial Ry. has ordered from the Canadian Car and Foundry Co., Montreal:—

Capacity	60,000 lbs.
Length over end sills	36 ft.
Width over side sills	8 ft. 11 in.
Door opening	5 ft.
Bolsters	Simplex
Draft springs	M.C.B. class G
Couplers	Janney cast steel, shank 5 by 5 in., butt ends 8½ in.
Air brakes	Westinghouse K.C. 812
Trucks	Arch bar type

Following are the chief details of the 207 box cars which the Canadian Northern Ry. has ordered from the Canadian Car and Foundry Co., Montreal:—

Length inside body	35 ft. 10¾ in.
Width inside body	8 ft. 6⅛ ins.
Height top of floor to bottom of carlin	8 ft.
Length over end sills	36 ft. 9¾ ins.
Width over side sills	9 ft. ¾ ins.
Width at eaves	9 ft. 7⅜ ins.
Height over all	14 ft.
Truck centres	26 ft. 9¾ ins.
Door opening	7 ft. 6 ins. by 6 ft.
Bolsters and brake beams	Simplex
Draft springs	M.C.B. 6¼ by 8 ins.
Air brakes	Westinghouse K.C. 812
Trucks	Arch bar type
Journal boxes	M.C.B. cast iron
Axles	Steel
Wheels	Cast iron, 33 ins.
Brake shoes	Steel back

Following are chief details of 40 thirty ton flat cars, which the Halifax and South Western Ry. is having built by the Canadian Car and Foundry Co., Montreal:—

Length over end sills	36 ft. 9¾ ins.
Length over dead woods	37 ft. 9¾ ins.
Width over side rails	9 ft. ¾ in.
Width over decking	9 ft. 3 ins.
Width over stake pockets	10 ft. 1½ ins.
Height top of rail to top of floor	4 ft. 1 in.
Top of rail to centre of coupler	2 ft. 10½ ins.
Top of rail to top of brake mast	6 ft. 3 ins.
Body bolsters	Simplex
Couplers	R. E. Janney
Draft springs	6¼ by 8 ins.
Air brakes	Westinghouse K.C. 812
Trucks	Arch bar type
Truck bolsters	Simplex
Side bearings	Susemihl
Brake beams	Simplex
Journal boxes	Cast iron
Journal bearings	M.C.B.
Brake shoes	Steel back

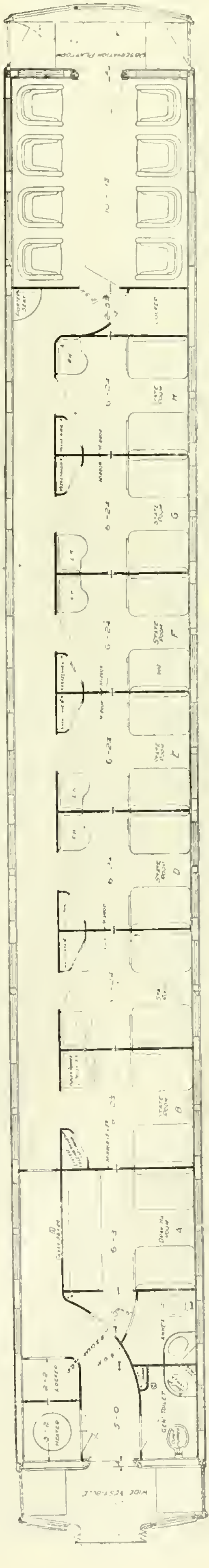
Following are chief details of the 13 steel underframe flat cars, which the C.P.R. is having built by the Canadian Car and Foundry Co., Montreal, as mentioned in our last issue:—

Length between channel and sills	41 ft. ¼ in.
Length over dead woods	42 ft. 2 ins.
Width over frame	8 ft. 10 ins.
Width over sill pockets	9 ft. 7⅝ ins.
Width over decking	9 ft.
Height, top of rail to top of decking	4 ft. 2¾ ins.
Height of coupler from rail	2 ft. 10½ ins.
Wheel base of trucks	5 ft. 4 ins.
Draft springs	M.C.B. Class G
Air brakes	Westinghouse K.C. 812
Trucks	Arch bar type
Wheels	Cast iron, 33 ins., 695 lbs.
Axles	Steel M.C.B.
Journals	5 by 9 ins.
Journal boxes	McCord malleable
Springs	C.P.R. standard 40 ton
Brake beams and bolsters	Simplex
Side bearings	Susemibl
Journal bearing wedges	Drop forged
Brake shoes	Steel back

Following are the chief details of the 230 steel frame box cars which the Intercolonial Ry. has ordered from the Canadian Car and Foundry Co., Montreal:—

Capacity	60,000 lbs.
Length inside body	36 ft.
Width inside body	8 ft. 6½ ins.
Length between end sills	36 ft. 11½ ins.
Width over side sills	8 ft. 9½ ins.
Width at eaves	9 ft. 3½ ins.
Height top of brake mast	13 ft. 9½ ins.
Side door opening	5 ft.
Air brakes	Westinghouse K.C. 812
Couplers	Janney cast steel, shank 5 by 5 ins., butt ends 8½ ins.
Draft springs	M.C.B. Class G
Trucks	Arch bar type
Axles	Steel
Bolsters and brakebeams	Simplex
Side bearings	Susemihl
Journal bearings	M.C.B.
Journal boxes	McCord
Journal wedges	Drop forged
Wheels	M.C.B. 33 ins., cast iron

Following are the chief details of the 20 steel underframe flat cars, which the Intercolonial Ry.



Compartment Sleeping Cars being built by the Canadian Pacific Ry. For description see July issue, page 66.

has ordered from the Canadian Car and Foundry Co., Montreal:—

Capacity	40 tons
Length between end sills	36 ft.
Length over side sills	[illegible] ft. [illegible] ins.
Width over side stakes	9 ft. 7⅝ ins.
Centre to centre of trucks	26 ft. 1¾ ins.
Air brakes	Westinghouse K.C. 812
Couplers	Janney cast steel, 5 by 5 ins. shank, 8½ ins. butt ends
Draft springs	M.C.B. Class G
Trucks	Arch bar type, 80,000 lbs. capacity
Axles	Steel
Bolsters and brake beams	Simplex
Side bearings	Susemihl
Brake shoes	Steel back
Journal bearings	M.C.B.
Journal boxes	McCord
Journal wedges	Drop forged
Truck wheels	M.C.B. 33 ins., cast iron

The C.P.R., between July 13 and 24, placed orders for the following rolling stock, at its Angus shops, Montreal: 102 box cars, one ballast car, two flat cars, six stock cars, three vans and one flat express car.

The C.P.R. between July 13 and 24, received the following additions to rolling stock: 376 box cars, 288 stock cars, 46 refrigerator cars, eight tourist cars, 22 suburban cars, two sleeping cars, 23 vans, one snow plow, one stores supply car, six dining cars, two second class cars, 20 ballast cars, two observation sleeping cars, nine D.10 locomotives, and one Mallet locomotive, from its Angus shops, Montreal; five D.10 locomotives from the Canadian Locomotive Co., Kingston, Ont.; one Lidgerwood unloader from Allis-Chalmers-Bullock, Ltd., and one ballast spreader from the U.S.

Following are the chief details of the two Pacific and three 10-wheel locomotives which the Intercolonial Ry. has ordered from the Canadian Locomotive Co., Kingston, Ont.:—

	Pacific.	10 wheel.
Weight on drivers	133,55[illegible] lbs.	126,000 lbs.
Weight in working order	19[illegible],550 lbs.	155,000 lbs.
Wheel base, rigid	12 ft. 7 ins.	11 ft. 1 in.
Wheel base, total, engine	31 ft. 6 ins.	24 ft. [illegible] ins.
Wheel base, engine and tender	57 ft. 10¼ ins.	51 ft. 4½ ins.
Length over all	67 ft. 3¼ ins.	60 ft. 8½ ins.
Heating surface, firebox	162 sq. ft.	165 sq. ft.
Heating surface, tubes	2,554 sq. ft.	1,885 sq. ft.
Heating surface, total	2,716 sq. ft.	2,050 sq. ft.
Driving wheels, diam.	72 ins.	63 ins.
Driving wheel centres	Cast steel	
Driving journals	9 ins. by 12 ins.	
Cylinders, diam. and stroke	21 by 28 ins.	20 by 26 ins.
Boiler type	Radial stayed, wide firebox	Radial stayed, ext. wagon top
Boiler pressure	200 lbs.	200 lbs.
Tubes, no. and diar.	232 2¼ ins.	27[illegible] 2 ins.
Tubes, length	19 ft.	13 ft.
Brakes	Westinghouse	American E.T.
Weight of tender loaded	122,2[illegible] lbs.	120,000 lbs.
Capacity, water	5,000 imp. gals.	5,[illegible]00 imp. gals.
Capacity, coal	10 tons	10 tons
Tank style	Water bottom	U shape
Truck style	4 wheel simplex bolster	4 wheel
Wheels, diar.	36 ins.	36 ins.
Wheel type	Wrought iron centres	Steel tires
Journals		5½ by 10 ins.
Brake beams	Simplex	Simplex

◆

Vessels Removed from the Register.—The following vessels were removed from the register during May, for the reasons assigned:—Steam, Cheronea, St. John, N.B., 2,060 tons, sold to foreigners; [illegible], Windsor, N.S., 267 tons, lost at [illegible]. Sailing, Audley B., St. Andrews, N.B., 1[illegible] tons, lost at sea; D. Cronan, Quebec, 1[illegible] tons, out of existence; Evelyn, Charlottetown, P.E.I., 167 tons, transferred to Barbados; F. W. Pickels, Quebec, [illegible] tons, lost at sea; G. Walter Scott, St. John, N.B., [illegible] tons, broken up; [illegible], Quebec, 27 tons, broken up; Sarah Jane, Windsor, N.S., 17 tons, broken up; [illegible], [illegible], N.S., 79 tons, stranded.

J. [illegible] has been appointed [illegible] Manager, Canadian Northern Telegraph Co., [illegible]. He has lived in Calgary, Alta., for some time, and was for a number of years in the Great North Western Telegraph Co.'s service at Toronto.

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The Use of Tee Rails in Street Railway Construction.

By F. G. Simmons.

Mr. Simmons, who is a Canadian by birth, and is Superintendent of Construction and Maintenance of Way of the Milwaukee Electric Ry. and Light Co., read the following paper recently before the Engineering Society of Wisconsin, of which he is President, and we are indebted to him for having furnished us with a copy of it.

The title of this paper refers solely to paved streets, as we think anyone with any knowledge of the subject will admit that where a street railway is built as an exposed track or in unpaved districts, there is no question as to the use of the type of rail commonly known under the designation "tee." The fact that the question is raised where tracks are to be laid in paved streets is, of course, the only reason for the preparation of this paper. Arguments are urged on both sides and it is the purpose of the author to present as many of these arguments both for and against the use of tee rail as he can find and with each argument to present the best counterbalancing argument he can find or devise.

No mechanical method or device is perfect and it is therefore the desire of a conscientious engineer in investigating any given problem, for the purpose of determining a course of procedure, to ascertain as accurately as possible all arguments for and against any particular method or device. That one which investigation shows to be supported by the best and most logical representation and arguments it is fair to assume is the most correct, and therefore the most desirable. In preparing this paper the author believes that in presenting and analyzing all the arguments he has found available he may make it easier for many busy engineers to determine upon which side lies the stronger argument and thus arrive at a decision more in keeping with experience and fact than might otherwise be possible.

Practically all engineers in charge of street railway work are unqualifiedly in favor of the use of tee rail and where an exception occurs it is always in one of the very largest cities of the country, the only cases that have come to the author's knowledge being in New York Philadelphia and Chicago. In these three cases the engineers all agreed that tee rail was preferable in such places, as the team travel was not too heavy on the track portion of the street, but that when a constant stream of vehicles was encountered on this space, a girder or grooved girder type of rail was preferable. We wish to urge in this connection that where the track portion of the street is so constantly occupied by vehicles as to make this argument tenable, it has become manifestly inadvisable to continue surface lines and the substitution of either elevated or underground means of transit has become imperative. Where surface congestion has become so great that the surface street cars are limited in their average attainable speed by a constant stream of vehicles, the transit provided is absolutely undesirable and should be replaced by some more efficient method.

One of the arguments most insisted on by those who oppose the use of tee rail is that the paving along the rail is subjected to extreme wear and ruts out with undue rapidity. Now, the undue wear on the street paving along the gauge line of the tee rail is undoubtedly caused, or has been caused in the past, by inadequate methods of laying the paving abutting this point. At no other point on the street can there be any difference in wear whether the rail is tee, girder, grooved girder or any other kind, providing you grant that you are not trying to create a skidway for teams in the constructing of a street railway track. The increasing demand for expeditious transit in our rapidly expanding cities would seem to make the team skidway idea ridiculous.

The paving used in conjunction with all track construction should undoubtedly be of the block or brick variety; the necessity for minor repairs to the track structure making a sheet variety of paving altogether inadvisable. It is the opinion of the author that any engineer urging the use of sheet asphalt paving in connection with street railway tracks is either inadequately educated as to the results to be obtained, wilfully oblivious to the interests of the street railway company or personally interested in the promotion of asphalt paving.

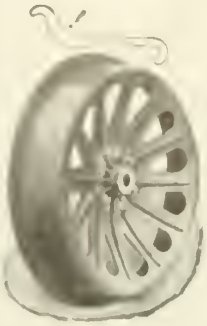
We think it is rapidly becoming apparent to all that asphalt paving in contact with or immediately adjoining the rails is not desirable and one of the great and ruling reasons therefor is this:—The rails being of steel, the vehicular traffic passing back and forth over and along them is bound to wear or scoop out the asphalt immediately adjacent to them. It has been considered advisable in the past to place rows of granite blocks or bricks on each side of the rails, but while this does to a large extent take up the minute vibration which is incident to the somewhat elastic foundation necessary, it only serves to transfer the undue wear to a point further from the rail itself and does not remove this objection. Many cities have and are requiring the use of a grooved girder rail, but the writer submits and maintains that this does not preserve the integrity of the abutting asphalt paving to any greater extent than in the case of the ordinary and more serviceable tee rail. In Minneapolis, where the street railway company maintains only that portion of the paving inside the rails of its tracks and the city maintains all the paving from the rail to the curb, they consider it advisable to pave in the tracks with granite or sandstone blocks, no matter what the character of the paving that is used for the remainder of the street, and when asphalt is used for the city's portion, the city places two rows of granite blocks against the outside rails, but, as argued above, this only serves to transfer the point of wear; it does, of course, not preserve the abutting asphalt from the disintegration set up by the rail vibration.

Other types of paving are numerous and the writer recommends for use on heavily traveled streets where street railway tracks exist, granite in the case of heaviest travel, or brick for business streets not heavily traveled. For residence streets where street railway tracks exist, we believe that with proper methods used, a satisfactory paving may be secured of either brick, creosoted block or some paving of similar characteristics. Asphalt, properly laid, has sufficient field on boulevards and residence streets where no street railway tracks are present.

Too much attention has been paid in the past to the contentions of the various contractors and supply-men, whose interests usually extended only to securing a market for their products. Arguments of this character should be absolutely ignored and a determination made only on the findings as to conditions and physical requirements. Petitions from property-owners should also be ignored except only as they can show a thorough knowledge of the subject. The writer has encountered cases where types of paving have been laid on certain streets at the solicitation of the abutting property owners when every expert and engineer possessing any knowledge of the subject whatever was aware that a mistake was being made, and we recall one case in Milwaukee, when a brick paving was laid in this manner on six blocks of street where the traffic was so heavy that the bricks—which were not first class to commence with—were worn through to the concrete foundation, in places, within six months of their installation.

When the evolution of the horse railway into the mechanically propelled street railway began, the first successful installations were those of the cable railways. In a number of the western cities no departure was made from the use of tee rail, a heavier section only being used. In many of the eastern cities, however, it was thought advisable to develop a tram-girder type of rail which later has been modified into a grooved girder. The original idea obtaining at that time was the accommodation of vehicular traffic. How erroneous this was many of us have since learned, the necessity for rapid transit having become so insistent that nearly everyone understands the importance of keeping the vehicles off the tracks in order that the great street car riding public may come and go at a rate much in excess of the slow moving horse tram-car. Many cities which a few years ago were demanding the installation of a tram or grooved girder rail are now convinced that a much better and more enduring type of construction may be obtained by the use of the so-called Shanghai tee rail, and we believe its use will soon be general.

The method of applying the paving adjacent to the gauge line of the rail has been, through the development of the various types of permanent paving, the most difficult one. A prejudice has existed, and in some quarters still exists, in favor of a groove, either moulded or cut in the blocks or bricks, and many arguments are urged in support of this method. We wish, however, to submit the fact that up to the present it has proven anything but satisfactory. In granite the best results are probably evident, but even here the difficulty of obtaining a smooth and even cutting of the hard material is a serious objection and there is no doubt but that in vitrified brick the result is absolutely disastrous, the sharp edge of the groove wearing away at once and the life of the material at this point is subjected to undue wear from the beginning. A new method of treating this gauge line proposition is coming to the fore and



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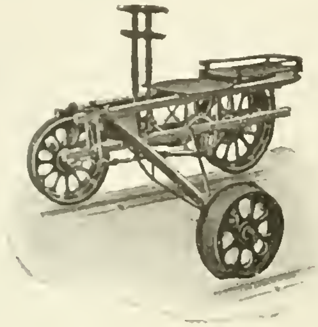

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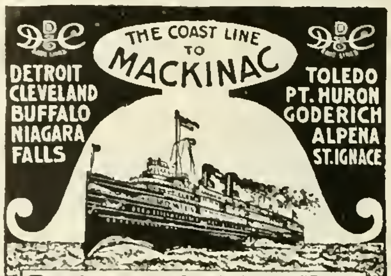

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rapidly gaining favor all over the West and Middle West. This consists simply in depressing the regular block or brick and extending it under the head of the rail at the gauge line, giving the paving a flat crown between the rails of the tracks. We have adopted this method in Milwaukee and find that it works very well indeed, after about four years of actual experience. It has been adopted in a number of other places with uniformly good results. Many people have objected to this type of construction on the ground that it offered too much obstruction to the team travel passing on the streets, but actual tests show that on the average the resistant forces are less for vehicles passing in all directions than when two grooves are to be overcome; and we wish to say again that the miles of this type now in place in Milwaukee are giving very satisfactory results.

It might be well to say at this time that the use of a 7 inch Shanghai tee rail for city track construction has been adopted and is recommended as best practice by the American Electric Railway Engineering Association, and this action has been concurred in by the Central Electric Association, and will undoubtedly secure the approval of all the local electric railway associations of the country, and I wish also to say to the large number of municipal officers present that any street railway corporation of any acumen whatever is just as desirous as you can possibly be to obtain the best results which can be achieved, both as to durability of paving and minimum resistance to vehicular traffic on account of the presence of the rails.

In discussing the gauge line question with a prominent municipal officer recently he urged that a narrow groove was permissible, because the era of the narrow tired vehicle was rapidly coming to a close and auto tires and auto truck tires would soon supersede all the old flat and narrow metal tires. The author believes this is so, but this would entirely do away with the arguments against the method of laying the paving under the head of the rail, as the skidding of vehicles is practically the only bad effect to be feared and this cannot occur in the case of auto and auto truck tires.

George Weston, of the Board of Engineers in control of the entire street railway situation in Chicago, speaking before the American Electric Railway Engineering Association at its session at Denver on Oct. 5, 1909, and discussing the recommendation of the committee on way matters said in part: "I believe every engineer who has studied track construction and has anything to do with its maintenance and its care would prefer a tee rail track, provided the pavement can be laid in a permanent manner that will withstand wagon traffic, abrasion, etc. We have laid very little of the tee rail track construction in Chicago up to this time, and where we have undertaken to install it we have met with serious objections from aldermen and other city officials, teamsters and citizens generally, who seem to object to the use of tee rail on account of the pavement. The street railway people believe the objection is due principally to prejudices based upon misinformation. The paving done in the tee rail track construction was brick, with a special nose brick to form a groove for a flangeway next to the rail. A great amount of heavy teaming exists on some portions of the streets on which this track was laid, resulting in the abrasion or breaking down of this groove or nose brick, and we have recently adopted a method of laying the track which is illustrated in the paper under discussion to-day, the ordinary paving brick being laid against the web of the rail and crowned in the centre. We believe from the experience we have had with the nose brick that this method of paving will be more satisfactory. We have not tried as yet the use of granite block, along the side of the rail, but I am favorably impressed with the advantage to be derived from the use of this superior wearing material."

Speaking in the same discussion at Denver, Mr. Cran, one of the prominent engineers connected with the electric railways of Connecticut, said in part, "We are thoroughly in favor of the tee rail, and while we have never made what might be called official standards, and promulgated them generally, we have adopted three types of tee rail. One is the 5-in. 80-lb. A.S.C.E. section, which we use for trunk line interurban work, and even for work in small towns we find that we can construct a 5-in. or even a 6-in. macadam roadway with that rail and have very good success with it. Then we use the 7-in. 95-lb. tee rail, Milwaukee section, such as Mr. Simmons provides, or section 273. The matter of a groove brick at the rail is a delusion, as far as my experience is concerned, and I do not believe in it. The groove wears out under team traffic and produces a rut there into which narrow tread wheels get."

Walter H. Evans, of the Indiana Union Traction Co., speaking at the same time, said: "In connection with the tee rail section, which is recommended by the committee, I have been connected with cities where there was absolutely nothing but tee rail, with the exception of what old rail it had not been found necessary to replace, and in connection with what Mr. Winsor has said complimentary to the city of Denver, I might just say that Denver was probably the first city in the country to adopt tee rails and they have used nothing else since. In my opinion the tee rail is largely responsible for the excellent track condition which you see here to-day."

Mr. Bong, of the Salt Lake City St. Ry. Co., discussing the same matter, said: "In regard to the remarks on tee rail construction, I agree with the ideas of the gentlemen who have spoken on that subject. I believe the engineers should stand solidly for the tee rail, and I believe that finally by fighting for it the municipal authorities will come to time, for as a matter of fact the best tracks maintained and operated are of tee rail construction. In Salt Lake City we use nothing but tee rail, and I believe today we have a very good construction. We know that Denver has used the tee rail for years, and it has proved a success. In Salt Lake City we have some girder rail construction which has not proved a success, but a failure. The ball wears and the wheels cut down to the flanges, which causes more friction and requires more power to pull the cars. It is claimed that the girder rail helps the teamsters, but I think that is a mistake, as they get into the ruts and cannot get out without breaking a wheel. That has been the experience in most cities."

G. G. Young, consulting engineer, of New York City, in a written discussion of the subject read before the Association at this same time also said in part: "Your committee on way matters has presented an interesting and valued report, and it is hoped that the discussion will result in some action in recognition of the advantages and adaptability of the use of tee rails in paved streets, and for all classes of traffic conditions. The companies and cities that have had the greatest experience with the use of tee rails in paved streets are its strongest advocates, and therefore their opinions must have the most weight. The question of the proper dimensions and type of rail has been heretofore so dependent on the types and kinds of paving that the two questions should be considered together, and as the question of economical maintenance is acknowledged by the committee to be of such serious importance it would seem most proper to consider the matter of economical maintenance concurrency with the question of the selection of the proper rail and paving. Where a suitable concrete base is used for both track and paving foundations there is no difficulty in laying a smooth top paving of a type suited for any vehicular traffic in connection with the use of a standard section of tee rail, and, if properly designed and constructed the pavement should not wear in ruts. Tee rails present much less metal on the street surface and therefore are better for street traffic, and can be made satisfactory for all classes of street traffic by adoption of the proper type of paving. Companies now using the flange tread type of girder rail would find that tee rail would be cheaper and more satisfactory, and the street traffic would not produce ruts along the rails if modern smooth paving on concrete base was used.

"In every case that has come under my observation and experience tee rail has been locally acknowledged as very much quieter, and its only objection is an assumed one of difficulty in paving, which does not exist, in fact, where pavements are properly laid on a suitable concrete base."

(*To be continued in Sept. issue.*)

Electric Railway Notes.

The British Columbia Electric Ry. has received two electric locomotives.

Four single truck cars for the Regina, Sask., Municipal Ry. have been received from England.

The Pay-As-You-Enter Car Corporation has declared a quarterly dividend of 1¾% on the preferred stock.

Charles Hugill has been appointed Track Superintendent, Sandwich, Windsor & Amherstburg Ry., vice T. Kinney, deceased.

The Moose Jaw Electric Ry. has received two 21 ft. electric cars, 31½ ft. over all, mounted on 21-E trucks, from the Ottawa Car Co., Ottawa, Ont.

The Port Arthur and Fort William Electric Ry. has received two 33½ ft. pay-as-you-enter cars, 46½ ft. over all, mounted on 27-G-1 trucks, from the Ottawa Car Co., Ottawa, Ont.

The Sherbrooke St. Ry. has ordered two 18½ ft. single truck pay-as-you-enter cars, 29 ft. over all, complete, mounted on 21-E trucks, from the Ottawa Car Co., Ottawa, Ont.

The Temiskaming & Northern Ontario Railway Commission is said to have under consideration the purchase of some 30-ton interurban cars for the Nipissing Central Electric Ry., which it now controls.

The standard tariff of maximum freight rates between stations on the Vancouver, Fraser Valley and Southern Ry., a line owned by the British Columbia Electric Ry., connecting Vancouver and New Westminster, through Hastings township, has been approved by the Board of Railway Commissioners.

Under the municipal by-law governing the operation of the Hamilton, Grimsby and Beamsville Ry., the company's cars may be stopped anywhere to take up a passenger. As a result of a conference, 90 stopping places between Hamilton and Beamsville have been selected, and the Ontario Railway and Municipal Board is being asked to confirm the agreement.

The Kingston, Portsmouth and Cataraqui Electric Ry., which recently commenced operating a Sunday service, has declined to accede to the request of the Lord's Day Alliance to discontinue the service. The company's franchise allows the operation of cars on Sundays, and the management states that so long as the majority of the citizens desire it, the cars will be run.

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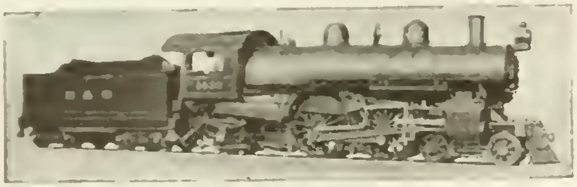

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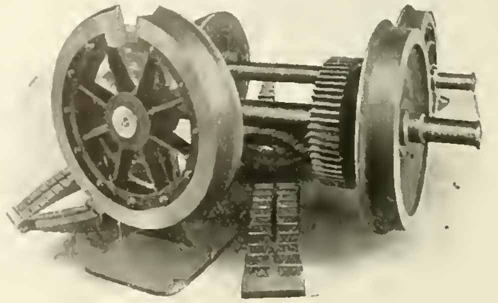

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Guelph, Ont., press reports state that Hilliard Foster, of Toronto, and formerly of Guelph, has been appointed Manager of the Guelph Radial Ry. and the Guelph waterworks, both of which are owned by the city, at a yearly salary of $1,300, to succeed J. J. Hackney, who has been appointed Manager of the Public Utilities at Port Arthur, Ont. Mr. Foster has recently been engaged on trunk sewer construction in Toronto.

The Montreal St. Ry. has ordered 10 steel street car bodies of the pay-as-you-enter type, of which the following are the chief details, from the Canadian Car and Foundry Co., Montreal:—

Length over end sills	32 ft. 3 ins.
Length over platform	45 ft. 8½ ins.
Width over side sills	8 ft. 3 ins.
Wheel base of car	20 ft. 8 ins.
Interior finish	Cherry
Head lining	Composite board
Ventilators	Garland, 8 per car
Seats	Rattan

J. J. Hackney, heretofore Manager the Guelph Radial Ry. and of the water works at Guelph, Ont., has been appointed Manager of Public Utilities at Port Arthur, Ont. The statement that he will have full charge of all public utilities, which in a year's time will include the electric railway, is incorrect, as the award of the Ontario Railway and Municipal Board, placing the management of the Port Arthur and Fort William Electric Ry. under a joint commission of the two cities, does not expire until Dec. 1, 1913.

◆

Projects, Construction, Betterments, Etc.

Birds Hill and Springfield Ry.—Application was made, July 14, to the municipal council of St. Paul, Man., for a franchise for the supply of electricity for power, light and heat purposes, to a syndicate which controls the B.H. and S. Ry. charter. The agreement includes a franchise for the operation of an electric railway. The provisional directors are:—N. McGregor, J. W. McKinley, S. R. Henderson, T. E. Meredith and A. E. Hosken. A similar application is being made to the municipality of Springfield.

The St. Paul's municipal council, July 15, declined to approve of the company's application for a franchise; but promised to consider a new proposition at the August meeting.

Brandon, Man.—The city council has under consideration a bylaw granting a franchise for the building of an electric railway in the city to J. D. McGregor, as representative of a syndicate. Mr. McGregor and the syndicate's engineer, H. E. Mole, discussed the matter with the council, June 30, and the matter is still under consideration. (July, pg. 683.)

British Columbia Electric Ry.—G. P. Norton, H. G. Brown and E. M. Harvey, directors of the company residing in England, completed an inspection of its various plants and interests, July 12, the trip ending at Victoria. The local managers of the company at Vancouver, New Westminster and Victoria, had charge of the party in their own districts. In an interview H. G. Brown said within the last year or so the company had expended over $1,000,000 on the Jordan River power development, and it was expected to have the plant in operation in Sept. The company was face to face with the necessity for the expenditure of $500,000 on relaying tracks in Victoria, and had undertaken the building of a line in the Saanich peninsular at a cost of about $600,000.

The plans for the Saanich extension show a line from the Victoria city boundary, along a private right-of-way to a point on Saanich Inlet beyond Union Bay. It was reported, July 5, that the purchase of the right-of-way had been completed and that a considerable amount of clearing had been done. Some grading has been done by the company's own men, and the rails have been ordered. It is expected that the city terminus of the line will be in the new yards on Douglas St.

Good progress is reported to have been made with the laying of a second track on the original interurban line from Vancouver to New Westminster, and it is expected that it will be completed in the fall.

Work has been started building a machine and car shop at Chilliwack for taking care of the cars on the Fraser Valley line.

Extensions of several lines in North Vancouver are being made.

The railway committee of the Vancouver city council had a conference with the visiting directors of the company upon the franchise question, and it is said that the negotiations which were broken off some months will be resumed. (July, pg. 683.)

Calgary Municipal St. Ry.—Track has been laid on the extension to Crescent Heights, and the line will be in operation early in Aug. Applications are being made for the extension of other lines, one of the proposals coming from a syndicate which purposes to build 11 miles of tracks to open up its property, and hand the line over to the city for operation. This latter proposition was referred to the commissioners for consideration July 4. (July, pg. 683.)

Dunnville, Wellandport and Beamsville Electric Ry.—Grading is reported to be completed between Dunnville and St. Anns, Ont. Ties have been laid and rails are being delivered. It is expected to have this portion of the line completed early in the fall. Surveys are being made for the line from Dunnville to Port Dover, and tenders are being asked for the grading on the first part of this section. A right-of-way has been granted through Walpole tp. for this line. R. T. Gough is Chief Engineer in charge of surveys and construction. (May, pg. 453.)

Halifax Electric Tramway Co.—The Dominion Government has agreed to allow an entrance into the park grounds at Halifax, N.S., at a rental of $5 a year. All that is now required in order to allow construction to proceed is the signing of the necessary agreement with the city council. (July, pg. 683.)

Hamilton, Ont.—The Colonial Engineering Co., of Montreal, has under consideration plans for the building of an electric railway from Hamilton to Galt, Guelph, Berlin and Waterloo, and another from Hamilton to Caledonia, Cayuga and Hagersville, Ont. F. L. Somerville, Toronto, has made some surveys for these lines, and it is said that proposals will be submitted to the Hamilton city council at an early date on behalf of the company. (See Hamilton to Galt, July, pg. 683, and Hamilton, Caledonia and Port Dover Ry., Feb, pg. 167.)

Montreal Street Ry.—Work was started, July 17, on the construction of a new line from St. James St. to Plateau Ave.

Application is being made to the courts by the city council to compel the company to extend certain of its lines under the agreement of 1892. (July, pg. 683.)

Moose Jaw Electric Ry.—A discussion took place at the meeting of the Moose Jaw city council, July 10, with regard to the slowness of construction of the electric railway. It was stated that the line was to have been completed Dec. 1, 1910; that the company had promised from time to time since then that the work would be completed in thirty days' time; and that on a visit to the plant a few days previously Alderman Small had been told that the engines would not be installed for five or six weeks. The city has offered to supply power for the operation of the line if the company would get the track in condition.

Meetings of shareholders was called to be held in Moose Jaw, July 31, for the purpose of organizing the company, and for the purpose of creating a bond issue of $250,000 to be secured by a mortgage of the company's undertaking. (May, pg. 455.)

Morrisburg and Ottawa Electric Ry.—A meeting of shareholders was held at Morewood, Ont., July 28, for the purpose of completing the organization of the company and electing a permanent board of directors. The notice calling the meeting was signed by W. H. Fetterley, President, and R. A. Bishop, Secretary of the provisional directors.

An Ottawa press dispatch, Jan. 19, states that it has been arranged to transfer the head office from Morewood to Ottawa, after the organization of the company, and that it is expected construction work will be started in the fall. (Mar., pg. 259.)

Nelson Street Ry.—A complete car service has been put in operation on the recently reconstructed and extended electric railway in Nelson, B.C. The system at present has a length of 5.5 miles, but it is contemplated to extend it along the valley. (May, pg. 455.)

Nipissing Central Ry.—The undertaking of the N.C. Ry. was taken over by the Commissioners of the Temiskaming and Northern Ontario Ry., June 21, and is vested in a company comprising the members and principal officers of the Commission. This is necessary owing to the fact that the N.C. R. is operated under a Dominion Act of Parliament, and has power to build lines in Quebec. It is proposed to extend the line to the waterfront at Haileybury, and to the T. and N.O. Ry. station at Cobalt, as well as to improve the existing line. (June, pg. 557.)

Ottawa, Smith's Falls and Kingston Ry.—An effort is being made to raise $100,000 to complete the surveys and to lay out this projected line, and meetings are being held at different places along the route to obtain local support. The route projected is along the west bank of the Rideau River from Ottawa to Smiths Falls, and then by the most convenient route to Kingston. At present, however, the provisional directors are only considering the building of the line from Ottawa to Smiths Falls. (May, pg. 455.)

Peoples Ry.—It is said that at the meeting of shareholders held in Berlin, Ont., July 17, a new board of directors was elected, and that resolutions were passed authorizing the prosecution of negotiations for the taking over of the company's property and franchises by the Mackenzie, Mann & Co. interests. (July, pg. 683.)

Port Arthur and Fort William Electric Ry.—Tenders are under consideration for the delivery of material along the track between McIntyre and Neebing rivers as follows:—900 cubic yards of fill material, 1,234 cubic yards crushed rock, and 450 ties. The extension of the line to Mariday Park was opened for traffic July 9. (July, pg. 683.)

Quebec Ry., Light and Power Co.—The Board of Railway Commissioners has authorized the company to open for traffic its eastbound track, from its junction with the main line near Beauport station to Montmorency Falls Park, 3.4 miles; and to build a double track span over the culvert at Beauport, Que.

Negotiations are in progress with the Limoilou council with regard to the route of the proposed line through that town. (July, pg. 683.)

Regina Electric Ry.—The first section of the electric railway in Regina, Sask., has been opened for traffic, and work is being pushed forward on the other sections as fast as possible. The city coun-

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cil has under consideration proposals for the building of additional lines, and has decided to extend the Albert and Broad Street line to Sixteenth Ave., and the Scarth St. line south to Sixteenth Ave. and east to Broad St., and will give further consideration to a proposal to extend the Albert St. line northerly to the city limits. (July, pg. 685.)

Saskatoon, Sask.—The bylaw granting a franchise for the building of an electric railway to the Evans syndicate was passed by the electors of Saskatoon, Sask., July 6, by 472 votes to four. It is said that the company intends to start construction at once. (July, pg. 685.)

Sherbrooke Railway and Power Co.—It was reported at a special meeting of shareholders, July 13, that the old street railway system had been reconstructed, and that the greater part of the extensions in the city had been almost completed. Operations had not been started on the extensions owing to the city's delay in paving Wellington St. This has now been arranged for and the double track on that street laid. (July, pg. 685.)

Toronto Suburban Ry.—Plans were filed, July 7, showing an extension of the present line from Lambton along a private right-of-way, south of Dundas St., as far as the Etobicoke River, on the boundary line between York and Peel townships. The question of the approval of the plans came before the Ontario Railway and Municipal Board July 21. Notwithstanding the filing of these plans the company's engineers were engaged July 17 in securing options on lands within the same area north of Dundas St.

The company proposes to build a line from Lambton Mills, the terminus of the present line on Dundas St., to Guelph, passing through or near Islington, Summerville, Dixie, Cooksville, Erindale, Streetsville, Meadowville, Churchville, Huttonville, Norval, Georgetown, Glenwilliams, Acton, Milton, and Brampton. It has power to build an extension of its Weston line to Woodbridge and to extend its Davenport Road line to St. George St. in Toronto. It is proposed to build a terminal adjoining the North Toronto station of the C.P.R., and of the Metropolitan Division of the Toronto and York Radial Ry.

The officers and directors of the reorganized company are:—President, Sir Wm. Mackenzie; other directors:—R. M. Horne-Payne, London, Eng.; A. H. Royce, Major G. C. Royce, F. H. Phippen, K.C., and L. W. Mitchell, Toronto. (July, pg. 677.)

Operating Rules for Electric Railways

The committee appointed at the Canadian Street Railway Association's annual meeting recently, to compile a code of operating rules for electric railways, met in Toronto July 6, those present being the President, J. Anderson, General Manager, Sandwich, Windsor and Amherstburg Ry., in the chair; E. P. Coleman, Manager of Railways, Dominion Power & Transmission Co.; P. Dubee, Secretary, Montreal St. Ry.; A. Eastman, General Manager, Windsor, Essex & Lake Shore Rapid Ry.; J. E. Hutcheson, Superintendent, Ottawa Electric Ry.; W. R. Robertson, Superintendent, Niagara, St. Catharines & Toronto Ry., and the Secretary-Treasurer, Acton Burrows.

In consequence of the oppressive heat in the city the meeting was held on one of the Royal Canadian Yacht Club's verandahs on Toronto Island, where the committee worked in comfort. The draft of a very complete code of rules was prepared, and the Secretary was authorized to submit the same to the Board of Railway Commissioners for approval.

Electric Railway Legislation in Nova Scotia.

Three acts were passed at the last session of the Nova Scotia Legislature affecting street railways and other public utilities within the province. Two affect existing companies, and the third provides for the granting of provincial aid towards the building of electric railways in parts of the province remote from steam railways, or where the traffic to be developed does not warrant the building of steam railways.

By an act amending the statute law, sec. 11, chap. 1, of the acts of 1909, is amended by adding "and make such extensions as may be required" after the word "facilities" in line 22, and by the addition of a new clause providing that the consent of the Public Utilities Commission is necessary before any public utility shall carry on business within the province.

Another act consolidates the acts affecting street railways, and provides for its application to all street railway or tramway companies. The Public Utilities Commission may make orders for extensions of lines, approve of regulations made by the companies, and make orders as to various matters in connection with the operation of cars. The companies may appeal to the Governor-in-Council from any orders made; the Attorney General is to be notified of any violation of the orders made, and the Supreme Court of the province is given jurisdiction in suits arising in consequence of any order made, and penalties are to be recoverable by civil action. Section 16 provides that "any provisions contained in the act of incorporation of any street railway, and the rules thereunder conferring upon any city, town or municipality powers which are by this act conferred upon the Commission, are hereby repealed"; and section 17 says: "This act shall apply to the Halifax Electric Tramway Co., Limited, only."

Under the provisions of the act granting aid to electric railways, the Government is authorized to grant a cash subsidy not exceeding $2,000 a mile; to loan to a company up to $8,000 a mile, or to guarantee the principal and interest of bonds on lines to be built in such districts as are approved. The lines to which aid is granted are to be built according to approved plans and specifications.

Electric Ry., Finance, Meetings, Etc.

British Columbia Electric Ry.—Gross earnings for May, $398,437; working expenses, $260,437; net operating earnings, $138,000; renewal funds, $29,770; net earnings, $108,230; approximate income from investments, $20,000; net income, $128,230, against $256,806 gross earnings $156,065 working expenses; $100,741 net operating earnings; $17,852 renewal funds; $82,889 net earnings; $16,500 approximate income from investments; $99,389 net income for May, 1910. Aggregate gross earnings for 11 months ended May 31, $3,839,170; net earnings, $1,464,709, against $2,728,437 aggregate gross earnings, and $1,147,106 net earnings for same period 1909-10.

The company, July 15, offered to shareholders £600,000 of new stock, including £200,000 of 5% cumulative preference stock, £200,000 of preferred ordinary stock, and £200,000 of deferred ordinary stock at a premium of one, two and four shillings a share respectively.

Calgary Municipal St. Ry.—A Calgary press report states that the street railway revenue for the first six months of this year was $149,437, and net earnings $49,705.

Halifax Electric Tramway.—Receipts for May, $17,198.82; for June, $23,702; for two weeks ended July 14, $10,966.89, against $15,673.97; $22,421.06, and $9,975.77 for same periods, respectively, 1910.

London St. Ry.—Gross earnings for June, $24,051.91; expenses, $16,841.63; net earnings, $7,210..28; deductions, $2,375.49; net income, $4,834.79. Aggregate gross earnings for six months ended June 30, $127.801.83; expenses, $94,193.01; net earnings, $33,608.82; deductions, $14,269.34; net income, $19,339.48.

Montreal and Southern Counties Ry.—A writ of mandamus has been issued by the courts directing the company to enter in its transfer books 800 shares now held by the Bank of Quebec.

Montreal St. Ry.—Passenger earnings for June, $419,347.46; miscellaneous earnings, $12,679.15; total earnings, $432,026.61; operating expenses, $227,217.47; net earnings, $204,809.14; city percentage on earnings, $43,836.06; interest on bonds and loans, $15,552.79; rent leased lines, $607.10; taxes, $5,000; total charges, $63,995.95; surplus, $140,813.19; expenses per cent. of earnings, 52.59, against $373,258.80 passenger earnings; $11,305.31 miscellaneous earnings; $384,564.11 total earnings; $198,848.62 operating expenses; $185,715.49 net earnings; $35,350.24 city percentage on earnings; $15,036.62 interest on bonds and loans; $552.90 rent leased lines; $4,000 taxes; $54,939.76 total charges; $130,775.73 surplus; 51.71 expenses per cent. of earnings for June, 1910. Aggregate total earnings for nine months ended June 30, $3,438,940.08; operating expenses, $2,015,139.33 net earnings; $1.-423,800.75; total charges, $403,885.42; surplus, $1,019,915.33; expenses per cent. of earnings, 58.60, against $3,091,799.56 aggregate total earnings; $1,806,291.83 operating expenses; $1,285,507.73 net earnings; $361,087.27 total charges; $924,420.46 surplus; 58.42 expenses per cent. of earnings for same period 1909-10.

A Montreal dispatch, July 18, says arrangements have been completed for the financing of the Montreal Tramways Co., and that a meeting of shareholders of the M.S.R. will shortly be held to arrange for the transfer of the company's property and franchises. It is stated that an issue of $9,000,000 of M.T.R. Co.'s 5% bonds will be sold to provide the cash to pay for the M.S.R. stock, and that there will also be issued additional bonds and about $20,000,000 of common stock.

Toronto Ry.—A special general meeting of the shareholders is called for Aug. 14 to sanction an increase of the capital stock by $4,000,000, making the aggregate capital stock $12,000,000.

Toronto Ry.—Gross earnings for May, $400,897; working expenses, maintenance, etc., $193,006; net earnings, $207,891, against $353,792 gross earnings; $172,433 working expenses, maintenance, etc.; $181,359 net earnings for May, 1910. Aggregate gross earnings for five months ended May 31, $1,833,391; net earnings, $879,029, against $1,656,842 gross and $786,460 net for same period 1910.

Winnipeg Electric Ry.—Sir Wm. Mackenzie is quoted as having said, July 13, that the company's offer to the city for the sale of the lines and franchises on the basis of $250 per share would not remain open very much longer. The matter was before the city council at a private meeting on July 13.

Winnipeg Electric Ry.—Gross earnings for May, $295,779; working expenses, $149,699; net earnings, $146,080, against $238,240 gross earnings; $117,812 working expenses; $120,428 net earnings for May, 1910. Aggregate gross earnings for five months ended May 31, $1,576,252; net earnings, $761,448, against $1,289,774 gross and $629.587 net for same period 1910.

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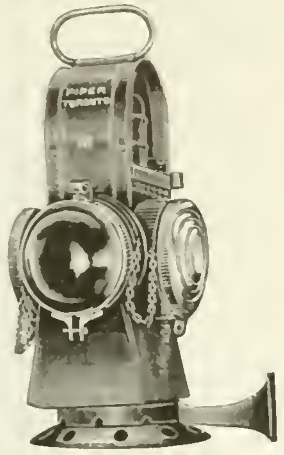
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Chairman, E. E. Horsey, Kingston, Ont.
Secretary, Jas. Morrison, Montreal.

International Water Lines Passenger Association.

President, W. M. Lowrie, New York.
Secretary, M. R. Nelson, New York.

The Shipping Federation of Canada.

President, A. A. Allan, Montreal; Manager and Secretary, T. Robb, 526 Board of Trade, Montreal.

Ship Masters' Association of Canada.

Grand Master, Capt. J. H. McMaugh, Toronto, Ont.; Grand Secretary-Treasurer, Capt. H. O. Jackson, 376 Huron St., Toronto.

The Ocamo-Yarmouth Collision.

Capt. L. A. Demers, Dominion Wreck Commissioner, gave the following judgment at St. John, N.B., recently, which was concurred in by E. C. Elkins and Capt. J. Hayes, assessors:—The court having carefully reviewed the evidence adduced, finds that had the captain of the Yarmouth exercised more discretion upon first entering the wheelhouse and observing the vessel at anchor, he would have noticed a volume of smoke escaping from her funnel—the unmistakable sign of a vessel getting under way—and would consequently have been more vigilant in his lookout. The pilot of the Ocamo, knowing as he did, the significance of the three blasts sounded by the Yarmouth, displayed reluctance to alter the course of his ship, through fear of experiencing difficulty in making his wharf as intended, which reluctance on his part the court interprets as carelessness in the navigation of the vessel he was piloting, for it is the court's opinion that the accident would have been avoided had the Ocamo been steered in midchannel, and not allowed to proceed on her port helm without taking into consideration the influence of the tide on her starboard bow, which naturally had the effect of drawing her closer to the Yarmouth and the wharf than intended. The master of the Ocamo, by his testimony, labored under the erroneous impression that the presence of a pilot on his vessel relieved him of responsibility as to the safe navigation of his ship, and the court holds that upon perceiving the injudicious course pursued by the pilot the captain should have remonstrated with the pilot and insisted upon an alteration in the course, thus affording a wider berth to the Yarmouth, and the captain of the Ocamo is consequently warned to be more assertive of his authority in the future, remembering always that he is master of his ship and therefore solely responsible.

The master of the Yarmouth is reprimanded for his failure in making sure that the harbor was clear within a safe navigable distance before casting off his lines, while the pilot of the Ocamo is severely censured for his action, and the court suggests that the matter be dealt with by the Commissioners as they deem fit.

It is the opinion of this court that the Yarmouth, by casting off her lines upon the approach of a vessel, and the Ocamo, by steering an injudicious course, contributed each to the collision, and both ships are therefore held to be responsible.

Notices to Mariners.

The Department of Marine has issued the following:—

61. June 19.—152. General Canadian list of lights and fog signals, new edition. 153. Quebec, Gulf of St Lawrence, Gaspe bay, Gaspe basin, O'Hara point, lights on wharf to be discontinued.

62. June 23.—154. Ontario, Canadian list of lights and fog signals, new edition. 155. Ontario, Lake Huron, westward of Cove island, whistling buoy replaced by gas and whistling buoy.

63. June 23.—156. British Columbia, Canadian list of lights and fog signals, new edition. 157. British Columbia, Charham sound, chart, Tree bluff to Kinahan islands, issued. 158. British Columbia, Queen Charlotte sound, Bremner island, rock reported northwestward of.

64. June 23.—159. Nova Scotia, Cape Breton island, Cape North lightstation, intended change in characteristic of fog alarm. 160. Quebec, Gulf of St. Lawrence, Magdalen islands, Bird rocks, intended change in characteristic of fog alarm. 161. Newfoundland, west coast, Cape Anguille, intended change in characteristic of fog alarm. 162. Newfoundland, southwest coast, Cape Ray, intended change in characteristic of fog alarm.

65. June 24.—163. Quebec, River St. Lawrence, Mille Vaches river, Sault au Mouton, hydrographic notes. 164. Quebec, River St. Lawrence, Mille Vaches bay, Mille Vaches, hydrographic notes. 165. Quebec, River St. Lawrence, north shore, Escoumains range, daymarks.

66. June 26.—166. Quebec, Magdalen islands, House harbor entrance, buoyage. 167. Quebec, Magdalen islands, Sandy Hook channel buoyed, buoy off Meule rock.

67. June 27.—168. Quebec, River St. Lawrence below Quebec, Empress shoal, gas buoy established. 169. Quebec, River St. Lawrence below Quebec, off Cape Tourmente, gas buoy placed temporarily for dredging purposes.

68. June 27.—170. Canada, Great Britain and Ireland, North Atlantic lane routes.

69. June 29.—171. Nova Scotia, Cape Breton island, east coast, off Neil harbor, whistling buoy established. 172. Prince Edward Island, east coast, Montague river, off French creek, buoy established. 173. Prince Edward Island, north coast, Cascumpexque harbor, Alberton, change in position of range lights. 174. Prince Edward Island, North point reef, position of whistling buoy.

70. June 29.—175. Ontario, Lake Erie, Rondeau harbor, wreck removed. 176. Ontario, Georgian bay, approach to Midland, Snake island, buoy established. 177. Ontario, Detroit river, ballard reef channel, new channel for light draught vessels.

71. July 3.—178. British Columbia, Vancouver island, southeast coast, Esquimalt harbor, Constance cove, mooring buoy placed. 179. Alaska, Revillagigedo channel, Spire island reef, change in character of light. 180. Alaska, Clarence strait, Stikine strait, south entrance, light established. 181. Alaska, Sumner strait, Beauclerc island, light established.

72. July 4.—182. Nova Scotia, south coast, Torbay, Charlo harbor, change in color of range lights. 183. Nova Scotia, south coast, Torbay, Cole harbor, change in color of range lights. 184. Quebec, River St. Lawrence below Quebec, north of Patience island, gas buoy placed temporarily for dredging purposes.

73. July 6.—185. Nova Scotia, Bay of Fundy, Minas basin, Cheverie, light established. 186. Nova Scotia, south coast, Eastern Points harbor, light established. 187. New Brunswick, Chaleur bay, Petit Rocher, change in position of lighthouse.

74. July 7.—188. Quebec, Gulf of St. Lawrence, entrance to Little Natashkwan harbor, buoys established. 189. Quebec, Gulf of St. Lawrence, Seven Islands bay, Pointe Noire, light established on Clark City wharf. 190. Quebec, River St. Lawrence, Ile Verte, light established on wharf.

C.P.R. Trans-Pacific Steamships.

G. M. Bosworth, Vice President, C.P.R., who returned from England, July 21, announced that contracts had been placed for the building of two steamships for the trans-Pacific service between Vancouver and Japanese and Chinese ports. These are to be delivered ready for operation in the spring of 1913, and the estimated cost of each is $2,500,000. They will be operated on a fortnightly schedule. He is also reported to have stated that one of the vessels now running on that route would be taken off and placed on another Pacific route.

The Grounding of the s.s. Stormount.

Capt. L. A. Demers, Dominion Wreck Commissioner, gave the following judgment in Montreal July 12, concurred in by A. F. Nash, and A. T. Haworth, master of the s.s. Manchester Importer at Athens, in the case of the grounding of the s.s. Stormount at Longue Pointe on May 6:—

The court having carefully studied and considered the evidence adduced by the various witnesses is of the opinion that the master and officers of the s.s. Stormount are exonerated from all blame for this accident, but wishes to point out that the master has full responsibility of the navigation of the ship; and whenever he perceives that the pilot, who is simply acting as his adviser as to local conditions, is doing wrongly, it is his duty to check or countermand any wrong orders which may have been given by the pilot; and moreover, the court regrets to say that in this case, owing to the peculiar position in which the master was placed, that he was unable to be on deck in the narrow places in the river St. Lawrence and to be on hand in case of eventualities. The fact of the master being obliged to be on deck from Fort William through the canals up to Montreal is to be greatly deplored, yet his absence from the deck in narrow stretches such as in the river St. Lawrence is censured.

The court is also of opinion that the pilot is wholly to blame for the grounding of this vessel, and he showed a certain amount of ignorance and lack of experience in the navigation of his first vessel. Therefore, in view of the foregoing and with the hope that this will be a lesson to him to exercise greater care in future and to make himself

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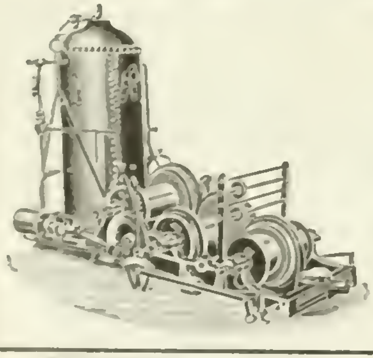

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thoroughly conversant with the conditions of the river, this court will suspend his certificate as pilot for the balance of this year, but will return to him his apprentice pilot's certificate, in order to enable him to acquire the necessary knowledge which all pilots should possess.

◆

Wreck of the s.s. Ben Earn.

The following decision was given by Capt. Demers, Dominion Wreck Commissioner, at Yarmouth, N.S., July 6, and concurred in by B. R. Hilton and J. W. Anderson, assessors, in regard to the wreck of the s.s. Ben Earn, on June 16, on the Salvage Ledge, off Point Blanche, somewhere in the vicinity of Braist Rock. The vessel eventually became a total loss:—

The court having carefully weighed the evidence adduced finds that the master placed too much reliance upon the casual soundings taken and that while they seemed to coincide with the courses steered, they were nevertheless insufficiently frequent to establish that the courses he had traced were being properly steered, as the chart shows that the depths actually found when soundings were taken, were obtainable on both sides of the course steered by the Ben Earn, and the court holds that if soundings had been taken every half hour that they would have undoubtedly discovered that the vessel was more inshore than they actually believed her to be. The court further holds that when the surf was sighted, the captain, instead of starboarding should have gone full speed astern, although his action in this respect would seem justifiable by the fact that the land was on his starboard side, but owing to the slow speed of the ship at the moment, it is held that if the ship had been put full astern when the whistling of the birds was heard, that the accident might have been avoided, although the court is not prepared to assume that it would have been avoided had such action been taken.

In view of the facts above set forth, and taking into consideration the good reputation of the captain, the court will not deal with his certificate, but cannot refrain from censuring him and advising him to exercise more caution, especially when navigating waters whose currents and influences he is unfamiliar with. The officers of the vessel are exonerated.

◆

Atlantic and Pacific Ocean Marine

The Newfoundland Premier, on his return from England, early in July, announced that his Government was prepared to subsidize a direct line of steamships between Newfoundland and Galway, Ireland.

The Harrison Line s.s. Centurion arrived at Vancouver, June 27, on her maiden trip, in the new service which this company has inaugurated with B.C. ports, from Great Britain by way of the Horn.

The British steamships Woolwich and Cromarty have been chartered by Pickford and Black, for the West Indies service, to replace the steamships Sobo and Luristan, the charters of which are about to expire.

The Hudson's Bay Co.'s s.s. Pelican was libelled at Montreal, July 16, on a claim by J. Gagne, diver, for $100 for his services. Bonds were immediately furnished by the company's agents and the vessel released.

A press report from Liverpool, Eng., states that in order to offset the increase of wages due to the recent strike of seamen, the passenger rates to Canada and the U.S. have been increased by from $1.25 to $2.50, and it is possible that an increase in freight rates will also take place.

The North Atlantic Shipping Conference decided, July 13, to continue the present agreement until Oct. 31, when it is anticipated that a new agreement will be signed. A special committee was appointed to consider a number of proposals made and to report to the full conference in October.

A proposal is under discussion in St. John, N.B., to incorporate a company with a capital of $2,000,000, to operate a steamship service between St. John, Cuba and Jamaica. It is proposed to commence with two vessels, suitable for both a freight and tourist trade. E. S. Kirkpatrick, formerly Canadian Trade Commissioner in Cuba, is chiefly responsible for the movement.

The International Mercantile Marine Co.'s report for 1910 shows gross earnings of $38,073,596, against $33,953,208 for the previous year. There was an increase in operating and general expense, and also in the fixed charges. There was a surplus of $4,849,581, against $1,182,335 for 1909. The report states that there are 124 vessels in service, to which must be added six, then under construction.

LIST OF STEAM VESSELS REGISTERED IN CANADA DURING MAY, 1911.

Name	No.	Where and When Built.	Engines, etc.	Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
Alex. Clark...	122,589	Collingwood, Ont., 1911	Screw 29 n. h. p..	91.2	18.3	8.8	99	65	Collingwood, Ont....	A. Montgomery, M.O., Collingwood, Ont
Alluvia.......	130,483	NewWestminister, B.C., 1911	Pa 9 " ..	100.0	23.3	5.0	263	154	New Westminster, B.C	S. Dawe and N. P. Roman, New Westminster, B.C.
Aloha	130,546	Seattle, Wash., 1909........	Screw 7 " ..	39 7	11.4	4.0	16	11	Vancouver, B.C.... .	Snowdon-Bidlake Logging Co.. Vancouver, B.C.
Davy Jones...	130,541	Everett, Wash., 1907	" 6 " .	73.0	12.3	5.4	84	23	"	E. B. Deane, Vancouver, B.C.
Eleanor Mc..	126 956	Victoria, B.C., 1911.	" 2 " ..	37.0	10.6	6.6	15	10	Victoria, B.C...... ..	W. L. McLennan, Victoria, B.C.
Erroch.......	130,481	Harrison River, B.C., 1908.	" " .	20.2	5.2	2.3	2	1	New Westminster, B.C	A. Kilby, Harrison River, B.C.
Flat (1).......	130,542	U. S................. ..	" 1	26.0	9.3	2.2	7	5	Vancouver, B.C......	R H. Elder, Flat Island, B.C.
Holly Leaf...	130,547	Vancouver, B.C., 1911.....	" 7 " ..	56.6	14.2	5.1	24	17	"	H. Bell-Irving Co., Vancouver, B.C.
Isgerude.....	130,544	" 1911......	" 5 " ..	44.0	12.3	5.4	18	12	"	Skeena River Commercial Co., Vancouver, B.C.
John Pratt...	130,421	Sorel, Que., 1911	" 54 " ..	80.5	22.1	11.4	166	78	Montreal	Sincennes-McNaughton Ltd. Montreal
John Young..	130,522	" 1910.	" 48 " ..	84.5	22.0	8.1	170	77	"	Harbor Commissioners of Montreal
Kitsap (2)....	126,800	Ballard, Wash., 1895.......	" 8 " ..	47.0	13.0	4.6	28	17	New Westminster, B.C	R. Douglas, New Westminster, B.C.
Madge A. P..	130,477	Tancook, N.S., 1910........	" " ..	44.8	10.2	5.2	11	10	Lunenburg, N.S......	J. E. Publicover, Blandford, N.S.
Neaniskos....	130,374	Peterboro, Ont , 1911... ...		60.0	11.3	5.3	21	....	Peterboro, Ont.......	Peterboro Canoe Co., Peterboro, Ont.
Nelsara	130,543	Vancouver, B.C., 1911.	" 1 " ..	35.3	7.6	4.0	9	6	Vancouver, B.C......	E. G. W. Wyatt, Vancouver, B.C.
Newmaid	130,482	Steveston, B.C., 1911.......	" 1 " ..	81.4	8.7	3.9	7	5	New Westminster, B.C	Butterfield, Mackie & Co., New Westminster,
Nitche	130 373	Hastings, Ont., 1911..	" 7 " ..	39.0	11.0	6.0	19	13	Peterboro, Ont.......	Randolph Macdonald Co., Toronto
O. Paul......	126,851	Sorel, Que., 1911...........	" 20 " ..	61.0	15.4	6.5	57	26	Sorel, Que.......... ..	J. Paul, Sorel, Que.
Scona.	126,450	Strathcona, Alta., 1910.....	Pa. 4 " ..	120.0	22.0	4.0	114	72	Kenora, Ont	J. Walker, Strathcona, Alta.
Sea Snipe	130,460	Muskegon, Mich., 1911.....	Screw 1 " ..	35.0	8.6	3.8	9	7	Vancouver, B.C.....	A. H. Morton, Vancouver, B.C.
Songee.......	130,548	Vancouver, B.C., 1911......	" 3 " ..	49.6	14.0	5.0	26	18	" ...	W. S. Holland, Vancouver, B.C.
Wilful.......	126,954	Victoria, B.C., 1906	" 4 " .	26.0	6.9	2.8	4	2	Victoria, B.C.........	J. Harper, Victoria, B.C.

(1) Formerly, Goldenrod. (2) Formerly, Eclipse.

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA DURING MAY, 1911.

Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners
Cheticamp..	126,575	Cheticamp, N.S , 1911	Schr.	38.5	11.6	6.3	10	Port Hawkesbury, N.S	P. E. Aucoin, Cheticamp, N.S.
Donald L. Silver.	130,562	Lunenburg, N.S., 1911........	"	105.6	25.8	10.5	94	Lunenburg, N.S......	O. P. Silver, *et al.*, Lunenburg, N.S.
Elizabeth D......	126,807	Meteghan, N.S., 1911.........	"	83.0	22.0	7.8	79	Yarmouth, N.S.	S. D. D'Entremont, M.O., Pubnico, N S.
Ethel M. C.......	130,565	Tancook, N.S., 1909..........	"	41.0	10.3	5.3	11	Lunenburg, N.S......	A. Johnson, M.O., Indian Harbour, N.S.
Gros Ours........	126,577	Grand Etang, N.S., 1911.	"	43.5	11.9	6.5	14	Port Hawkesbury, N.S	E. LeBlanc, *et al.*, Grand Etang, N.S.
I No 1	130,545	Nanaimo, B.C., 1909.........	Scow	55.0	24.4	6.0	73	Vancouver, B.C......	Red Fir Lumber Co., Vancouver, B.C.
James L.	130,564	Tancook, N.S., 1911...... ...	Schr.	56.2	14.0	7.6	32	Lunenburg, N.S......	H. Little, Terence Bay, N.S.
Keta......... ...	126,719	Gagetown, N.B.. 1910	Barge	60.0	21.9	4.0	81	St. John, N.B.... ..	J. S. Gregory, St. John, N.B.
Laurin and Leitch No. 4	130,523	Montreal, 1911..............	Dredge	100.4	31.9	4.1	236	Montreal......	T. Bastien, J. Laurin and W. C. Leitch, J. O., Montreal
M C.G. Boudreau	126,576	Cheticamp, 1911..............	Schr.	51.9	13.7	7.0	22	Port Hawkesbury, N.S	C. G. Boudreau, Cheticamp, N S.
Melanope..	74,550	Liverpool, Eng., 1876.........	Barge	258.2	40.2	28.8	1561	Vancouver, B.C......	C.P.R. Co , Montreal
Muriel M.Richard	130,479	La Have, N.S., 1911...... ...	Schr.	1 2.8	25.8	10.2	97	Lunenburg, N.S ..	W. Richard, M.O., LaHave, N.S.
Nita M. Conrad.	130,476	Mahone Bay, N.S., 1911	"	102.4	25.8	10.8	91	" .. .	J. Conrad, M.O., LaHave, N.S.
Phœbe M........	130,563	Tancook, N.S., 1910.	"	40.6	10.8	5.6	12	"	D. Morash, West Dover, N.S.
Review.	130,478	La Have, N.S., 1911..........	"	72.0	22.8	9.2	74	"	J. R. Rafuse, M.O., Conquerall Bank, N.S.
Right Away	130,561	Tancook, N.S., 1911..........	"	45.0	11.3	6.8	21	"	J. Rood, Halifax, N.S
Roland A. T.	130,480	" 1909..........	"	41.0	10.3	5.2	11	"	C. Tanner, Black Rocks, N.S.
Satelite..........	88,287	Kennebunk, Me., 1860	"	48.8	15.9	5.8	26	St. Andrews, N.B...	R. Brown, Campobello, N.B.
Tantiwana......	126,718	Upper Gagetown, N.B., 1910.	Dredge	66.4	25.1	5.1	159	St. John, N.B.... .	Imperial Dredging & Construction Co., Oromocto, N.B.
Violet F.........	130,566	Tancook, N.S., 1909...	Schr.	42.2	10.3	5.3	12	Lunenburg, N.S.	W. Frederick, M.O., Indian Harbour, N.S.
Westholme No. 3.	126,955	Swanson Bay, B.C., 1910.....	Barge	100.0	32.0	8.0	211	Victoria, B.C.	Westholme Lumber Co., Victoria, B.C.

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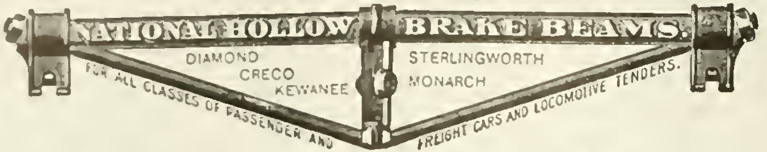
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RAILWAY AND
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The Hudson's Bay Co.'s s.s. Pelican was at Montreal, during July, taking on stores for the company's stations throughout the Bay. This is the usual annual trip made by this vessel from London, Eng. The company has also chartered the s.s. Beothic for a similar purpose. Capt. Smith, who has had considerable experience of the Bay conditions, while in command of the Pelican, in response to questions as to the possibility of maintaining a trans-Atlantic service through the Bay to Fort Churchill, is reported to have said that he did not think that it would be possible for more than three months in the year.

The subsidy contract with the Union Steamship Co. of New Zealand, regarding the mail service between Canada and New Zealand, commencing in August, provides that the contract will be for five years, that the amount to be contributed by New Zealand shall be £20,000 a year, with exemption from harbor and dock dues, that permission be given the contractors to run from Auckland to Sydney, or Melbourne, and to retain any sum contributed by the Australian Government for such service, that the voyage between Vancouver and Auckland be made in 19 days, and that New Zealand shippers shall have the first refusal of all space so long as no subsidy is being paid by Australia.

Maritime Provinces and Newfoundland.

The Department of Public Works received tenders, July 26, for the construction of a breakwater at Brooklyn, N.S.

Capt. W. R. Lugar held an enquiry, at Halifax, N.S., recently into the causes of the stranding of the s.s. Morien, near Parrsboro, early in July.

An order in council has been passed changing the name of the ferry steamboat, which the St. John, N.B., city council has purchased in the U.S., from Newport to Governor Carleton.

The Marine Department is reported to be preparing plans for the building of a Customs protective vessel for the Atlantic and St. Lawrence waters. She will be 175 ft. long, and of about 900 tons, and the approximate cost is $225,000.

The Canada Atlantic and Plant Steamship Co.'s s.s. Halifax grounded on George's Island in Boston harbor, July 17, during a dense fog. She was released at high tide the same day, and on entering the harbor collided with the Dominion Atlantic Ry. s.s. Prince Arthur. The damage in both cases was slight.

Sir Henry M. Pellatt, who is chiefly interested in the project for the construction of a dry dock and shipbuilding plant at Sydney, N.S., by the British Canadian Shipbuilding Co., stated, July 17, that the company would not carry out such work unless it was awarded the contract for the building of vessels for the Canadian navy.

The Navigation Syndicate, Ltd., has been incorporated under the New Brunswick Companies Act, with a capital of $30,000 and office at Nordin, to build, purchase or otherwise acquire and operate steam and other vessels, and carry on a general navigation business. The incorporators are O. W. Nordin, J. Ander, H. Oquist, H. Tideman, Nordin, N.B., and A. Kulinder, Rexton, N.B.

A preliminary enquiry was held at Halifax, N.S., early in July, into the collision between the s.s. Cape Breton and the schooner Guide, but the evidence was not then completed owing to the non-appearance of the master of the s.s. Cape Breton on account of illness. The Cape Breton has been libelled on behalf of the schooner Guide, on a claim of $10,000 for damages caused by the collision on July 7. She was released on bonds.

The St. John River Steamship Co. is suing the Crystal Stream Steamship Co. for damages and loss for exclusion from the Victoria wharf at Indiantown, and for breach of agreement, through the latter company operating a steamboat on the Fredericton route. The amount of the damages claimed is the earnings of the Crystal Stream Steamship Co.'s steamboat Majestic, operated on the Fredericton route, and the company is being asked to produce its books and receipts for the season.

The Marine Court of Enquiry at St. John, Nfld., delivered judgment, July 7, in the matter of the loss of the Reid Newfoundland Co.'s s.s. Bruce on Mar. 24. It found that the vessel was well equipped and the compasses in good order, the errors known and corrections properly applied to the courses steered, and that the loss was caused by the master setting and steering an improper course, due to his failure to verify the vessel's position by taking reliable bearings of Scattarie light. The master, R. Drake, is the holder of a colonial certificate of service but not of a certificate of competency.

An order in council has been passed cancelling a previous order in council, which established the pilotage authorities of Hillsboro and Hopewell District and Moncton District, N.B., and establishing in their places the Shepody Basin District, comprising all the waters of Shepody Bay, Shepody Basin, Petitcodiac River and Memramcooke River north from a line drawn from the westernmost extreme of Cape Maringouin westward through the south point of Mary Island to the mainland of Albert county, south and east of the public bridge connecting Moncton and Coverdale, and south of the Upper Dorchester bridge on the Memramcooke River.

Province of Quebec Marine

The s.s. General Wolfe, which collided with the s.s. Aranmore, near Murray Bay, Que., June 29, and sank, has been abandoned as a total loss. Both vessels are owned by Holliday Bros., Quebec, and are registered in England.

The St. Lawrence Sand Gravel Dredging Co., Ltd., has been incorporated under the Quebec Companies Act, with a capital of $49,900 and office at Sorel, to dredge for sand, gravel and other material, and in connection therewith to own and operate steam tugboats, dredges, etc.

The Richelieu and Ontario Navigation Co.'s s.s. Saguenay, which recently arrived at Montreal, from England, was taken for a trial trip, after having been overhauled, July 6. A number of local transportation officials were the guests of the company on a short run to Tetraultville. She was placed on her regular run on the same day.

Capt. Riley, Superintendent of Pilots, conducted a preliminary investigation at Montreal, July 5, into the cause of the collision between the steamships Helvetia and Cascapedia about two months ago in the St. Lawrence a little above Quebec. It had not then been decided whether a further enquiry would be held.

The Montreal harbor revenue for June was $66,058.45, an increase of $7,277.02 over the revenue for June, 1910. There was a slight decrease in the exports. The number of vessels arriving was 241 of a tonnage of 732,810, being five vessels less and 77,655 tons more than in June, 1910. The total receipts from imports, exports and local traffic since the opening of navigation to June 30 were $118,999.45.

The Lake Champlain and St. Lawrence Ship Canal Co.'s plans which were recently filed with the Public Works Department at Ottawa, provide for a 12 ft. waterway starting at Fryer's Island, near St. John, tapping the St. Lawrence at Longueuil, 21 miles north. The canal will give Montreal a direct connection with Lake Champlain by way of the Richelieu River. From Lake Champlain to New York, the existing routes will be used. The canal will pass south of Chambly Basin, cross the Little Montreal River at St. Louis de Gonzague and pass across St. Francois de Borgia, Lange Gardien, Cote St. Lambert and Longueuil parishes.

Ontario and the Great Lakes.

Press reports state that the Hamilton Steamboat Co. and the Turbine Steamship Co. are contemplating the inauguration of a Sunday service between Toronto and Hamilton.

The Department of Railways and Canals will receive tenders to Aug. 4 for the lock gates and valve gates for the Holland River division of the Trent canal.

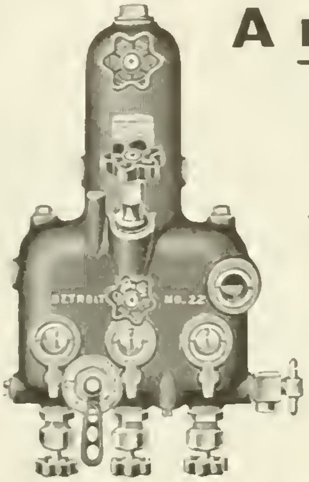
The captains of the Niagara Navigation Co.'s steamboats Chippewa and Corona were each fined $150 and costs, at St. Catharines, July 15, for breaches of the liquor license act.

The Rideau Navigation Co.'s steamboat Rideau Queen ran aground in the Rideau River, July 11, sustaining damage to her wheel and rudder. She was

Lake Grain Shipments

The following statement, preparedby F. E. Gibbs, Grain Inspector, Fort William, Ont., shows the bushels of grain shipped by vessels from Fort William and Port Arthur, of the 1910 crop, from the close of navigation to June 30. The last two figures in each column represent lbs.

Destination	Wheat	Oats	Barley	Flax
Canadian ports:				
Depot Harbor	431,224.30	34,000.00	. . .	....
Goderich	1,012,522.30	690,280.12	34,901.00	36,248.09
Kingston	2,659,777.30	1,402,820.31	246,032.29	50,627.38
Montreal	1,558,506.40	2,881,246.37	10,417.04	36,476.06
Meaford	105,000.00	....	....	....
Owen Sound	215,296.10	344,466.31	20,005.30	....
Port Colborne	1,334,647.20	186,147.12	....	....
Point Edward	185,630.00	50,000.00	9,727.32	35,128.01
Quebec	......	198,159.26	....	....
Tiffin	1,685,258.20	365,021.26	....	....
Victoria Harbor	57,370.00	......	....	....
Walkerville	148,417.40	....	....	....
	9,393,650.30	6,152,146.05	321,083.47	158,479.54
Foreign ports:				
Buffalo	7,312,431.10	363,785.12	197,623.06	194,414.08
	16,706,081.40	6,515,931.17	518,707.05	352,894.06
Same period 1910	14,556,061.40	7,398,238.28	598,011.19	895,546.1



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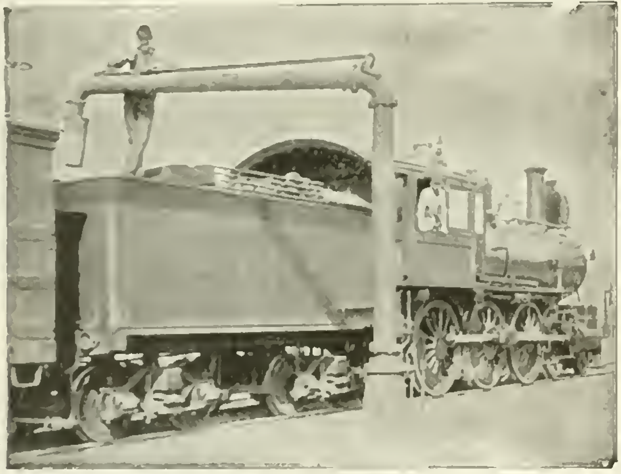

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CANADA	"	12
LAURENTIC	"	19
TEUTONIC	"	26
MEGANTIC	Sept.	2
CANADA	"	9
LAURENTIC	"	16
TEUTONIC	"	23
MEGANTIC	"	30
CANADA	Oct.	7
LAURENTIC	"	14
TEUTONIC	"	21
MEGANTIC	"	28
CANADA	Nov.	4
LAURENTIC	"	11
TEUTONIC	"	18

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released and taken to Kingston for repairs.

The Department of Railways and Canals has awarded the contract for the construction of an extension to the north mooring pier at the upper entrance to the Sault Ste. Marie canal to J. F. Body, Sault Ste. Marie, Ont.

The Lake Ontario and Bay of Quinte Steamboat Co.'s steamboat Caspian, while en route to Rochester, ran aground, July 12, and sustained considerable damage to her wheel and rudder. She was released, July 15, and taken to Kingston for repairs.

Co. Anderson, Chief Engineer, Department of Marine, recently completed a tour of inspection of the Trent canal with a view to reporting on the question of better lighting and the placing of a number of additional buoys.

The Northern Navigation Co. and the Inland Lines, the control of which has been obtained by the Richelieu and Ontario Navigation Co., continue to be operated under their respective names, and with the same officials as heretofore.

The plans for the improvement of the harbor at Port Stanley have been completed and forwarded to Ottawa for approval. The breakwater will be of the most modern construction and it is expected to be completed this summer, after which a new pier for unloading will be built.

The Montreal Star's London, Eng., correspondent stated, July 15, that arrangements had been completed for the Canadian lake merger in connection with Manchester Liners, Ltd., and that the capital involved in the Canadian part of the agreement was $20,000,000, covering 50 vessels.

The steamboat Norseman, owned in Belleville, and which was recently seized by the sheriff on claims by the crew for wages, was sold to a local syndicate for $1,000, July 11. She was built at St. Catharines in 1864, and was formerly named Gipsey. Her dimensions are: length 177.2 ft., breadth 28.4 ft., depth 12.2 ft., tonnage 620 gross, 400 register, and she is screw driven by an engine of 200 n.h.p.

The U.S. Lake Survey reports the levels of the Great Lakes, in feet above tidewater, for June, as follows—Superior, 601.34; Michigan and Huron, 579.98; Erie, 571.90; Ontario, 245.66. As compared with the average June levels for the past ten years, Superior was 1.20 ft. below; Michigan and Huron, 1.12 ft. below; Erie, 0.96 ft. below, and Ontario, 1.18 ft. below. It was anticipated that there would be a rise of 0.2 ft. in Lake Superior, and of 0.1 ft. in Michigan and Huron during July.

The Ontario and Quebec Navigation Co.'s steamboat Geronia, which was expected to be completed in readiness for service between Toronto and Quebec, July 20, was not delivered at Collingwood at that date. She left Toronto on her maiden trip in that service, July 27.

The Sault Ste. Marie Dry Dock and Shipbuilding Co. has communicated with the local council to the effect that J. O'Boyle, with whom the council made an agreement relating to the construction of a dry dock and shipbuilding plant at Sault Ste. Marie, has been relieved of any obligations under the agreement, and that all such are now binding upon the company.

The Mathews Steamship Co.'s steamboat Yorkton arrived in Toronto towards the end of July, with a cargo of scoria blocks from Middlesbrough, Eng. She was built at Sunderland, Eng., for the lake bulk and package freight trade, and will be operated by the owning company between Montreal and Fort William. She is of the single deck type, of arch construction, with no upright stanchions in the hold, and has three watertight compartments, with steel bulkheads and with double bottom. The captain's, owners', purser's and dining rooms are finished in mahogany, and the remaining quarters in oak. Her engines are triple expansion with cylinders 17, 28 and 46 ins. diar. by 33 ins. stroke, supplied with steam by two boilers, each 12 by 11 ft., under natural draught. There are six hatches, each 12 by 26 ft., and the general equipment includes electric lighting plant, steam heating, steam steering gear, windlass, capstans and winches. She has been built to class 100 A1 at Lloyd's, for a passage through the Welland canal with cargo of 80,000 bush., and of 100,000 bush. on deep draught, with a certificate for carrying freight to any part of the world. Her dimensions are: length, 257 ft.; beam, 42½ ft.; depth, 18½ ft.; tonnage, 1,771 gross, 1,136 register. She is practically a duplicate of the same company's steamboat Mapleton.

◆

Manitoba, Saskatchewan and Alberta.

The Pioneer Navigation and Sand Co., Ltd., of Winnipeg, is being voluntarily wound up, and tenders are being received for its land assets up to Aug. 4.

The steamboat Slave Lake, recently built at Athabasca Landing, Alta., and owned by V. Maurice, Grouard, left the Landing, June 29, on her first trip to the Lesser Slave Lake.

◆

B.C. and Pacific Coast Marine

Preliminary work is reported to have commenced for the G.T.P.R. dry dock at Prince Rupert. The dock will consist of three sections, each constructed that it can be used separately.

The sternwheel steamboat George E. Starr, owned in Seattle, Wash., is reported to have been sold to Vancouver parties for operation on the Fraser River.

The G.T.P. Coast Steamship Co.'s s.s. Prince Rupert resumed service, July 3, after having a thorough overhauling and cleaning, and having her boilers equipped with forced draught.

The steamboat Pauline, owned in Dawson, Yukon, while en route to Dawson from the Tanana River, July 1, struck a rock near Eagle and sank. She was built at White Horse in 1907, and was a paddle wheel vessel, with engine of 2 n.h.p. Her dimensions were: length 85.5 ft., breadth 15.5 ft., depth 3.5 ft., tonnage 145 gross, 91 register.

The Coast Steamship Co., Vancouver, has placed the s.s. Celtic on the route between Vancouver, Seattle and Tacoma, making two sailings each week. The Celtic was built at Vancouver in 1907, and she is screw driven with engine of 16½ n.h.p. Her dimensions are: length, 89.4 ft.; breadth, 24.5 ft.; depth, 8.6 ft.! tonnage, 239 gross, 163 register.

The steamboat Belfast, with a cargo of lime, bound from Texada Island to Seatte, struck on a rock, near Nanaimo, July 9, and catching fire was totally destroyed. She was owned in Vancouver, where she was built in 1904. Her dimensions were: length 91.3 ft., breadth 18 ft., depth 7 ft., tonnage 105 gross, 72 register, and she was screw driven by engine of 15 n.h.p.

The G.T.P. Coast Steamship Co.'s s.s. Prince John, which sailed from Glasgow, Scotland, early in July, is expected to reach Vancouver towards the end of August, when she will be placed on the Prince Rupert and Queen Charlotte Islands route. She was formerly known as Amethyst, and has a cargo capacity of 450 tons in addition to her bunkers. Her dimensions are: length 185 ft., breadth 30 ft., depth 13¼ ft., and she is built of steel and classed 100 A 1 at Lloyd's. There are seven water tight bulkheads with double bottom, affording ample ballast and fresh water storage, large bunkers, triple expansion engines, two multitubular Scotch boilers, suitable for a speed of 12 knots an hour.

The Dominion Government steam tug Point Ellice was launched at North Vancouver, July 11. She is to be used as a tender to the Government dredge Ajax. She is built to class 100 A 1 at Lloyd's, her dimensions being as follows: length over all 91½ ft., between perpendiculars 78½ ft., beam 20 ft., molded depth 12¾ ft. She has five water tight bulkheads extending from the floor plates to the main deck, and is equipped with fore and aft compound surface condensing engine with cylinders 16 and 34 ins. diar., by 24 ins. stroke, of 500 h.p. at 125 revs. per minute, for a speed of 12 knots an hour, supplied with steam by a Scotch marine boiler 12 ft. diar. by 11 ft. long at a working pressure of 150 lbs. to the square inch. The air pump, 12 by 12 ins., is driven from the low pressure cross head; the steering gear is direct acting and automatic, and she was built

SAULT STE. MARIE CANALS TRAFFIC

The following commerce passed through the Sault Ste. Marie Canals in June:

ARTICLES			CANADIAN CANAL	U. S. CANAL	TOTAL
Copper	Eastbound	Short tons	601	16,175	16,776
Grain	"	Bushels	2,113,954	870,942	2,984,896
Building stone	"	Short tons	740	....	740
Flour	"	Barrels	192,330	490,451	682,781
Iron ore	"	Short tons	3,565,476	1,089,871	4,655,347
Pig iron	"	"	....	2,490	2,490
Lumber	"	M. ft. B.M.	3,574	75,316	78,890
Silver ore	"	Short tons	....	....	....
Wheat	"	Bushels	2,953,888	2,092,037	5,045,925
General merchandise	"	Short tons	5,356	10,532	15,888
Passengers	"	Number	1,662	3,302	4,964
Coal, hard	Westbound	Short tons	33,060	220,118	253,178
Coal, soft	"	"	521,795	1,375,163	1,896,958
Flour	"	Barrels	....	....	....
Grain	"	Bushels	....	....	....
Manufactured iron	"	Short tons	25,047	16,006	41,053
Iron ore	"	"	6,356	....	6,356
Salt	"	Barrels	8,526	52,136	60,662
General merchandise	"	Short tons	93,397	83,409	176,806
Passengers	"	Number	3,192	2,673	5,865
Vessel passages		Number	922	,651	2,573
Registered tonnage		Net	2,658,886	3,201,730	5,860,616
Freight—Eastbound		Short tons	3,722,935	1,369,763	5,092,698
" - Westbound		"	680,873	1,702,516	2,383,389
Total freight		"	4,403,808	3,072,279	7,476,087

Short tons are tons of 2,000 pounds

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to the designs of H. A. Bayfield, Government Superintendent of Dredges.

The North Arm Steamship Co. is reported to have made arrangements for the purchase of the steamboat Skeena from Foley, Welch and Stewart, for summer service on the North Arm. She was built at Vancouver in 1908, and is driven by a paddle wheel by an engine of 8 n.h.p. Her dimensions are: length 121.2 ft., breadth 26.8 ft., depth 5.6 ft., tonnage 515 gross, 310 register.

◆

Beeson's Marine Directory.—In issuing the 25th annual number of this indispensable directory of the marine interests on the Great Lakes, the publisher refers to the initial issues and the reception accorded them and adds: "Today, with a large Canadian following, in addition to our patronage in the States, it is as widely known and circulated as such a medium can be. . . . And I shall continue this publication and seek to make it of increased value to all concerned." The directory contains all the information about the Great Lakes marine to which owners and managers constantly need to refer, and this is arranged in a most convenient manner for reference. A special article on the Chicago Sanitary District and the proposed harbors is of interest to Canadian marine men, on account of the influence the Chicago Drainage Canal and its pos-

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sible development as a navigation route to the Gulf of Mexico may have on the water level of the Great Lakes. A large number of illustrations are given, including the new Canadian bulk freighter Toiler. The directory is published by H. C. Beeson, 1340 Washington Boulevard, Chicago, Ill.

The Department of Marine has issued lists of all lights and fog signals on the inland waters and the Pacific coast of Canada, corrected up to April 1.

The Purchasing Agents' Guide

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- Commercial Acetylene Co.........Toronto

Aerated Waters
- E. L. Drewry ....Winnipeg

Air Brakes and Fittings
- Allis-Chalmers-Bullock Ltd. ....Montreal
- Canadian Westinghouse Co. Hamilton, Ont.

Ales
- E. L. Drewry ....Winnipeg.

Alloys
- American Vanadium Co....Pittsburg, Pa
- Titanium Alloy Mfg. Co...Pittsburgh, Pa.

Angle Bars
- Nova Scotia S. & C. Co., New Glasgow, N.S
- Steel Co. of Canada, Ltd., Hamilton, Ont.

Anti Rail Creepers
- The Holden Co., Ltd...........Montreal.

Asbestos
- Canadian H. W. Johns-Manville Co., Ltd. ....Toronto

Automobiles
- Preston Car & Coach Co...Preston, Ont.

Axes
- James Smart Mfg. Co.....Brockville, Ont.

Axles
- Canadian Car & Foundry Co....Montreal
- James Hutton & Co. ....Montreal.
- Nova Scotia S. & C. Co., New Glasgow, N.S
- Jas. W Pyke & Co.............Montreal.
- Steel Co. of Canada, Ltd., Hamilton, Ont.

Babbit Metal
- C. H. Besly Co. ....Chicago, Il.
- Tallman Brass & Metal Co., Hamilton, Ont.

Batteries, Storage
- T. A. Edison Co., Inc.......Orange, N.J.
- Tate Accumulator Co. of Can., Ltd..Toronto

Battery Boards
- Geo. C. Royce ....West Toronto, Ont.

Beacons
- International Marine Signal Co....Ottawa.

Bearings, Side
- Canadian Car & Foundry Co....Montreal.
- Chicago Railway Equipment Co..Chicago

Blankets and Bedding
- The Hudson's Bay Co. ....

Blasting Powder
- Curtis's & Harvey (Canada) Ltd..Montreal

Boiler Checks
- Nathan Manufacturing Co......New York.

Boilers
- Babcock & Wilcox, Ltd.........Montreal.
- Polson Iron Works, Ltd.........Toronto.
- Robb Engineering Co., Ltd..Amherst, N.S

Boilers, Portable
- Babcock & Wilcox, Ltd.........Montreal.
- Polson Iron Works, Ltd.........Toronto.
- Robb Engineering Co., Ltd..Amherst, N.S.

Boilers, Stationary and Marine
- Babcock & Wilcox, Ltd.........Montreal.
- Polson Iron Works, Ltd.........Toronto.
- Robb Engineering Co., Ltd Amherst, N.S.

Boilers, Steam
- Babcock & Wilcox, Ltd.........Montreal.
- Polson Iron Works, Ltd.........Toronto.
- Robb Engineering Co., Ltd..Amherst, N.S

Boilers, Water Tube
- Babcock & Wilcox, Ltd.........Montreal.
- Polson Iron Works, Ltd.........Toronto.
- Robb Engineering Co., Ltd..Amherst, N.S.

Bolsters
- Canadian Car & Foundry Co....Montreal.
- Canadian Ry. Equipment Co., Welland, Ont.
- Whyte Railway Signal Co. ....Toronto

Bolt Cutters
- London Machine Tool Co., Ltd., Hamilton

Bolts and Nuts
- Steel Co. of Canada, Ltd..Hamilton, Ont.

Bolts, Track
- Nova Scotia S. & C. Co., New Glasgow, N S.

Borers, Car Wheel
- John Bertram & Sons Co....Dundas, Ont.

Boring Mills
- London Machine Tool Co., Ltd., Hamilton.

Brake Beams
- Canadian Car & Foundry Co....Montreal.
- Chicago Railway Equipment Co..Chicago.

Brake Shoes
- Am. Brake Shoe & F'dry Co., Mahwah, N.J.
- Canada Iron Corporation, Ltd..Montreal.
- The Holden Co., Ltd...........Montreal.

Brake Shoes, Locomotive Driver
- Am. Brake Shoe & F'dry Co., Mahwah, N.J.
- Canada Iron Corporation, Ltd..Montreal.
- Dorner Railway Equip. Co....Chicago, Ill.
- Railway Materials Co. ... .New York.

Brass
- C. H. Besly Co. ....Chicago, Il.

Brasses, Car
- T McAvity & Sons ....St. John, N B.

Bridge Numbers
- Acton Burrows, Limited ....Toronto.

Bridges
- Canadian Bridge Co.....Walkerville, Ont
- Cleveland Bridge & E. Co. Darlington, Eng.
- Dominion Bridge Co..... ....Montreal.

Bronze
- American Vanadium Co....Pittsburg, Pa.
- Titanium Alloy Mfg. Co...Pittsburgh, Pa

Buckets, Coal, Ore and Concrete
- M. Beatty & Sons, Ltd....Welland, Ont
- Brown Hoisting Machinery Co., Cleveland.
- Williams & Wilson, Ltd ....Montreal.

Buildings, Steel
- Canadian Bridge Co.....Walkerville, Ont.
- Cleveland Bridge & E. Co. Darlington, Eng.
- Dominion Bridge Co.............Montreal.

Bumping Posts
- Dominion Equip. & Supply Co., Winnipeg.
- The Holden Co., Ltd...........Montreal.
- McCord & Co. ....Chicago, Ill.

Buoys
- International Marine Signal Co....Ottawa

Cables, Electric and Feeder
- Canada Wire & Cable Co., Ltd...Toronto
- Chapman & Walker, Ltd........Toronto.
- E. F. Phillips Electrical Works.Montreal.
- The Wire and Cable Co..........Montreal.

Capstans
- Dake Engine Co. .... Grand Haven, Mich.

Car Furnishings
- Guilford S. Wood.............Chicago, Ill

Car Loaders, Box
- Mussens, Ltd. ....Montreal

Car Movers
- F H. Hopkins & Co..............Montreal.
- Mussens, Ltd. ....Montreal.

Cars
- Crossen Car Mfg. Co........Cobourg, Ont
- Canadian Car & Foundry Co....Montreal
- Dorner Railway Equip. Co. .. Chicago, Ill.
- J T. Gardner ....Chicago, Ill.
- Hart-Otis Car Co., Ltd.........Montreal.
- Ottawa Car Co., Ltd..............Ottawa.
- Pay-As-You-Enter Car Co....New York.
- Preston Car and Coach Co., Ltd..Preston.
- Russel Wheel & Fdry Co...Detroit, Mich.
- Western Wheeled Scraper Co. Aurora, Ill.

Car Signal Systems
- Ohio Brass Co. .... Mansfield, Ohio

Cars, Logging
- Russel Wheel & Fdry Co...Detroit, Mich.

Castings
- American Vanadium Co....Pittsburg, Pa
- Canadian Car & Foundry Co....Montreal
- Crossen Car Mfg Co........Cobourg, Ont.
- Lumen Bearing Co.....West Toronto, Ont.
- Russel Wheel & Fdry Co...Detroit, Mich.
- Standard Steel Works Co..Philadelphia, Pa
- Titanium Alloy Mfg Co ..Pittsburgh, Pa.

Castings, Brass
- Canadian Bronze Co. ....Montreal.
- Canada Iron Corporation, Ltd...Montreal.
- Kerr Engine Co. ....Walkerville, Ont.
- Lumen Bearing Co.....West Toronto, Ont.
- Tallman Brass & Metal Co., Ltd.Hamilton.

Castings, Car
- Am. Brake Shoe & F'dry Co., Mahwah, N.J.
- Canada Iron Corporation, Ltd...Montreal
- Russel Wheel & Fdry.. Co..Detroit, Mich

Castings, Iron
- Allis-Chalmers-Bullock Ltd ....Montreal
- Canada Iron Corporation, Ltd Montreal.
- Kerr Engine Co..........Walkerville, Ont.
- Russel Wheel & Fdry . Co..Detroit, Mich.

Castings, Iron and Steel
- Am. Brake Shoe & F'dry Co., Mahwah, N.J.

Castings, Malleable
- Pratt & Letchworth Co...Brantford, Ont.
- Taylor & Arnold ....Montreal

Castings, Manganese Steel
- Canadian Steel Foundries, Ltd., Montreal
- Lumen Bearing Co.....West Toronto, Ont.

Castings, Steel
- American Vanadium Co...Pittsburg, Pa.
- Canada Iron Corporation, Ltd..Montreal.
- Canadian Steel Foundries, Ltd., Montreal
- W. Kennedy & Sons, Ltd., Owen So'd, Ont.
- Pratt & Letchworth Co...Brantford, Ont.
- Titanium Alloy Mfg. Co...Pittsburgh, Pa.

Catenary materials
- Ohio Brass Co. .... Mansfield, Ohio

Chains
- B. J. Coghlin & Co..............Montreal.

Circuit Breakers
- Geo. C. Royce ....West Toronto, Ont.

Closets, Car
- Duner Co. ....Chicago, Ill.

Coal
- Nova Scotia S. & C. Co., New Glasgow, N.S

Compressors, Air
- Allis-Chalmers-Bullock Ltd ....Montreal.
- Canadian Rand Co ....Montreal
- The Holden Co., Ltd............Montreal.

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- F. H. Hopkins & Co............Montreal.
- Mussens Limited ....Montreal.

Contractors' Supplies
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- Rice Lewis & Son.................Toronto
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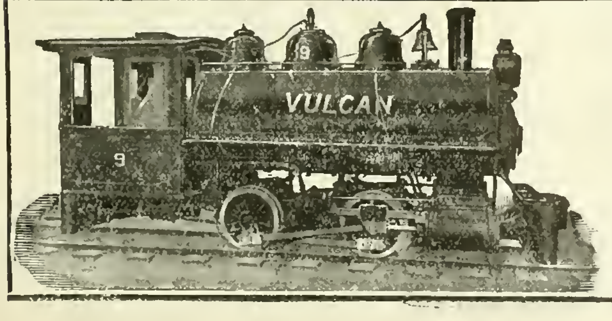
- Western Wheeled Scraper Co..Aurora, Ill
- Williams & Wilson, Ltd ...... Montreal

Conveyors, Coal and Ash
- Babcock & Wilcox, Ltd ......Montreal
- Williams & Wilson, Ltd ..... Montreal

Copper
- C. H. Besly Co. ....Chicago, Il.

Copying Presses
- James Smart Mfg. Co. Brockville, Ont

Couplers, Car and Locomotive
- Canadian Car & Foundry Co...Montreal
- Canadian Steel Foundries, Ltd., Montreal
- McConway & Torley Co....Pittsburg, Pa
- Ohio Brass Co. .... Mansfield, Ohio
- Taylor & Arnold ....Montreal



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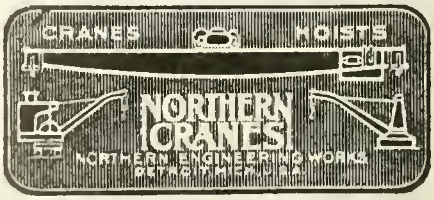

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Canadian Locomotive Co..Kingston, Ont.
Montreal Locomotive Works.....Montreal.

Locomotives, Steam
Baldwin Locomotive Works...Philadelphia.
Canadian Fairbanks Co. Ltd...Montreal.
Canadian Locomotive Co. ..Kingston, Ont.
J. T. Gardner ....Chicago, Ill.
Montreal Locomotive Works.....Montreal.
Vulcan Iron Works .....Wilkesbarre, Pa.

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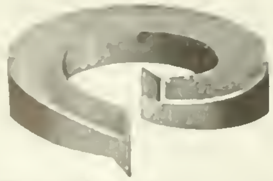

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Capital Authorized	$10,000,000.00
Capital Subscribed	5,913,000.00
Capital Paid Up	5,737,000.00
Reserve Fund	5,737,000.00

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1911
ONTARIO JOCKEY CLUB
Woodbine Park, Toronto
ANNUAL MEETING
Sept. 23rd to 30th
Racing—Steeplechasing
"GOD SAVE THE KING"

KINGSTON AND PEMBROKE RAILWAY COMPANY.

Notice to Shareholders.

The Annual General Meeting of the Shareholders of this Company will be held on Wednesday, 9th day of August next, at the Head Office of the Company at Kingston, at eleven o'clock a.m., for the purpose of electing Directors and transacting of other business.

The Stock Transfer Books will close in New York on Saturday, 29th day of July, 1911, at 1 p.m. All books will be reopened on Thursday, 10th day of August, 1911.

A. McNAUGHTON, Secretary.
Kingston, Ont., July 5th, 1911.

NOTICE.

The General Railway Signal Company, the owners of the exclusive rights to Canadian patents No. 92323, No. 93127, No. 96256, and No. 97758, issued to Young and Townsend, and covering methods of signaling electrified railways, wishes to call the attention of all possible users of the devices and systems covered by such patents, to the fact that it is prepared to sell and furnish, at short notice, all such devices, and to install such systems upon any railway in the Dominion of Canada.

All inquiries regarding the above should be addressed to the office of the company, Room 506, Eastern Townships Bank, 263 St. James St., Montreal, Que.

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Detroit Lubricator Co......Detroit, Mich.
McCord & Co. ....Chicago, Ill.
Nathan Manufacturing Co......New York
Taylor & Arnold ....Montreal.

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Parry Sound Lumber Co. ....Toronto.

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American Hoist & Derrick Co., St. Paul, M.
M. Beatty & Sons ....Welland, Ont.
Canadian Fairbanks Co., Ltd...Montreal.
J. T. Gardner ....Chicago, Ill.
F. H. Hopkins & Co. ....Montreal.
Mussens, Limited ....Montreal.

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John Bertram & Sons Co.....Dundas, Ont.

Machines, Car Shop
John Bertram & Sons Co., Ltd.Dundas, Ont.
Greenlee Bros. & Co. ....Chicago, Ill.

Machines, Cement
James W. Pyke & Co. ....Montreal.

Machines, Drilling
John Bertram & Sons Co. ..Dundas, Ont.

Machines, Earth and Stone Handling
Western Wheeled Scraper Co..Aurora, Ill.

Machines, Hoisting
American Hoist & Derrick Co. St. Paul, M.
Brown Hoisting Machinery Co..Cleveland.

Machines, Logging
Russel Wheel & Fdry. Co..Detroit, Mich.

Machines, Milling
John Bertram & Sons Co. ..Dundas, Ont.

Machines, Planing and Shaping
John Bertram & Sons Co. ..Dundas, Ont.

Machines, Radial Drilling
John Bertram & Sons Co. ..Dundas, Ont.

Machines, Rivetting
Long & Allstatter Co. .... Hamilton, Ohio.

Machines, Slotting
John Bertram & Sons Co. ..Dundas, Ont.

Machines, Tire Welding
Long & Allstatter Co. .... Hamilton, Ohio.

Machines, Track
Greenlee Bros. & Co. ....Chicago, Ill.

Machines, Tracklaying
F. H. Hopkins & Co. ....Montreal.

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Canadian Fairbanks Co., Ltd...Montreal.
Williams & Wilson, Ltd ....Montreal.

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Pratt & Whitney Co. ....Dundas, Ont.

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American Brake Shoe & F'dry Co.Mahwah.
Canada Iron Corporation, Ltd...Montreal.

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Goldschmidt Thermit Co. ....Toronto.

Marine Supplies
Rice Lewis & Son...............Toronto.

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Tallman Brass & Metal Co., Hamilton. Ont.

Metals
Goldschmidt Thermit Co. ....Toronto.

Metal Work, Structural
Canadian Bridge Co.....Walkerville, Ont.
Cleveland Bridge & E. Co. Darlington, Eng.
Dominion Bridge Co............Montreal.
Jas. W. Pyke & Co. ....Montreal.

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Geo. C. Royce ....West Toronto, Ont.

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Canadian Fairbanks Co., Ltd...Montreal.
McCord & Co. ....Chicago, Ill.

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Allis-Chalmers-Bullock Ltd. ....Montreal.
Chapman & Walker, Ltd... ....Toronto.
Northern Electric & Mfg. Co.....Montreal.

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Chapman & Walker, Ltd........Toronto.

Motors, Turntable
Taylor & Arnold ....Montreal.

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Steel Co. of Canada, Ltd..Hamilton, Ont.

Nickel
The Orford Copper Co. ....New York.

Nickel for Nickel Steel
The Orford Copper Co. ....New York.

Numbers
Acton Burrows, Limited ....Toronto.

Nut Locks
Positive Lock Washer Co. ..Newark, N.J.

Oakum
The Hudson's Bay Co....................

Office Fittings
Can. Office & Sch'l Furn. Co....Preston.

Office Signs
Acton Burrows, Limited ....Toronto.

Oil
C. H. Besly Co. ....Chicago, Il

Oil Cups
C. H. Besly Co. ....Chicago, Il.
Detroit Lubricator Co. .. .. Detroit, Mich.
Nathan Manufacturing Co......New York.

Oils
Galena Signal Oil Co..Franklin & Toronto.

Packing
Anchor Packing Co. of Can., Ltd.,.Montreal
Greene, Tweed & Co. ....New York.
The N. L. Piper Ry. Supply Co...Toronto.

Pile Drivers, Railway
F. H. Hopkins & Co. ....Montreal.
Mussens, Limited ....Montreal.

Piles
Harris Tie and Timber Co..Ottawa, Ont.

Pinch Bars
The N. L. Piper Ry. Supply Co..Toronto.

Pipe, Culvert, Cast Iron
Gartshore-Thompson Pipe Co...Hamilton.

Pipe, Gas, Cast Iron
Gartshore-Thompson Pipe Co...Hamilton.

Pipe, Sewer, Cast Iron
Gartshore-Thompson Pipe Co...Hamilton.

Pipe Stocks
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co........Hespeler, Ont.

Pipe, Water (Cast Iron)
Gartshore-Thompson Pipe Co...Hamilton.

Pipe, Wrought Lead and Galvanized
Steel Co. of Canada, Ltd..Hamilton, Ont.

Planers
John Bertram & Sons Co. ..Dundas, Ont.

Platforms, Steel
Standard Coupler Co. ....New York City.

Ploughs, Contractors'
Meaford Wheelba'ow Co., Ltd., Meaf'd, Ont.
Mussens, Limited ....Montreal.
Western Wheeled Scraper Co..Aurora, Ill.

Poles and Posts, Cedar
Harris Tie and Timber Co..Ottawa, Ont.

Porter
E. L. Drewry ....Winnipeg.

Preservative for Hose
Guilford S. Wood.............Chicago, Ill.

Printing
Southam Press ....Toronto.

Propellor Wheels
W. Kennedy & Sons, Ltd.. Owen So'd, Ont.

Pumps
Canadian Fairbanks Co., Ltd...Montreal.
S. F. Bowser & Co., Ltd........Toronto.
Ontario Wind Engine & Pump Co..Toronto.
James Smart Mfg. Co....Brockville, Ont.

Pumps, Centrifugal
M. Beatty & Sons ....Welland, Ont.

Punches and Shears
Long & Allstatter Co. .... Hamilton, Ohio.
Williams & Wilson, Ltd ....Montreal.

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Steel Co. of Canada, Ltd..Hamilton, Ont.

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Canadian Steel Foundries, Ltd., Montreal
Dominion Equip. & Supply Co., Winnipeg.
F. H. Hopkins & Co. ....Montreal.
Whyte Railway Signal Co. ....Toronto

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Ohio Brass Co. .... Mansfield, Ohio

Rail Drilling Machines
A. B. Jardine & Co. ....Hespeler, Ont.
Whyte Railway Signal Co. ....Toronto

Rails, new
Dominion Iron & Steel Co....Sydney, N.S.
Drummond, McCall & Co.......Montreal.
J. T. Gardner ....Chicago, Ill.
J. J. Gartshore ....Toronto.
F. H. Hopkins & Co. ....Montreal.

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F. H. Hopkins & Co. ....Montreal.
J. J. Gartshore ....Toronto.
Mussens, Limited ....Montreal.
Provincial Steel Co., Ltd. .. Cobourg, Ont.
Jas. W. Pyke & Co. ....Montreal.

Rail Joints
Goldschmidt Thermit Co. ......Toronto.
The Rail Joint Co. of Canada...Montreal.
Whyte Railway Signal Co. ....Toronto

Rails, Re-rolled
Provincial Steel Co., Ltd. .. Cohourg, Ont

Railway Supplies
Canadian Fairbanks Co., Ltd..Montreal.
Canadian H. W. Johns-Manville Co.,
Ltd. ....Toronto
T. McAvity & Sons ....St. John, N.B.
Burton W. Mudge & Co......Chicago, Ill.
The Hiram L. Piper Co........Montreal.
The N. L. Piper Ry. Supply Co..Toronto.
Rice Lewis & Son................Toronto.
Russel Wheel & Fdry. Co..Detroit, Mich.
Pratt & Letchworth Co...Brantford, Ont.
Whyte Railway Signal Co. ....Toronto
Williams & Wilson, Ltd ....Montreal.

Reamers
Butterfield & Co.......Rock Island, Que.
A. B. Jardine & Co. ......Hespeler, Ont.

Refrigerators
Seeger Refrigerator Co. ..St. Paul, Minn.

Replacers, Car and Locomotive
Alexander Car Replacer Mfg. Co.Scranton
Dominion Equip. & Supply Co..Winnipeg
The Holden Co., Ltd. ....Montreal
F. H. Hopkins & Co. ....Montreal
Johnson Wrecking Frog Co.Cleveland, O.
Whyte Railway Signal Co.........Toronto

Rock Crushers
Allis-Chalmers-Bullock Ltd.......Montreal.
Western Wheeled Scraper Co..Aurora, Ill.

Rope
F. H. Hopkins & Co.............Montreal.
The Hudson's Bay Company ....

Ropes, Derrick
Dominion Wire Rope Co. ....Montreal

Ropes, Switch
F. H. Hopkins & Co., Ltd.......Montreal

Rubber Goods, Mechanical
Guilford S. Wood.............Chicago, Ill.

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Canadian Fairbanks Co., Ltd., Montreal.

Safes
J. & J. Taylor......................Toronto.

Sanders, Pneumatic
Ohio Brass Co. .... Mansfield, Ohio

Scows, Dump and Deck
M. Beatty & Sons..........Welland, Ont.

Scrapers, Wheel and Drag
F. H. Hopkins & Co.............Montreal.
Meaford W'lbarrow Co., Ltd., Meaford, Ont.
Mussens Limited ....Montreal
Western Wheeled Scraper Co...Aurora, Ill.

Screw Plates
Butterfield & Co.........Rock Island, Que.
A. B. Jardine & Co.........Hespeler, Ont.

Screws, Wood and Machine
Steel Co. of Canada, Ltd..Hamilton, Ont

Seats, Station
James Smart Mfg. Co. ....Brockville, Ont.

Semaphore Arms
Acton Burrows, Limited ....Toronto.

Semaphores
The N. L. Piper Ry. Supply Co., Toronto.
Saxby & Farmer, Ltd. ....Montreal

Shapers
London Machine Tool Co., Ltd., Hamilton.

Shingles
Imperial Timber & Trading Co. Vancouver.

Ships
Polson Iron Works, Ltd ....Toronto

Shop Equipment, Car and Locomotive
London Machine Tool Co., Ltd., Hamilton.

Shops
The Hudson's Bay Company ....

Signal House Numbers
Acton Burrows, Limited ....Toronto

Signals
Railway Signal Co. of Canada..Montreal.
Hall Signal Co. .... .Chicago, Ill.
The Hiram L. Piper Co., ...Montreal.
The N. L. Piper Ry. Supply Co...Toronto.
Saxby & Farmer, Limited . ....Montreal.
Union Switch & Signal Co., Swissvale, Pa.
Whyte Railway Signal Co. .....Toronto.

Signals, Fog
International Marine Signal Co....Ottawa.

Signs
Acton Burrows, Limited .. ..Toronto.

Sills, Steel for Cars
Canadian Ry. Equip't Co..Welland, Ont.

Skidders and Loaders
Russel Wheel & Fdry Co...Detroit, Mich.

Slack Adjusters
Chicago Railway Equipment Co...Chicago

Sledges
James Smart Mfg. Co....Brockville, Ont.

Snow Ploughs
.Canadian Car & Foundry Co....Montreal.
Crossen Car Mfg. Co ....Cobourg, Ont.

Solder
Tallman Brass & Metal Co. Hamilton Ont.

Spikes, Railway, Ship or Pressed
F. H. Hopkins & Co...........Montreal.
Nova Scotia S.& C. Co. New Glasgow, N.S.
Steel Co. of Canada, Ltd..Hamilton, Ont.

Spreader Cars
F. H. Hopkins & Co.,..........Montreal.
Western Wheeled Scraper Co .Aurora, Ill

Spring Dampeners
McCord & Co., ...Chicago, Ill.

Springs
American Vanadium Co. ....Pittsburg, Pa.
Canadian Steel Foundries, Ltd., Montreal
B. J. Coghlin & Co. ....Montreal.
F. H. Hopkins & Co.,.... .....Montreal.
Standard Steel Wks. Co.,Philadelphia, Pa.
Titanium Alloy Mfg. Co...Pittsburgh, Pa.

Sprinklers, Electric .
Preston Car & Coach Co...Preston, Ont.

Stand Pipes
T. McAvity & Sons ....St. John, N.B.

Staples
Steel Co. of Canada, Ltd..Hamilton, Ont.

Station Name Signs
Acton Burrows, Limited ....Toronto

Staybolt Iron
Tayor & Arnold ....Montreal.

Staybolts, Flexible
Flannery Bolt Co. ....Pittsburg, Pa.

Staybolts, Locomotive
Flannery Bolt Co. ....Pittsburg, Pa.

Staybolt Taps
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co., ...Hespeler, Ont.

Steam Couplers
Safety Car Heating & L'ting Co. New York.

Steam Hammers
John Bertram & Sons Co. ..Dundas, Ont.

Steam Shovels
F. M. Beatty & Son ....Welland, Ont.
F. H. Hopkins & Co.,..........Montreal
Mussens, Limited ....Montreal.

Steamship Signs
Acton Burrows, Limited ....Toronto.

Steam Traps
Consolidated Car Heating Co., Albany, N.Y.

Steel
Hermann Boker & Co. ....Montreal.
Nova Scotia S & C Co New Glasgow, N.S.

Steel, Fire Box
Tayor & Arnold ....Montreal.

Steel for Axes
Canadian Steel Foundries, Ltd., Montreal

Steel for Saws
Canadian Steel Foundries, Ltd., Montreal

Steel for Springs
Jas. Hutton & Co. ....Montreal.
Steel Shafting
Nova Scotia S. & C. Co. New Glasgow, N.S.
Steel, Nickel for Nickel
The Orford Copper Co . . ...New York.
Steel Plates
Jas. W. Pyke & Co . . ..Montreal.
Steel, Tool
Canadian Steel Foundries Ltd . Montreal
Steering Gears
Dake Engine Co ...Grand Haven, Mich.
Stokers, Mechanical
Babcock & Wilcox, Ltd ....Montreal.
Storage Batteries
[illegible] Co. Inc. . .Orange, N.J.
[illegible] Accumulator Co. of Can., Ltd..Toronto
Stoves
James Smart Mfg. Co....Brockville, Ont.
Superheaters
Babcock & Wilcox, Ltd ....Montreal.
Switchboards
Geo. C. Royce . ...West Toronto, Ont.
Switches
Can. Ramapo Iron Wks. Ltd. Niagara Falls
Canadian Steel Foundries, Ltd., Montreal
Switches, Electric
Geo C. Royce ....West Toronto, Ont.
Switch Stands
Can. Ramapo Iron Wks. Ltd. Niagara Falls
Switch Targets
Acton Burrows, Limited ....Toronto.
Tacks
Steel Co. of Canada, Ltd..Hamilton, Ont.
Tanks and Tank Fixtures
Ontario Wind Engine & Pump Co.Toronto.
Polson Iron Works ....Toronto
Tanks, Oil
S. F. Bowser & Co., Limited.....Toronto.
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Commercial Acetylene Co. ....Toronto.
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Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co., ...Hespeler, Ont.
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Northern Electric & Mfg. Co. ...Montreal
Telegraph and Telephone Office Signs
Acton Burrows, Limited ....Toronto.
Thermit
Goldschmidt Thermit Co. ....Toronto
Ticket Cases
Can. Office & School Furniture Co.Preston.
Tie Plates
B. J. Coghlin & Co. ....Montreal.
Nova Scotia S. & C. Co. New Glasgow, N.S.
Pratt & Letchworth Co.. Brantford, Ont.
Steel Co. of Canada, Ltd..Hamilton, Ont.
Guilford S. Wood ....Chicago, Ill.
Ties
Harris Tie and Timber Co..Ottawa, Ont.
Parry Sound Lumber Co. ....Toronto.
Timber, Railway and Bridge
Harris Tie and Timber Co..Ottawa, Ont.
Tires, Steel
Jas Hutton & Co., ... Montreal.
Jas W Pyke & Co., ...Montreal.
Standard Steel Wks. Co.,Philadelphia, Pa.
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Canadian Fairbanks Co., Ltd....Montreal.
Jas Smart Mfg. Co. .....Brockville, Ont.
A B. Jardine & Co., ...Hespeler, Ont.
Pratt & Whitney Co. ....Dundas, Ont.
Williams & Wilson, Ltd ....Montreal.
Tools, Track
John Bertram & Sons Co. ..Dundas, Ont.

Canadian Steel Foundries, Ltd...Montreal
B. J. Coghlin & Co. ....Montreal.
F. H. Hopkins & Co.,...... .. .Montreal.
Mussens, Limited ....Montreal.
Tools, Pneumatic
The Holden Co., Ltd. ....Montreal.
Tools, Cast Steel Track
American Brake Shoe & Fdry. Co. Mahwah
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Can. Ramapo Iron Wks. Ltd. Niagara Falls
Tramway Equipment
J. J. Gartshore ....Toronto.
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Geo. C. Royce ....West Toronto, Ont.
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Canadian Fairbanks Co., Ltd ..Montreal.
Williams & Wilson, Ltd ....Montreal.
Trolley guards
Ohio Brass Co. .... Mansfield, Ohio
Trolley Poles, Steel
Dorner Railway Equip. Co...Chicago, Ill.
Trolley Wheels
Tallman Brass & Metal Co..Hamilton, Ont.
Trucks
Jas. Smart Mfg. Co. ......Brockville, Ont.
Trucks, Electric Car
Baldwin Locomotive Works..Philadelphia.
Canadian Steel Foundries, Ltd...Montreal
Trusses, Roof
Canadian Bridge Co. ....Walkerville, Ont.
Cleveland Bridge & Eng. Co., Ltd.,
Dominion Bridge Co. ....Montreal.
Tubes, Boiler
Jas. W. Pyke & Co., ...Montreal.
Turbines, Steam
Allis-Chalmers-Bullock Ltd .....Montreal.
Turnbuckles
Canadian Steel Foundries, Ltd...Montreal
Turntables
Canadian Bridge Co. ....Walkerville, Ont.
Dominion Bridge Co. ....Montreal.
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Royal Typewriter Co. ....New York
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Consolidated Car Heating Co. Albany, N.Y.
Detroit Lubricator Co. ..... Detroit, Mich.
Williams & Wilson, Ltd. ....Montreal.
Valves, Angle and Globe
Detroit Lubricator Co. .... Detroit, Mich.
Kerr Engine Co. ....Walkerville, Ont.
Nathan Manufacturing Co. ....New York.
Valves, Brass Gate
Detroit Lubricator Co. ..... Detroit, Mich.
Kerr Engine Co. ....Walkerville, Ont.
Valves, Check
Nathan Manufacturing Co. ....New York.
Valves, Iron and Brass
Canadian Fairbanks Co., Ltd....Montreal.
Valves, Iron Gate
Detroit Lubricator Co. ..... Detroit, Mich.
Kerr Engine Co. ....Walkerville, Ont.
Valves, Locomotive Pop
T. McAvity & Sons ....St. John, N.B.
Taylor & Arnold ....Montreal.
Valves, Steam
Detroit Lubricator Co. ..... Detroit, Mich.
Nathan Manufacturing Co. ....New York.
Vanadium Steels.
American Vanadium Co ....Pittsburg, Pa.
Varnishes
The Dougal Varnish Co., Ltd....Montreal.
Velocipedes
Kalamazoo Ry. Sup. Co..Kalamazoo, Mich.
Ventilators, Car
Burton W. Mudge & Co. ....Chicago, Ill.

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Polson Iron Works, Ltd ....Toronto
Wagons, Dump
Western Wheeled Scraper Co..Aurora, Ill.
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Steel Co. of Canada, Ltd..Hamilton, Ont.
Waste
B. J. Coghlin & Co. ....Montreal.
N. L. Piper Railway Supply Co...Toronto.
Water Softeners
Babcock & Wilcox, Ltd ....Montreal.
L. M. Booth Co. ....Chicago, Ill.
Dearborn Drug & Chemical Co., Chicago.
Welding
Goldschmidt Thermit Co. ....Toronto.
Wheelbarrows
F. H. Hopkins & Co.,..........Montreal.
Meaford Wheelba'ow Co. Ltd. Meaf'd, Ont.
Wheels, Car
Canada Iron Corporation, Ltd.,..Montreal.
Canadian Car & Foundry Co....Montreal.
Jas. W. Pyke & Co., ...Montreal.
Standard Steel Wks. Co.,Philadelphia, Pa.
Wheels, Locomotive
Canada Iron Corporation, Ltd.,..Montreal.
Wheels, Re-inforced Pressed Steel
Kalamazoo Ry. Sup. Co.Kalamazoo, Mich.
Wheels, Rolled, solid Forged
Standard Steel Wks. Co.,Philadelphia, Pa.
Wheels, Steel Tired
Standard Steel Wks. Co.,Philadelphia, Pa.
White Lead
Steel Co. of Canada, Ltd..Hamilton, Ont.
Windlasses
Dake Engine Co. ....Grand Haven, Mich.
Windmills
Ontario Wind Engine & Pump Co.Toronto.
Wire
American Vanadium Co. ....Pittsburg, Pa.
Titanium Alloy Mfg. Co...Pittsburgh, Pa.
Wire and Wire Rope
Canada Wire & Cable Co., Ltd...Toronto
Dominion Wire Rope Co. ......Montreal.
Mussens, Limited ....Montreal.
The Wire & Cable Co. ....Montreal.
Wire, Brass, Iron and Steel
Steel Co. of Canada, Ltd..Hamilton, Ont.
Wire, Copper
E. F. Phillips Elec. Works, Ltd .Montreal.
The Wire & Cable Co. ....Montreal.
Wire, Electric
Canada Wire & Cable Co., Ltd...Toronto
Chapman & Walker, Ltd ... .Toronto.
E. F. Phillips Elec. Works, Ltd..Montreal
The Wire & Cable Co. ....Montreal.
Wire Goods, Bright
Steel Co. of Canada, Ltd..Hamilton, Ont.
Wire, Insulated, Copper
Canada Wire & Cable Co., Ltd...Toronto
E. F. Phillips Elec. Works, Ltd..Montreal.
The Wire & Cable Co. ....Montreal.
Wire Rope Clips
American Hoist & Der. Co.St. Paul, Minn.
Wire, Telegraph and Telephone
Canada Wire & Cable Co., Ltd...Toronto
Chapman & Walker, Ltd ....Toronto.
E. F. Phillips Elec. Works, Ltd..Montreal.
The Wire & Cable Co. ....Montreal.
Wire, Transmission and Trolley
Canada Wire & Cable Co., Ltd...Toronto
Chapman & Walker, Ltd ....Toronto.
The Wire & Cable Co. ....Montreal.
Wrenches, Cast Steel
American Brake Shoe & Fdry. Co. Mahwah
Yachts
Polson Iron Works, Ltd ....Toronto

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"B. & W." 30 Tons Electric Travelling Goliath Crane, 70 Feet Span

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HEAD OFFICE FOR CANADA:
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Traders Bank Building

The Railway and Marine World

September 1911.

THE HISTORY OF SUPERHEATED STEAM

By Frederick H. Moody, B.A.Sc.

The subject of superheated steam is so well known, and the savings obtained through its use so well recognized on nearly all sides, that any further introduction of the subject is unnecessary. Very few complaints are on record where superheated steam has not done all that was expected of it where intelligently applied in lines defined by considerable experimental work on the part of the principal exponents of the subject. In marked contrast to the present development of superheating in Canada and the United States, is the reported disfavor into which superheating appears to have fallen in Germany, where it is stated that much more economical operation may be obtained through compounding rather than superheating. Consequently, there is a material decrease in the number of locomotives being built that are equipped with superheaters, the compound locomotives growing proportionately greater in number.

This, however, is digressing from the historical phases of the subject, which are many and varied, for while, as will be noted in the following, many attempts have been made to introduce superheated steam into use in both stationary engine and locomotive practice, nothing of practical value in that direction was accomplished until within the last few years.

EARLY ATTEMPTS.

The earliest recorded attempt at using the principles of superheating was made in 1828 by Richard Trevethick at the Birnie Down Mines in Cornwall, on a condensing pumping engine, making 8 revolutions per minute, with a boiler pressure of 45 lbs. per square inch. At this slow speed, and with such lagging materials as were in use in those days, the condensation was very great. Trevethick conceived the idea of reheating the steam in the cylinder to re-evaporate the condensation. To attain this end, the cylinder and piping were surrounded with firebrick and heated from a fire on a grate beneath. A remarkable saving was noted; ordinarily 9,000 lbs. of coal were consumed per day, whereas with a fire under the cylinder, only 6,000 lbs. were required, including the coal for the superheating grate. This led to further experiments by Trevethick, resulting in his tubular boiler and superheater in 1832, which, it is claimed, is quite modern in appearance.

The same year saw another superheater produced, this one being invented by I. Howard, of Bermondsey; an economy of 30% was obtained. In 1835, Dr. Haycroft, of Greenwich, advocated the use of superheated steam, and in experiments which he conducted, practically the same savings as those noted by Howard were obtained. It will thus be seen that at a very early date, it was realized that as steam expanded, in order to prevent condensation, it was necessary to add heat; this is the superheat.

The period from 1835 to 1848 furnishes no records of any work having been performed on the principles of superheating. In the latter year, the first superheater ever applied to a locomotive was introduced by John Cockerill, of Serang, Liege, Belgium, so that this date is, so to speak, a very important landmark in locomotive development. This superheater consisted essentially of a shell in the smokebox, with an annular space around the stack, and, while nothing is known of its actual operation, it has been inferred that from its nature and position, it cannot have done more than dry the steam, naturally affecting the economy but slightly. Several more modern attempts at obtaining economy have failed from the same cause.

J. H. Black,
Ex-Superintendent, Temiskaming and Northern Ontario Railway.

The next attempt made was by M. Moncheuil, for the Montereau and Troyes Railway, the types used being ones patented by M. A. De Quillacq in 1849. M. De Quillacq devised three types, all of which were used by M. Moncheuil. The first two types had the same principle, having flame flues containing the superheater tubes, the former, however, having only one flame-flue with coils for superheating, while the latter had several. These two kinds were applied to 2-2-2-type locomotives. The third kind was unique in design, consisting of a drum on top of the boiler, in the top of the firebox; part of the gases ascended through a damper-regulated opening, and through a large pipe in the centre of the drum to the stack. The pipe passing through the drum longitudinally, formed an annular space for the superheating of the steam.

The next type was that devised in 1852 by Mr. Haswell, of the Vienna Locomotive Works. It consisted of a coil located in the firebox for the superheating; it is doubtful if one was ever constructed. Shortly after, in 1855, M. Montety, a French engineer, devised a new type, consisting of a coil in a large flame-tube, similar to one of the Moncheuil types, with the exception that the coils were secured to steam reservoirs corresponding to headers of the modern types.

EARLY SCIENTIFIC INVESTIGATIONS.

About this period, superheating was being investigated scientifically by the Alsatian engineers, who are known in engineering history for their discoveries in thermodynamics, laying down many of the underlying principles that are now in common use. In 1857, Mr. Hirn, the leading light of this group, issued a report of trials and experiments made by him on the value of superheating, which showed that a large gain might be expected. The boiler pressure used by him was 55 lbs. per square inch, with a temperature of from 410 to 490 degrees F., obtaining economies of from 20 to 47%, which would seem to be greater than those at present. This, however, is due to the fact that saturated steam engines are much more efficient now than at that time.

This scientific investigation begun by Hirn, was continued by John Penn, who, in a paper on superheating, presented before the Institute of Mechanical Engineers, referred to several cases of superheating then in successful use. In 1860 a total of 5,000 horse-power had been equipped with superheating devices, the surface employed being from 2.25 to 2.75 square feet per nominal horse-power; most of the experimenters were agreed on this particular, and obtained about the same efficiency.

In 1860, also, Parsons and Pilgrim's method of superheating, as applied to steamboats on the Thames, was explained in an Institute of Mechanical Engineer's paper. Their method was the first to embody the present-day principle of placing the superheater as near the fire as practicable to obtain a high degree of superheat, for in this case the superheater consisted of iron pipes in, and forming part of the fire-grate. This was a radical change, for all other cases of marine superheating used the waste gases.

Mr. Haswell devised still another locomotive type in 1862, using the waste gases, the superheater being concentric with the stack. Still another change occurred in 1863, when a Mr. Crawford invented a new type, in which part of

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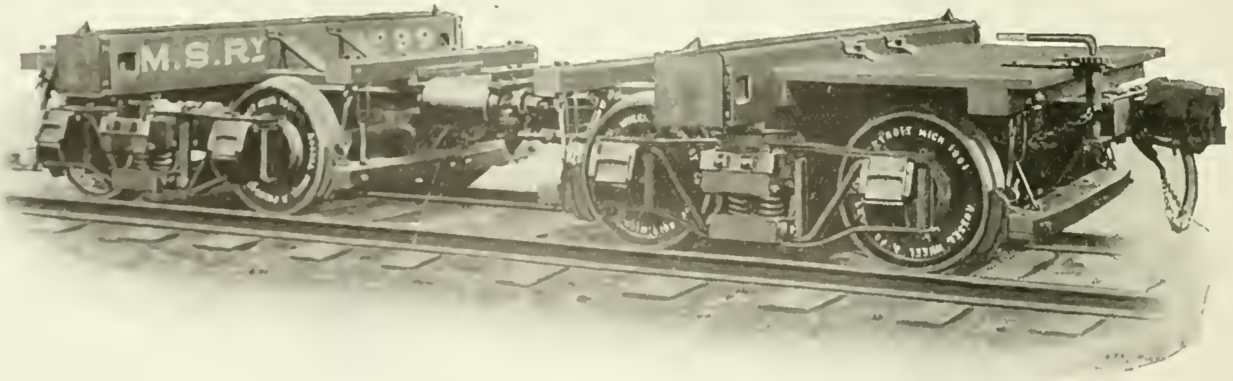

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the boiler is partitioned off, as in the modern Clench type. However, nothing is known of its value in service. Hittorf, in 1869, introduced a new type, in which the superheater was in a drum on top of the boiler, as with one of the Moncheuil types mentioned before.

Compounding Superseding Superheating.

In 1865, compounding first came into prominence, and from that time on superheating was rapidly abandoned, for equally good results could be obtained with compounding, without the evil effects that at first attended the use of superheated steam. It was found that with steam at 400 degrees F. or over, which was the common practice, the animal fats, at that time the 'only ones procurable, it being before the day of the mineral product, became dessicated by the heat, leaving a hard product that not only scored the wearing surfaces, but also increased the friction. The attendant high pressures used in multiple expansion engines, was also a detriment to superheating from the same cause, owing to its high initial temperature, which, while normally high, is much greater by the superheating.

Nothing appears to have been done in America along the lines of superheating until in 1870 (when its use was being given up on the European Continent by all but Hirn and his followers), the Chicago, Burlington and Quincy Rd. applied a type of its own, like the modern Clench, to one of its locomotives. The trials showed some economy, but not sufficient to warrant its introduction into actual service, as the maintenance expenses were materially increased. For that reason it was abandoned.

Reasons for Recent New Life.

With the introduction of hydrocarbon, mineral lubricating oils, balanced valves and improved packing, the use of considerably higher temperature became possible, and in 1890, interest in the subject was again renewed by the results obtained in Germany by Gehre, Schwoerer, Uhler and others. Since that date, the progress in England and Germany in stationary practice has been very marked.

The first man of recent times to use highly superheated steam was Dr. Wm. Schmidt, who in 1892 used a small single-acting, stationary engine with steam at a temperature of 650 degrees F. The engine was purposely made single-acting, for it was at first thought that, as with gas engines, the temperatures would be detrimental to the materials of the engine; but Schmidt modified the details so as to use superheated steam double-acting without these deteriorating results.

This development by Dr. Schmidt was carried forward to such an extent that at present there are very few new plants of any pretensions that are not using superheated steam. The present development in the application of superheaters to locomotives is due to Tarbe and Muller, of the Prussian State Railways, who, in 1898, arranged to have two locomotives equipped with superheaters according to Dr. Schmidt's design. From that time on the spread has been very rapid, with the exception of the present compounding tendency in Germany, previously mentioned.

In America the revival of superheater locomotives was due to Roger Atkinson, Mechanical Superintendent of the Canadian Pacific Ry., who, in 1901, applied a Schmidt smoke-box superheater to a simple 10-wheel freight locomotive. So satisfactory did this prove that further locomotives were equipped, not only with Schmidt, but also with the Cole type. Numerous other roads, both in Canada and the United States, have tried superheater locomotives with varying degrees of success. It still remains, however, for the Canadian Pacific Ry., the pioneers in the field, to retain the supremacy, H. H. Vaughan, as is well known, being probably the strongest exponent of locomotive superheating in America. The type used by this road is the Vaughan-Horsey, designed by Mr. Vaughan and A. W. Horsey, formerly Mechanical Engineer, Locomotive Department, Angus shops, and now District Master Mechanic at Farnham, Que.

Recent history with regard to superheater practice on locomotives is so familiar to all that no further comments need be made on the subject. The one conclusion that stands out the strongest is the fact that when properly designed and operated a material net economy can be, and is, effected.

Of the other roads in Canada, the Canadian Northern is the only one that has adopted the superheater policy. This road has 20 now in service and 20 more on order. Neither the Grand Trunk nor Intercolonial have as yet had any locomotive equipped with superheaters.

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Selection of Length of Transition Curve.

By Frank H. Carter A.M. Am. Soc. C. E.

In fixing the alignment of a projected fast interurban electric railway, the writer was confronted with a dearth of information concerning either theory or practice for rigorously selecting proper lengths of easement or transition curves. The only line of thought or suggestion on the subject which could be found was that outlined by Prof. Talbot in his work on the transition curve, and that appeared to be more or less specially applicable to his particular spiral. As spirals of the Searles type had been adopted and were in use on the road in question, it seemed inadvisable to make any radical change in the type of easement curve. None of these standard easement curves, however, were of a length greater than 100 ft., while the theory which is presented herewith demands lengths up to and in some cases exceeding 300 ft.

MECHANICAL SUGGESTIONS.

It is a time-honored saying that "familiarity breeds contempt." Those few words sum up briefly the view held by many of our most valued readers, who have access to funds of invaluable information and data that would prove of great assistance to the railway fraternity if only disseminated through the medium of the technical railway press. What is in mind at present is the dearth of good shop information. Each shop, in addition to having the standard tools and equipment necessary to good production, has been compelled from time to time to exercise native ingenuity in devising ways and means in the form of tools, methods, etc., to cope with the problem in hand. Every shop is full of such ideas—ideas that would likely prove of value to others. Besides, we are willing to pay for them at a liberal rate. Send them in, whether or not you consider them worthy of publication, and we will make the necessary suggestions if they do not prove satisfactory.

While the writer was engaged in an attempt at a rigorous solution of the problem, there appeared a very creditable report of the Committee on Track of the American Railway Engineering Association (Bulletin 108) with a principle, new to the writer, from several of the roads; namely, a length of curve dependent upon the rate of rise of the outside of a train on a curve (at the rail) in inches per second.

The rate of rise of super-elevation on easement curves is largely, if not entirely, a question of its effect on passengers as to whether the rapidity of vertical rise of one side of the train produces a disagreeable sensation. An attempt to formulate the proper length of transition curve from the rate of rise of rail in inches per 100 ft., without regard to the speed of the train, is approaching the problem from the wrong standpoint. In any formula of type $l = C D V^2$ the constant C, as will be shown, fixes the rate of rise of super-elevation of rail; therefore, but one curve and one speed will satisfy this equation in regard to rapidity of rise of train in inches per second. All other curves or speeds will convey different sensations of ease of riding to the passenger. The average rate of rise of the outside of the train (at the rail) in inches per second should be the governing function for the determination of the length of transition curve, as will be discussed a little later. In fixing alignment, smoothness of riding is all important for comfort; hence, the same rate of rise of super-elevation on curves in inches per second should govern for the entire road, where a schedule can be predicted with any degree of certainty, a difficult matter, of course, in most cases for new roads, but almost always capable of realization in re-alignment, when time tables are established.

It appears to the writer that the provision that "the length of the curve should not be less than 30 times the elevation in inches for the ultimate speed" (literally meaning that no rise of super-elevation shall be greater than 1 in. in 30 ft.) is a wise one for places where the speed cannot be predicted, but that is not the best practice, in that the rate of rise of transition will not in that case depend upon the speed of the train.

The last clause of the paragraph for the Manual of Recommended Practice of the American Railway Engineering Association, concerning the length of easement curve: "that the curve should not be less than two-thirds the ultimate speed in miles per hour times the elevation in inches," places a more rapid rate of rise of the car in inches per second than has been considered best practice for steam roads, according to available information in the hands of the writer. By this rule the rate of rise would amount to about 2.17 ins. per sec., while practice appears to be from 1¼ to 1½ ins. per sec. rise.

The length of easement curves used on the Cleveland, Cincinnati, Chicago & St. Louis Ry. is apparently based on an assumed rate of rise of 1¼ ins. per sec., and the practice of the Delaware, Lackawanna & Western Ry. is given as 1½ ins. per sec.

It is true that cases may be cited where faster rates of rise have been used; notably, a local fast urban electric railway has several spirals where the rate of rise is 1 in. in 20 ft., corresponding to 2.20 ins. per sec. vertical rise at 30 m.p.h.

These curves are said to be easy riding from the standpoint of electric road practice, but jolts and roughness of riding which might be tolerated by passengers on an urban electric road or an elevated road, would not be considered good practice for steam roads.

The foregoing is taken from the appendix to the reports of the American Railway Engineering Association's committee on track, as presented at the last meeting.

◆

The city of Montreal has purchased from the C.P.R., for $309,911, an area of land in Verdun, for a site for the civic filtration plant.

The Canadian Pacific Land Co., having agreed to insert in future advertisements the words "not connected with the C.P.R.," the C.P.R. has withdrawn the action entered in the Court of Chancery, London, Eng., for an injunction to restrain the company using the words "Canadian Pacific" in its title.

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The Principal Features of the Walschaerts Gear.

The Walschaerts valve gear, while in extensive use during the past half century or more in Europe, has only come into general use in America since 1905. Previous to that date, some few roads had made attempts at its use, the most notable example being that on the Boston, Revere Beach and Lynn Ry., a short narrow-gauged line. In this particular case the principal reason for its use was the cramped space due to the narrow gauge. The gradual evolution of the locomotive to its present gigantic proportions has developed the same cramped conditions that this narrow gauge road encountered in the early eighties, so that at present it is more generally employed than any other form of motion, especially for heavy road service.

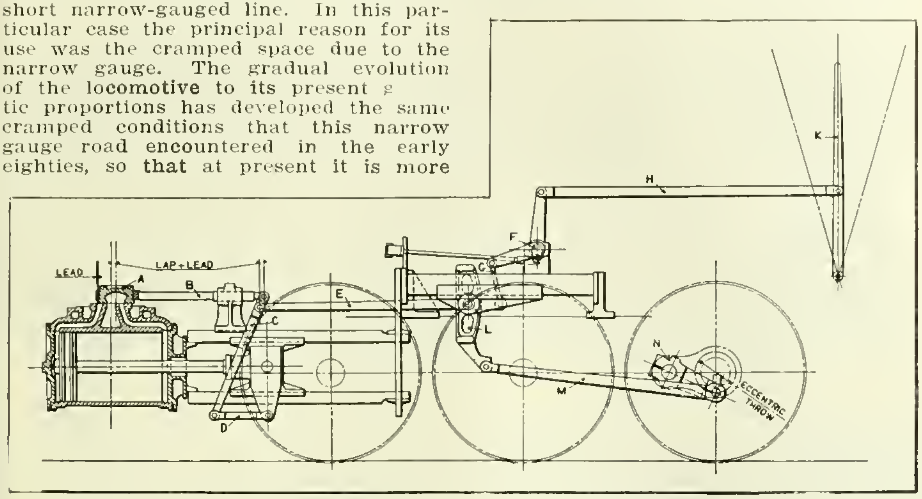

Fig. 1. Walschaerts Valve Gear for Outside Admission.

The principal advantage of this gear lies in the accessibility of its parts, placed as they are outside the driving wheels. This makes oiling, inspection, and cleaning simpler than with the Stephenson gear. Also, in heavy engines equipped with the latter gear, the eccentrics must be made of large diameter to give the desired throw, thereby increasing the rubbing surface velocity, causing the surfaces to heat and consequently wear. The Walschaerts gear, being entirely pin-connected, eliminates this difficulty.

Referring to figs. 1 and 2, it is seen the Walschaerts motion is of the radial type, employing a link L trunnioned at its middle point, this link being rocked by an eccentric rod M, actuated from a return crank N, secured to the main crank pin. The movement of the link is transmitted to the valve A by a radius rod E of the length of the link radius. This radius rod has a sliding pin connection in the link block, and can be raised or lowered by the reverse lever F, the upper position being for one direction of motion, while the lower is for another, as will be subsequently explained.

The eccentric return crank is set exactly quartering with regard to the main crank, so that if the radius rod were directly attached to the valve stem B, for the end position of the piston, the valve would be in its middle position. For middle position of piston, the valve should be displaced an amount equal to the steam lap plus the lead. In the Walschaerts gear the lead is given by a combining lever C, attached to both the valve stem and radius rod, and also connected through a suitable link D to the crosshead. The combining lever is so proportioned that if a point of its connection to the radius rod be kept a stationary fulcrum, and the piston moved a distance equal to the stroke, the valve will be moved a distance equal to twice the lap, plus the lead. This displaces the valve, the amount of load for the end position of piston.

For outside admission, the valve rod is connected to the combining lever above the radius rod connection; and the eccentric crank leads the main pin if the block is in the lower half of the link in forward gear, and vice versa.

For inside admission, the valve rod is connected to the combining lever below the radius rod connection, and the eccentric crank follows the main pin if the block is in the lower half of the link in forward gear, and vice versa.

Inasmuch as the position of the valve when the piston is at the end of its stroke is dependent on the combining lever only, it is evident that the lead given by the Walschaerts gear is the same for all points of cut-off. This is the principal feature which distinguishes this gear from the Stephenson motion as far as steam distribution is concerned. All parts of the Walschaerts motion should be correctly laid out and constructed from a diagram, and the gear designed to give the lead most desirable for the usual running speed. The parts having been correctly made, it is impossible to alter the lead without seriously deranging the motion. In this respect, the Walschaerts gear is less flexible than the Stephenson, but when the correct steam distribution is obtained it is less liable to derangement.

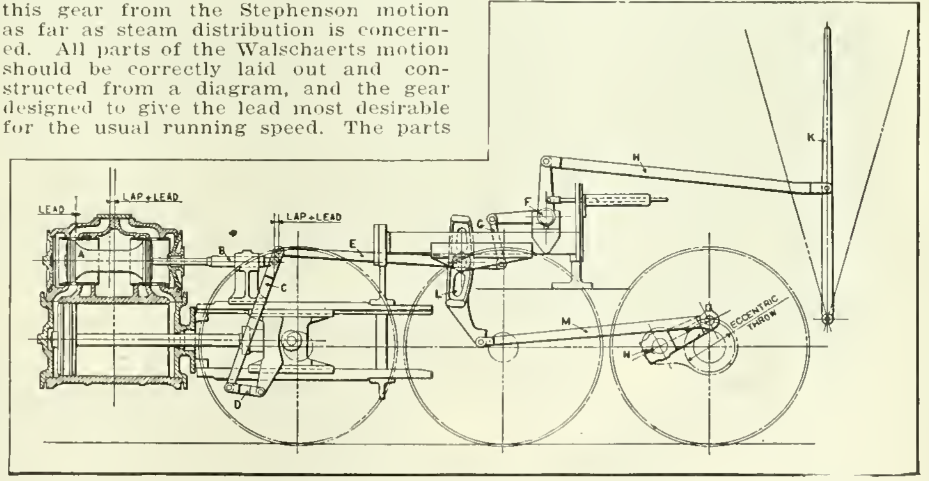

Fig. 2. Walschaerts Valve Gear for Inside Admission.

There are numerous possible arrangements of the gear, and many of these modifications of the original gear are in successful use. The general design of the engine influences to a large extent the arrangement of the motion.

As previously mentioned, all parts of the gear must be laid down on a diagram in order to insure correct steam distribution. If all the details could be made and assembled exactly to drawing, any further setting of the valves would be unnecessary. Such accuracy is impossible in practice, so that after assembling, some adjustment is necessary.

The information contained in this article is abstracted from Record no. 70, published by the Baldwin Locomotive Co., Philadelphia, Pa.

The Classification of the Graduation on Railway Construction.

By J. M. Shanly, M. Can. Soc. C. E; M. Am. Soc. C. E., Montreal.

Referring to the very interesting article on "The Classification of Graduation on Railway Construction," by Professor Dalton, published in your August number.

As Professor Dalton says, the question of classification of materials in excavation is one of the most difficult problems which the young, or indeed the old, engineer has to solve and it is also one of the most important, and no specification that has ever been written covers the whole matter. An engineer can define rock and earth in their strict geological sense without difficulty, but if he follows out such a classification strictly he will probably ruin most of the contractors who have the misfortune to work under him.

A specification can only be taken as a general outline on which to base the classification, and, while a court will no doubt take it in its literal sense, the engineer, if he is a fair-minded man, will vary its terms to suit particular conditions. The question is not to determine what is actually earth and what is actually rock, but what is the relative cost to the contractor of excavating the different kinds of material found in cuttings. I have seen soft clay and quick sand, which had to be loaded into carts with scoops, and would slop out like mortar, and which would cost as much or more than ordinary rock to handle, yet under the usual specifications this would be classed as earth. Hard pan and cemented gravel are also sometimes as expensive to handle as rock, but very often must be taken out as earth, if the terms of the contract are literally interpreted.

The young and inexperienced resident engineer cannot, of course, be allowed much latitude in classification, but he should endeavor to form a fair idea as to what it should be in justice to the contractor, and then give his chief the benefit of his observations and let him decide the doubtful points.

A man who keeps his eyes open can soon see whether a cut is being properly handled and can form a good idea as to what the moving of the material is costing. If he finds that under the strict letter of the specification the material is earth, while, judging by the cost to the contractor, it is loose rock, he should report to the chief that, in his opinion, the contractor is not receiving fair treatment and give his reasons for thinking so.

I cannot agree with Professor Dalton

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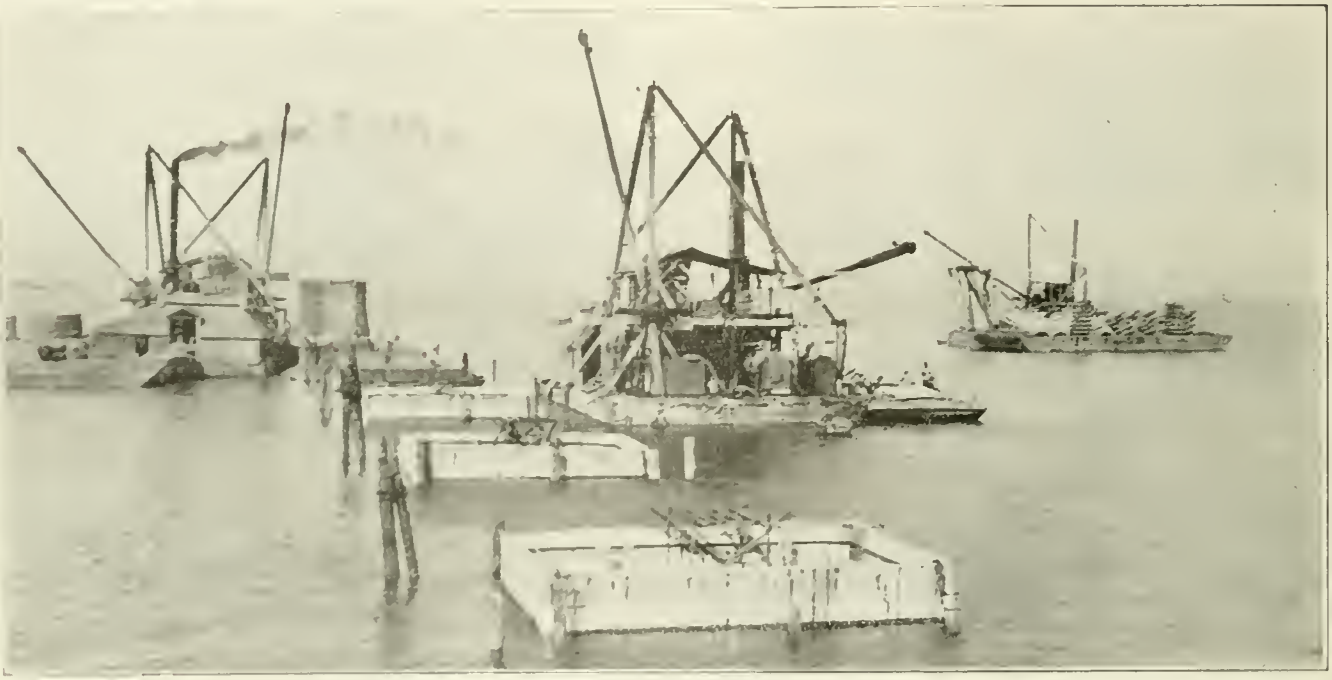

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that there should be no classification, as this would throw the whole burden on the contractor and would naturally force him to bid higher, in order to cover the risks taken. On the same principle the whole contract might be let for so much per mile, or even for a lump sum, to cover everything from right of way to ballast.

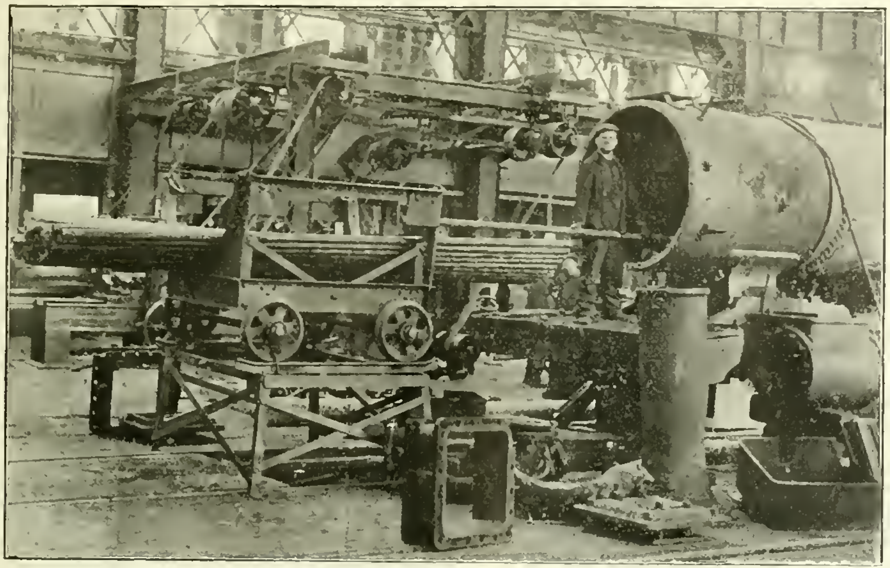
Fig. 1. Removing Tubes from Boiler for Putting on New Ends.

The contractor is as much entitled to his profits as the engineer is to his salary, and where there is a loss, unless, of course, it is due to bad management, he is simply furnishing so much capital to the company without any return, which is an injustice, even though it may be strictly legal under the terms of the specification.

Repairing Boiler Tubes at C.P.R. Angus Shops.

The C.P.R., in its Angus shops, Montreal, has developed ways and means for handling boiler tubes while in the shops for re-ending and cleaning, which is decidedly unique. At the same time they provide a means of expediting the work to a degree that would be impossible under old methods of handling and end-welding.

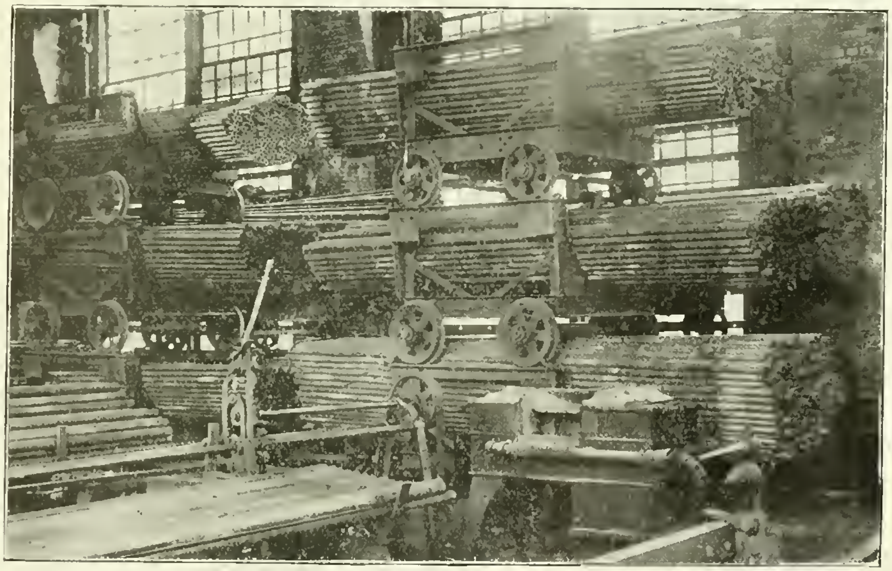
Fig. 2. Tube Storage in Rack Cars specially constructed for the Purpose.

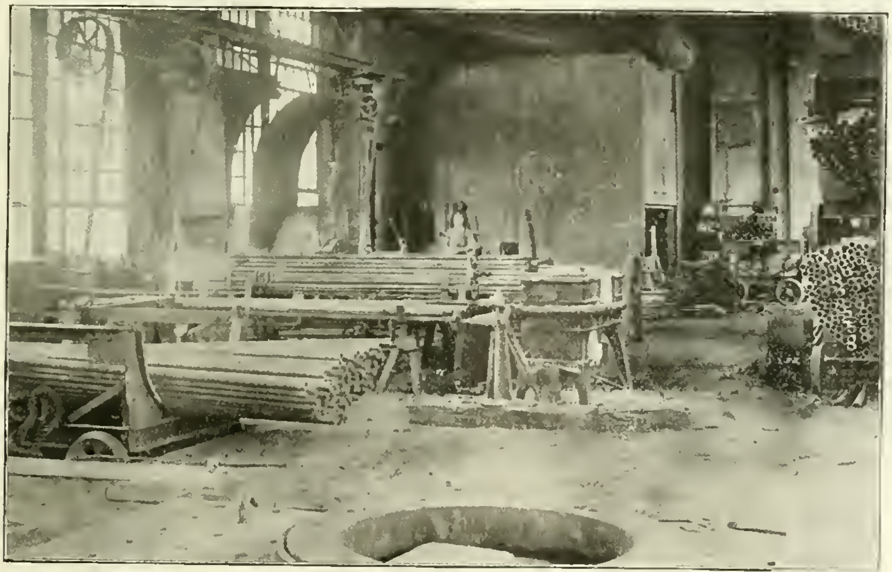
Fig. 4. Department where the Tubes are trimmed, New Ends welded on, and finally cut to Length.

As shown in fig. 1, the tubes on being removed, are placed in a specially formed truck, as indicated. This truck is in an elevated position to facilitate the handling, making it unnecessary to have an extra helper to whom the tubes would be handed. The truck stand has a special rail top of the truck gauge, the ends of the track being bent up to prevent the car running off. Hook bolts further hold the truck in position during the filling operation.

All the tubes from one boiler being removed, the holding truck is transferred to the storage space shown along the wall in fig. 2. This space is sufficient to accommodate 18 trucks, the practice being to pile them three high. To make this possible, examination of the truck in fig. 1 will show that the top has a track similar to that on the supporting truck, on which the upper trucks may be placed. The superiority of this method of storing is very apparent. The foreground of fig. 2 shows the end trimming and welding machines, which, however, are illustrated more advantageously in fig. 4, and in connection with the latter illustration they will be more fully described.

For cleaning the tubes, a machine made by J. T. Ryerson and Sons, Chicago, Ill., is used; this machine is shown in operation in fig. 3. The machine operates on the tumbler principle, the chains lifting the tubes up from the holding truck and when at a sufficient height, the chains pass over their sprockets, tumbling the tubes around, cleaning the tubes very effectually. The time required is materially less than by the old hand chipping process. The tubes throughout this process are handled entirely by mechanical means, being lifted up, cleaned and replaced without handling separately.

Fig. 4 is a view of the shop shown in fig. 2, taken from another position. Here the tubes are trimmed, new ends welded on, and finally cut to the requisite length in a manner similar to that described in the Nov., 1910, issue of the Railway and Marine World, which outlined the practice of the C.P.R. West Toronto shops. A neat weld is obtained by the method employed, the main feature in the process being the fact that two bevelled edges are brought overlapping to form the weld instead of merely flaring the end of the piece to be welded on, and slipping it over the tapered end of the main part of tube. The facilities provided for making the tubes easy to handle, are emphasized in this illustration, where the carrying truck is shown lowered into a cut-out in the ground, thereby keeping the tube clear for handling. Another view of the shop where the tubes are re-ended, is illustrated in fig. 5.

The information and illustrations in this article were obtained from Lacey R. Johnson, Assistant Superintendent of Motive Power, C.P.R., Eastern Lines.

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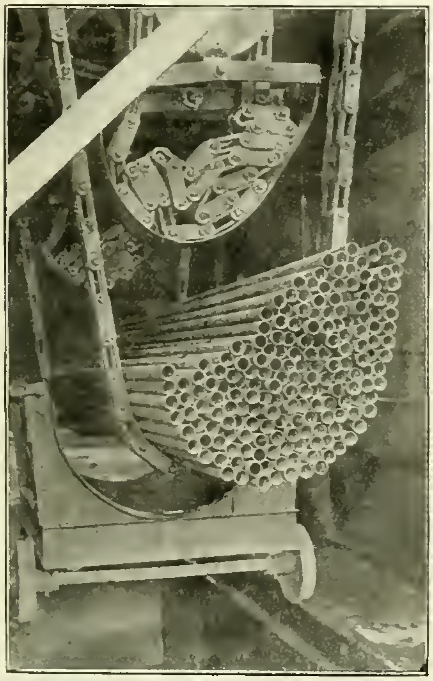
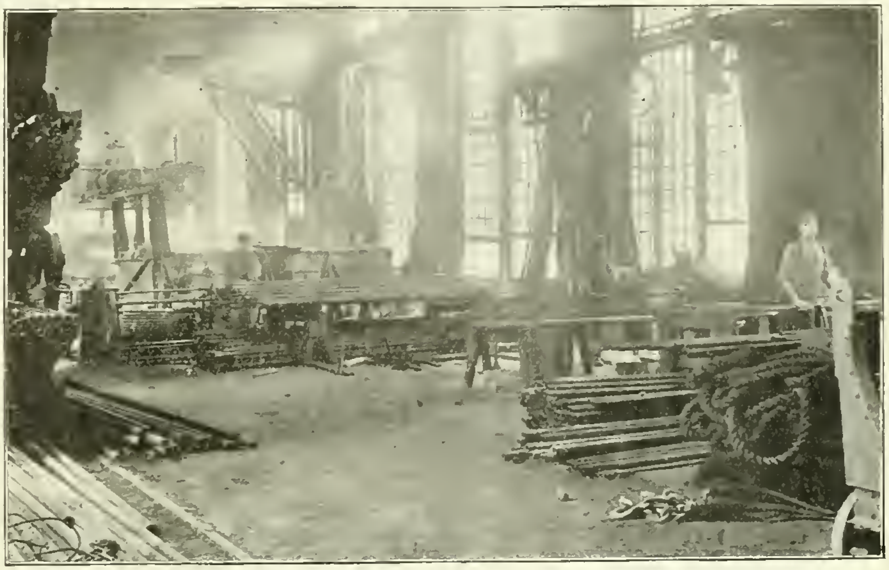
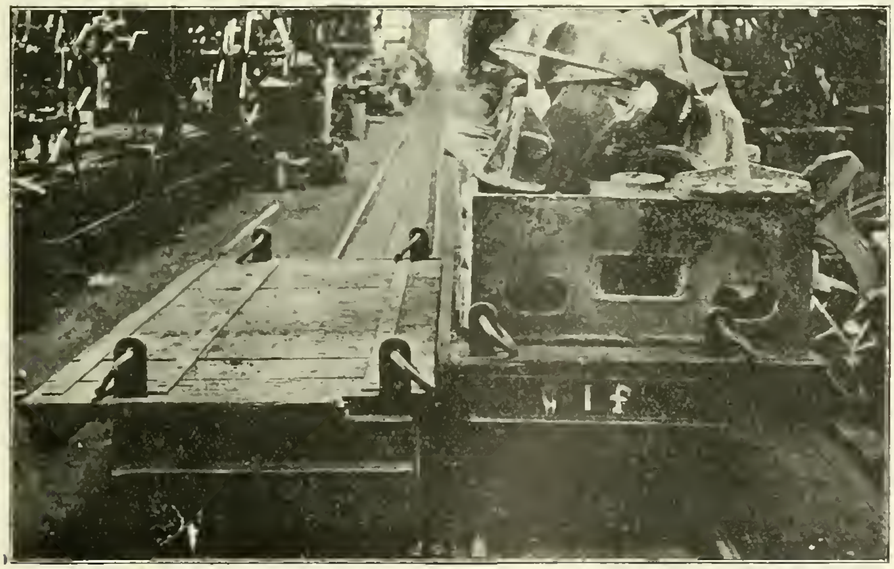
Shop Car at C.P.R. Angus Shops.

Every plant of any pretensions has a small industrial railway with feeding lines running through the shops to carry material from point to point during the successive stages of manufacture.


Ryerson Tube Cleaner in Operation. Fig. 3.


Another View of Tube Repairing Department. Fig. 5.


Shop Trucks used on the Industrial Railway in the C.P.R. Angus Shops.

The system of shop tracks in the C.P.R. Angus shops at Montreal, information concerning which has been obtained from Lacey R. Johnson, Assistant Superintendent of Motive Power, Eastern Lines, is particularly good, the main feature being its flexibility, made possible by the kind of car and arrangement of trackage.

The accompanying illustration shows the type of car used and the arrangement of trackage. A double narrow gauge track has been laid of such proportions that the two outer rails form a standard 4 ft. 8½ in. gauge. The inner rails are quite close together, just sufficient space being left to permit the journal boxes to clear. The outer edge of each truck is extended about a foot, giving an overhang, while the inner face is flush with the axle. This provides two fairly wide, offset cars, which may be operated independently or in pairs when so desired, for heavy loads. Singly, they are capable of handling castings and forgings of large proportions. Instructions have been issued concerning the extent of the loading and the direction of traffic on the two tracks, resulting in smooth operation.

At intervals throughout the shops, turntables and cross-tracks are provided, and on these cross-tracks all the loading and unloading is done whenever possible. This arrangement of cars and trackage has been found to be excellent for the handling of material in the shop, especially when it is necessary to transfer it from one department to another.

◆

The Utica Mining Co., Kaslo, B.C., is arranging for the building of a tramway on its property, to connect with a concentration about to be built, and probably with the Kaslo and Slocan Ry. and the C.P.R.

Michigan courts have granted a temporary injunction against the enforcing of the two-cent-a-mile passenger fare law, on the application of the Duluth, South Shore and Atlantic Ry. The law was to have become effective in Michigan Aug. 2.

Railway and Allied Associations, Clubs, Etc.

The names of persons given below are those of the secretaries.

CANADIAN CAR SERVICE BUREAU, J. E. Duval, 401 St. Nicholas Building, Montreal.

CANADIAN FREIGHT ASSOCIATION, T. Marshall, Union Station, Toronto.

CANADIAN FREIGHT ASSOCIATION (Western Lines), W. E. Campbell, 101 Bon Accord Building, Winnipeg.

CANADIAN RAILWAY CLUB, J. Powell, St. Lambert, Que. Meetings at Montreal 1st Tuesday each month, 8.30 p.m., except June, July and August.

CANADIAN SOCIETY OF CIVIL ENGINEERS, C. H. McLeod, 413 Dorchester St. west, Montreal.

CANADIAN STREET RAILWAY ASSOCIATION, Acton Burrows, 70 Bond Street, Toronto.

CANADIAN TICKET AGENTS ASSOCIATION, E. de la Hooke, London, Ont.

CENTRAL RAILWAY AND ENGINEERING Club of Canada, C. L. Worth, 409 Union Station, Toronto. Meetings at Toronto 3rd Tuesday each month, except June, July and August.

EASTERN CANADIAN PASSENGER ASSOCIATION, G. H. Webster, 54 Beaver Hall Hill, Montreal.

ENGINEERS CLUB OF MONTREAL, C. M. Strange, 9 Beaver Hall Square, Montreal.

ENGINEERS CLUB OF TORONTO, R. B. Wolsey, 94 King St. west, Toronto.

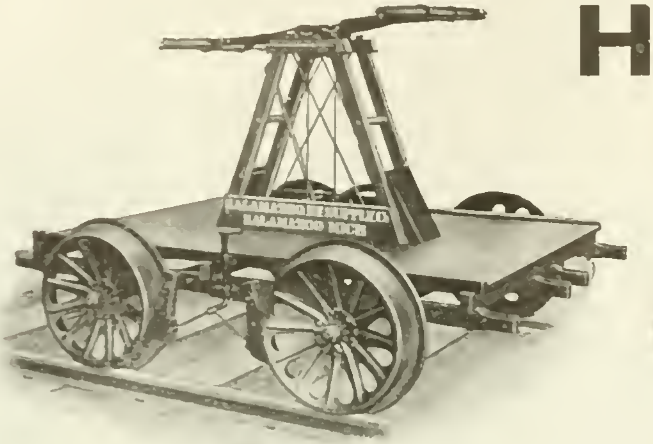
NOVA SCOTIA SOCIETY OF ENGINEERS, J. Lorn Allan, Halifax and Eastern Ry., Dartmouth, N.S.

QUEBEC TRANSPORTATION CLUB, J. S. Blanchet, Quebec.

WESTERN CANADA RAILWAY CLUB, W. H. Rosevear, 52½ Princess St., Winnipeg. Meetings at Winnipeg 2nd Monday each month, except June, July and August.

◆

White Pass and Yukon Ry. Rates.—G. A. Mountain, Chief Engineer, Board of Railway Commissioners, sailed from Vancouver, Aug. 8, for Skagway, Alaska, for the purpose of making a physical valuation of the W.P. and Y. Ry. from that point to Dawson, Yukon. Mr. Mountain will report generally as to cost of construction, maintenance and operation, with a view of enabling the Commisioners to form a conclusion as to whether the proposed reductions in tariffs which shippers desire to have enforced are reasonable, or whether, under the exceptional conditions alleged to exist by the company, the existing tariffs are reasonable.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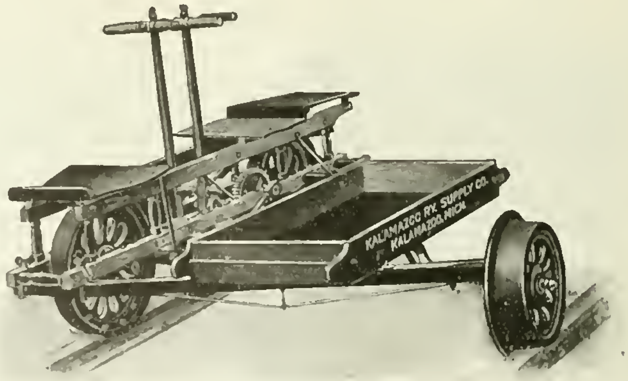
KALAMAZOO RY. SUPPLY CO.
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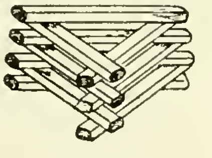
The Proper Care of Track Material and Tools.

Following is the report of the special committee on this question appointed by the Roadmasters' and Maintenance of Way Association of America:

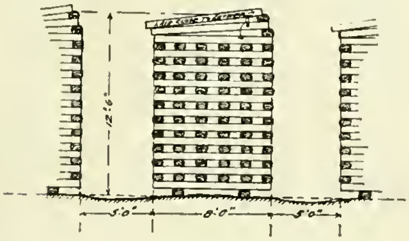
Untreated Track Ties.

Cross ties, when received in rude form direct from the forest, are to be stored in material yards or distributed on roadmaster's subdivision. As soon as unloaded they should be piled—suitable high ground with good drainage having been selected for this purpose. Two old ties or timbers should be placed next the ground as a foundation for the pile, which should be composed of cross tiers with no more than six or seven ties in each tier—the size of the ties would govern—but plenty of space should be allowed between the tiers to permit them to dry out and thoroughly season before being placed in the roadbed. The ties in the last tier should be placed close together to act as a roof over the pile and should have a pitch of about six inches, which can be accomplished by placing two ties under one side of the top tier and one tie under the other side. The last tier should slant away from the track. Ties should be peeled before piling.

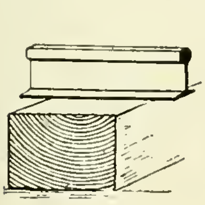
If the ties are unloaded along sections, the number of ties in each pile would depend upon the number of ties per mile required for renewals. If the ties required per mile should be from 200 to 300 we would pile from 25 to 40 ties in a pile; if the tie renewals should be light—say from 75 to 100 per mile—we would pile them in V shaped piles of about 15 ties each, so that the track men would not have to haul them too far on the dump car in distributing them.



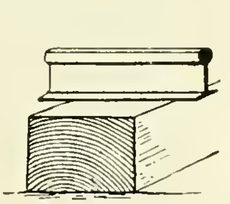
The sod should be removed from around the piles for a space of at least six feet and the grass should be mowed from the grass line to the edge of the right of way at least 50 ft. on each side of the piles to prevent fire from getting into them. In piling untreated ties of all kinds they should be piled with the heart side down and in placing them in the track the heart side should always be placed next to the road bed. The accompanying sketches will show the manner we would recommend for piling and placing in the track.



Note:—In piling ties for seasoning, they should be placed heart side down.



Tie not properly laid.



Tie properly laid.

Treated Track Ties.

Ties treated with solutions of zinc chloride should be piled in cross tiers similar to untreated ties and as openly as possible in order to bring about rapid evaporation of moisture from the ties before they are placed in the track. We believe in the theory advanced that the zinc chloride used in treating the zinc ties is an antiseptic and being forced into the tie renders it impervious to all animal or vegetable life which is the cause of all wood decay. Consequently, the drier the wood becomes, after treating the more thoroughly the wood becomes impregnated with the zinc chloride.

Now the zinc chloride, when pure, is practically insoluble in water and if the chloride could be introduced into the tie in an absolutely pure state, the effect of the tie being wet by rains while in track would be practically nothing. It does not get into the tie in a pure state, however, and the result is that the continual soaking and drying of the tie in the track does eventually wash away the chemical and as it wastes away, the various small animals and fungi find feeding ground in the outer surface of the tie which we then say has begun to decay. This washing away of the chemical treatment, be it either zinc chloride or the other processes of a similar nature, can be very materially reduced by proper ballast and a well drained road bed.

Ties treated with creosote should be piled just the opposite from those treated with zinc chloride. They should be piled in cross tiers, but just as compactly as possible so as to leave no air space between them. The reason for this is that the creosote disappears with some rapidity from the creosoted ties and every precaution must be taken so as to reduce the rapidity of evaporation as far as possible.

On the other hand, the process of treating creosoted ties is done along another line, in that the pores of the wood are filled with creosote oil. In treating these ties, the oil is forced into the wood as thoroughly as possible, rendering the tie waterproof. So long as the creosote oil remains in the tie, it will also keep out any animal or vegetable growth and prevent decay. But all oils are to a certain extent volatile, creosote oil is not an exception to this, but evaporates rapidly for a heavy oil. This can be noticed when a pile of ties is examined at the time of unloading and at a later date, say thirty, sixty, or ninety days after. When first received, the tie is very wet with oil, but later it becomes dry enough to be handled without soiling the hands and the color will have changed from black to a dark brown. This is the case with ties when piled in an open pile or with the outside ties in a compact pile, while the inside ties will still be black and will be almost as oily as when unloaded. This outside oil has not been absorbed by the ties since the oil was on the tie when it left the treating plant, where the pressure is very great and the temperature is raised to a point where the pores of the wood will best admit the oil.

Since we know that the creosote oil does evaporate and that the principle involved in this method of treating is to effectually seal the pores of the tie against the admission of water and air with their load of wood-destroying germs, we easily arrive at the conclusion that the better method is to get the creosoted ties into the track as soon after treating as possible, but in the event that this is impossible, as it usually is in the majority of cases, we would then use the best method we could to stop evaporation by piling them close together. We would go a step farther in the method of piling these ties and would recommend that a layer of fresh earth be placed over the top of the piles which would serve not only as an additional protection against sparks from passing locomotives, but would also be an additional measure of precaution to retard the evaporation of the creosote oil.

Switch Ties and Head Blocks.

When switch ties and head blocks are received, they should be distributed at once to the sections where needed and should receive the same good care in piling as track ties. Old ties or timbers should form the foundation and they should be piled in tiers with a two or three inch strip between each tier. Sufficient space should be left between the tiers or head blocks to permit them to dry out well and thoroughly season before being placed in the track and where a great quantity of this material is piled in supply yards, we would recommend that the different lengths be piled separately to avoid confusion in loading them up for distribution.

Crossing Plank and Fence Lumber.

This material should be piled the same as switch ties, in tiers with at least a two-inch strip between each. Different lengths of planks should be piled separately to avoid confusion and unnecessary handling when taking them for use. This class of material we would recommend be ordered once a year and used as soon as possible, after it has been well seasoned, except a small surplus which may be kept at division headquarters for emergency use.

Rails.

New and usable rails should receive great care in unloading to prevent them being bent or broken, and in piling great care should be taken in forming the foundation, which should be composed of old timbers. The foundation would depend upon the size of the pile, but in all cases it should be composed of old timbers strong enough to prevent the rails from becoming surface bent while in the pile. Rails should be piled in tiers and rails of equal lengths should be placed across each tier to form the sub-foundation of the next tier. The number of rails to be placed across the pile would depend upon the length of the rail in the pile and the number of tiers the pile contained, but not more than eight feet space should be left between rails placed across the pile.

Switch Material.

When switches or frogs or guard rails are kept in stock, they should be piled on skids or rail rests; but ordinarily, this kind of material should not be distributed along sections, but a sufficient amount of each kind, of the same pattern and weight as the rail in track, should be kept at division headquarters or in the larger yards, where it may be quickly secured when needed. Each kind and pattern should be separated to avoid confusion in loading it when called for. When railroad crossings, frogs or switches are kept in stock for any length of time, we would recommend they receive a coat of cheap dark paint and the bolts be well oiled to prevent rusting.

Rail and Joint Fastenings.

A small supply of joint fastenings, spikes and bolts and nutlocks should be given each section, which should be kept under cover in the tool house or under the roof where it will not become rusty. At division headquarters or the larger yards where it is necessary to carry a large amount of this material in stock, if no permanent shed is provided, it should be neatly piled up and a temporary roof of old boards should be placed over same. Track bolts should be closely watched and if necessary a little cheap oil be applied to prevent rusting.

Emergency Rails.

Each section should have a sufficient amount of emergency rails on hand to insure it answering the purpose for which it was intended, which will be governed to a large extent by the condition of the rails in track. If the rails are in good, healthy condition, one em-

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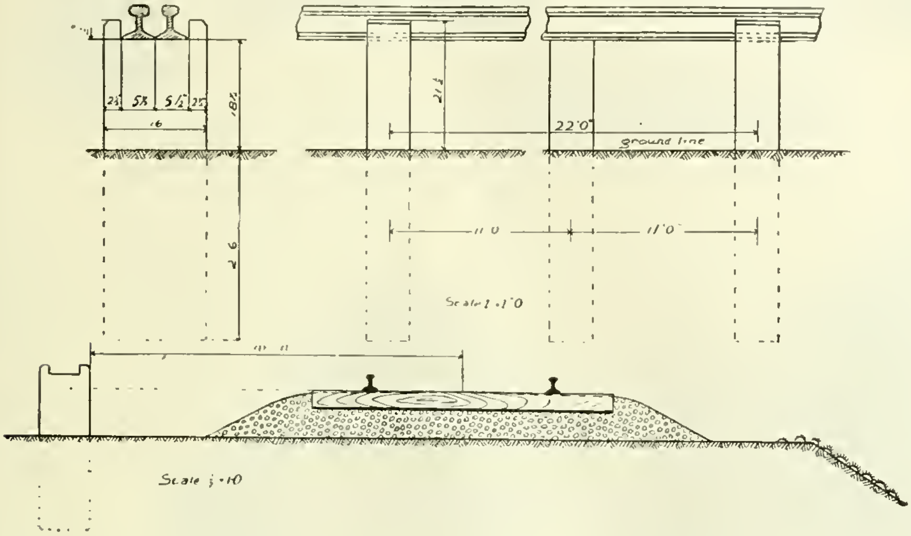
S. A. MEGEATH,

PRESIDENT

ergency rail each two miles will be sufficient, for single track. One pair of emergency angle bars should also be placed with each rail. These rails should be placed on suitable rail rests at or near mile posts.



Rail rests to be made of second hand trestle stringers.

Rail rests as per sketch we would recommend for this purpose.

TOOLS.

Each section should be supplied with a sufficient number of first-class tools, the very best that money can buy, as there is no greater waste of money than for a section crew to work with inferior tools. The number of pieces of each kind would be governed by the number of men in each crew. In addition, each section should have a few extra tools for use in case of emergency, but no more than absolutely necessary to properly care for the work. A monthly inventory of all tools on a section should be rendered by the section foreman. In general, for ordinary repair work, the foreman should make his requisition on the roadmaster for tools and material once every thirty days and the foreman should be furnished with a small surplus of tools and material blank on which he should enter all tools on his section which will not be used for the next thirty days; this blank should be pinned to his monthly requisition and forwarded to the roadmaster at the close of each month. This will enable the roadmaster to transfer tools and material from one section to another and thereby avoid making requisition for supplies which he has on his division available for use. A great deal of money can be saved each month by having a system of this kind or a similar one. All tools as soon as they become dull or out of repair so they will not do first-class work, should immediately be sent to the shops for repairs and they should be put in good shape and returned to the section from whence they came without delay.

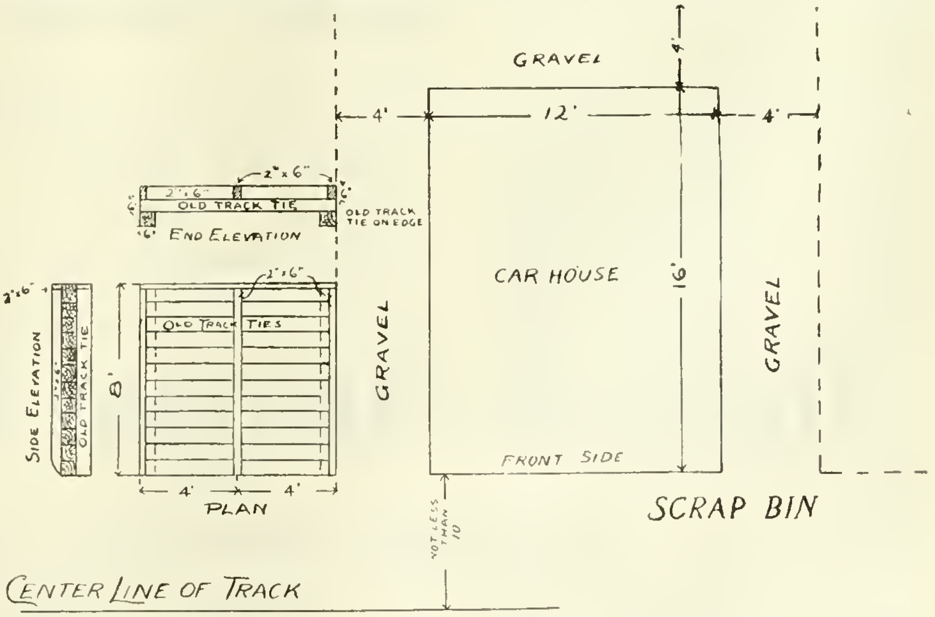
The hand car with a section crew should be the very best that can be obtained. It should be as light as possible but sufficiently strong to carry six or eight men and the necessary outfit of tools. There is no greater waste of money than to have a section crew running a poor hand car; thirty minutes in the morning and thirty minutes in the evening, day after day, on account of a poor hand car, runs into money very fast. The foreman should give his hand car very close attention; he should inspect it every morning before going to work and see that all bolts are securely fastened and that all bearings are clean and well oiled.

Motor cars have been in use on some entire divisions in the past year or so with good results and saving some money. We recommend this feature of the car question be given consideration.

Track tools of all kinds should never be used for any other purpose than that for which they are made. Track shovels should never be permitted to be used in holding up the end of ties while tamping, in pulling ties out of track or putting in new ones; nor should they be used for spacing ties in the track. Claw bars should not be forced under the head of a spike by hammering the heel with a spike maul; sufficient wood from around the head of the spike should be cut with an adze or sharp pick to permit the claw bar to grasp the spike head. Nor should they be used between the tie and rail to lift the rail. This will break the claw in a great many cases, especially in cold weather.

Lanterns should always be kept in first-class condition, ready for an emergency call, except that they should not be left standing or hanging up in the tool house with the cup filled with oil, as this will spoil the oil and rot the wick.

When through with the day's work, all tools should be conveyed to the tool house and locked up for the night. Track gauges and track levels should be tested frequently to ascertain if they are true and correct.



SCRAP.

All scrap should be picked up daily and placed with the other scrap where it can be secured by the scrap crew when required. We would recommend the scrap be picked up once a month. The scrap bin for small scrap should be provided at each section tool house with two compartments, each 4 ft. x 4 ft.; one compartment for small track scrap and the other for car scrap. We would recommend scrap bin as per sketch at every section tool house and all scrap should be picked up daily and placed in it at the close of the day's work. Whenever any old worn-out wooden cattle guards or other worn-out equipment of this kind is burned as rubbish, all the bolts, nuts, washers or other metal should be picked out and conveyed to the scrap bin. When old tie piles are burned, the ashes should be raked over and the old spike stubs, which in many cases are quite plentiful, should be picked up by the track men and saved as scrap. Its value will more than pay for gathering it up and it will educate the men on the matter of economy. Whenever any usable parts of cars or locomotives are picked up, such as draw bars, car doors, brake-shoes or any other usable material, they should be at once sent to the shops where they can again be made use of.

The results obtained in the care of track material and tools, depend in a larger measure than in any other part of their work, upon the interest taken in the matter by the foreman and his men and we believe the surest way to bring about the results desired is to create a sense of the value of property among the men by continually impressing upon them the fact that all tools and material should be cared for just as conscientiously as if they were their own personal property. This impression will go fully as far as the most careful instructions.

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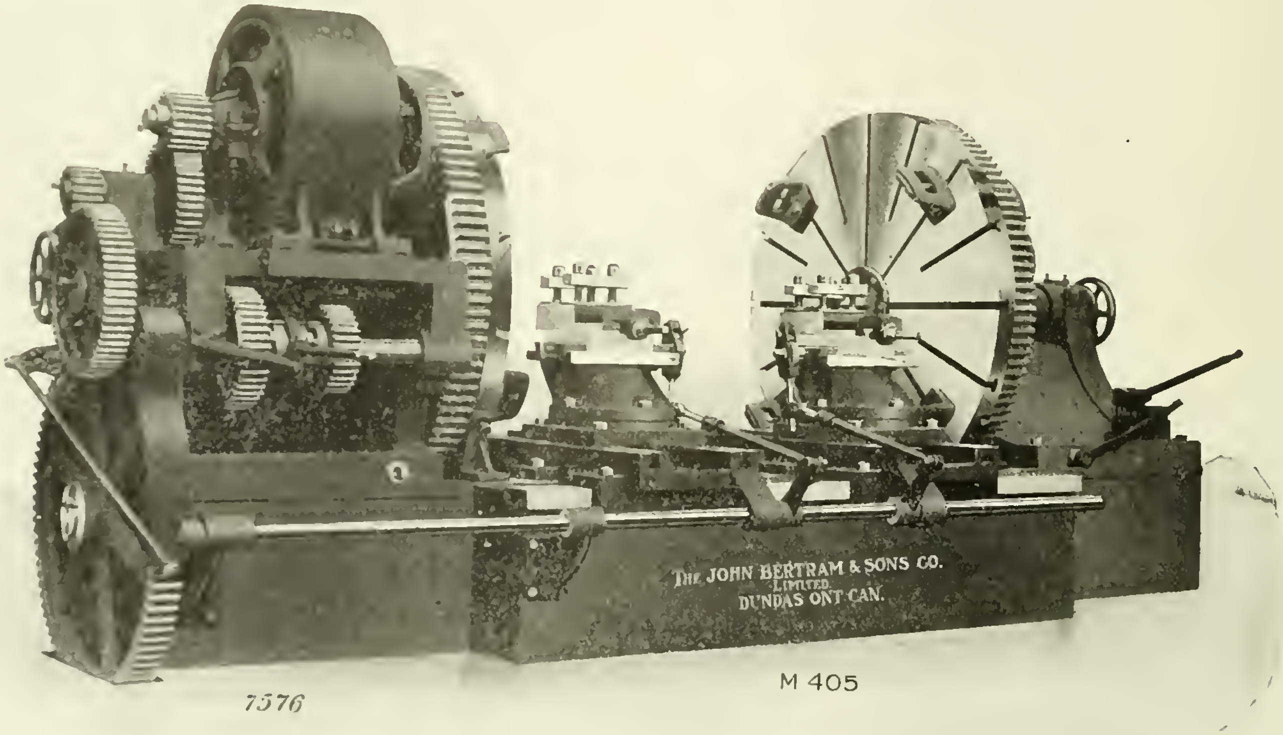
C.P.R. and G.T.R. Shareholders.

The Canadian Pacific Ry. has about 24,000 shareholders, the number of Canadian holders being 2,500. Nearly all the 4% preference stock is held in Great Britain. Of the common stock, holders in Great Britain have approximately 65%, 15% being held on the Continent, while the remaining 20% is divided evenly between Canada and the United States.

Grand Trunk Ry. shares are held by 54,200 persons, against 52,900 a year ago. This puts the G.T.R. second only to the Pennsylvania Rd., which has 64,869 shareholders. The G.T.R. shares are almost exclusively held in England.

LOCOMOTIVE AND CAR SHOP MACHINERY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Telephone Train Dispatching.

By A Dwight Smith,

Train dispatching dates as far back as 1850, when the telegraph was first introduced by Superintendent Minot of the Erie Rd. Previous to that time, what was known as the "Time Interval System" was in use, that is, the ruling train had the right of one hour against an opposing train of the same class. Under this method of operation if one train was late, a great deal of time was lost by all of the other trains on the system. In order to make up part of the time lost, trains were advanced by what is known as the "Flag System." The train-man was sent ahead with a red flag and given about 20 minutes start, and then the train followed, and when the train-man became exhausted he would stop on enough straight track to make it safe, and then be taken aboard and a fresh man started out in the same manner. This method of advancing trains was slow and unsatisfactory and led to the adopting of the telegraph in 1850 by Superintendent Minot of the Erie Rd.

It was a very interesting incident, and is stated to have happened as follows:—Mr. Minot happened to be going over the road on a westbound day express, and under the rules then existing the train was to wait for an eastbound express to pass it at Turners, 47 miles from New York. That train had not arrived, and the westbound train could not proceed until an hour had expired, unless the eastbound train arrived at Turners within a short time. There was a telegraph office at Turners, and Mr. Minot telegraphed to the operator at Goshen, 14 miles further on, and asked him whether the eastbound train had left the station. The reply was that it had not yet arrived at Goshen, showing that it was much behind time. Mr. Minot then telegraphed as follows:—

"To agent and operator Goshen:
"Hold the train for further orders.
"C. Minot, Supt."

He then wrote this order and handed it to the conductor:—

"To conductor and engineer, day express:
"Run to Goshen regardless of opposing train.
"C. Minot, Supt."

The engineer refused to run on the order, and after using his verbal authority without effect, Mr. Minot climbed on to the locomotive and took charge of the train himself. He ran it to Goshen and then from Goshen to Middleton, and from Middleton to Port Jarvis on a similar order, and entered the yard from the east as the other train came into it from the west. An hour or more had been saved by the westbound train and the question of running trains on telegraphic orders was once and for all settled.

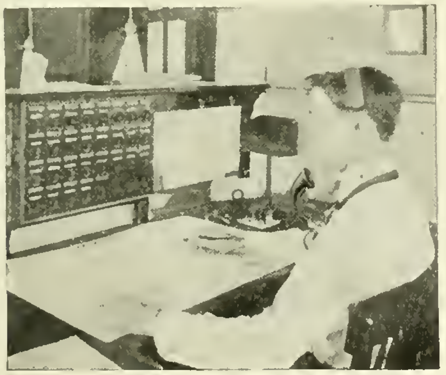

Fig. 1. Dispatcher's Office.

The telephone, being one of the older members of the electric family, the engineer, in his big, brotherly way, rather looks upon it as having settled down to a respectable middle-aged life. He expects nothing startling in the way of a development in telephony (when he actually reaches the expectant stage) rather, a steady growth in its uses and minor improvements in apparatus. It appears, however, that there is still some young blood in this versatile apparatus, and it is branching out in new and unconquered fields.

Telephone train dispatching is the latest commercial development and perhaps the most interesting. It is of very recent growth, practically all within the last three years, and even in this brief period, its strides forward have been wonderful, and the growth of its popularity is equally strong. The telephone has come into the railway field, which has always been the exclusive province of the telegraph, and it is there to stay, because of the numerous advantages it possesses peculiar to itself.

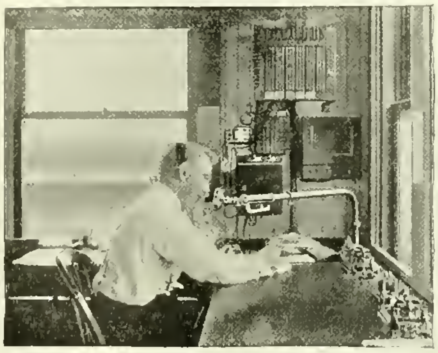

Fig. 2. Way Station Operator using Transmitter Arm.

There is no branch of railroading more carefully and conscientiously maintained at the uniform high level than the dispatcher's force (see fig. 1). On these men and their apparatus hang the lives of the many millions of travellers over the whole of this big country. They are men who must not make mistakes, because an error does not only mean financial loss, but is too frequently paid for by the loss of human lives. It is small wonder, then, that the railway's first requirement for anything connected with the dispatcher is safety—"absolute safety." The telephone has passed this requirement most satisfactorily, as is evidenced by its adoption on over 50,000 miles of railroad in Canada and the United States. Furthermore, the telephone's record stands clean. There is not a single accident that can be laid to its door.

The telephone method of dispatching trains is better than telegraphy, not only because the dispatcher can call a way station with one motion, and can "have the bell ring in the way station almost immediately," but also because it has been proved that the way station operators answer the bell more quickly than they ever did the sounder.

In addition to this, there is a gain in the speed of transmission. A good telegraph operator may be able to send at the rate of 50 words a minute, but in ordinary railway service this figure can quite safely be cut in two, owing to the grade of operators that have to be employed. With the telephone a man can talk at the rate of 100 words a minute, and this difference in time is gained on everything, excepting train orders themselves.

Train orders are very carefully handled. The adoption of the telephone has not changed them. The same order book is used by the dispatcher, and the same form by the way station operator. In giving an order the dispatcher calls the station required, the way station operator then comes in on the line, giving the name of his station. The dispatcher then says "31 order copy 1," or something of this nature, according to the type of order he is putting out. He then proceeds to write his orders in his order book, spelling all names and numbers, and repeating it to the way station operator as he writes. This regulates the speed to such an extent as to enable it to be readily copied by the operator. Now there is a double check on the correctness of this order. As soon as the operator has finished writing his order he repeats it back to the dispatcher as he has written and received it. The dispatcher underlines each word as it is repeated to him. When this is finished, the dispatcher gives the operator the sign, "complete 10.25," as the case may be.

It is very interesting to watch the change which comes in the personal feelings between the dispatcher and the way station operator. Because he can talk by word of mouth, the operator becomes more a part of the system. A cordial spirit of co-operation creeps in, discipline is improved, and so is the service. There is no more fighting for the use of the train wire. With the telephone the dispatcher has complete control of the wire, and yet more important, when the dispatcher is calling a way station he positively knows that he has rung the bell in that station. By means of an ingenious arrangement of the bell circuit, he can tell in every case whether or not the bell of the called station has actually rung. This is called the "answer back" and takes the form of a distinctive buzz in the dispatcher's head receiver. It can be produced only by the ringing of the bell. Now, the way station operator (fig. 2), knowing that the dispatcher has heard the bell ring in his station, is more liable to answer the call quickly than if he were listening to his call coming in over a Morse sounder.

Many way stations in this country have men who have to act in the ca-

Scotland, Sept. 15, 1843.

pacity of operators and agents. This means that they must necessarily leave their instruments to attend to the selling of tickets or handling of freight in a building which is very often some distance away. With a bell that can be heard several hundred feet, the station agent can be performing his duties out in the freight shed or away from the building and still be within sound of his selector bell. In order that the full advantage may be obtained from this feature, the dispatcher can control the length of the ring, in other words, if he does not get an immediate answer, he can ring the way station steadily until he does receive an answer, or as long as he wishes.

The use of the portable train set (fig. 3) is perhaps the most picturesque, and appeals forcibly to railway men. Substantial economies can be affected. Officials, inspectors, train crews, track, bridge and wrecking crews can have immediate access to the dispatcher. The portable set is used in the same way as any regular telephone. Every road which is dispatching by telephone is also employing portable telephone sets. The C.P.R. has adopted it to such an extent that all the vans and baggage cars now being built are wired and equipped with portable sets, regardless of what divi-

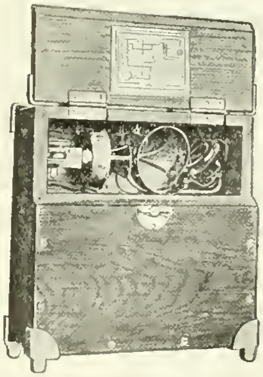

Fig. 3. Portable Telephone Set Open.

ATLANTIC STEAM SHOVELS

CLASSY 45-16-2½ ATLANTIC SHOVEL.

ECONOMY IN OPERATION

Reduction in friction and boiler losses, with corresponding increase in pull at dipper, is the reason why the Atlantic shovel digs more at less cost than shovels of the chain type.

Wire rope hoist, found only in the Atlantic, exerts a direct pull on the dipper and substitutes friction of a rope with but one large sheave for that of a chain with from four to six additional small sheaves. The less power lost in the machine itself, the more you have left for digging.

Further economy in operation is secured by using a large boiler of the locomotive type, in which more of the heat is utilized and less is lost up the stack. This is possible only because of the removal of the hoisting engines from their usual position on the car body, to the boom.

The placing of the main hoisting engines at the foot of the boom reduces the power necessary for swinging the boom and removes the twist upon the car body when working on one side. With this construction the turntable centre and boom foot constitute the engine frame. One casting takes the place of four or more in the usual construction, reducing the total weight of the shovel, and the weight on the front trucks.

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MONTREAL LOCOMOTIVE WORKS, LTD.

OTTAWA BANK BUILDING, MONTREAL, CANADA

sion they are destined for. The use of this apparatus is becoming more popular every day. It saves minutes and valuable time in case of emergency, and minutes on a railroad generally represent thousands of dollars. It has been found to be of estimable service in every day running of the road. If an engine blows out a stuffing-box, breaks an eccentric or valve gear, it is no longer necessary to keep a dispatcher fuming over what might have happened to that train and trying to patch up his schedules; now he can be told this on the spot by the conductor of the train (fig. 4). This has been very beneficial in many instances; because of our rugged winter climate, trains stalled in snow drifts can advise the dispatcher of the fact. This saves many a long wait and many a long tramp for the brakeman to the nearest station.

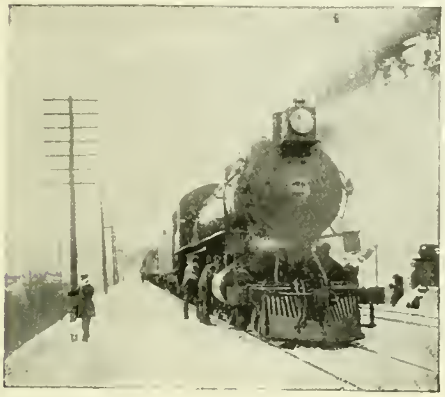


Fig. 4. Portable Train Set in Use by Conductor.

Portable train sets are connected to the line by what is known as a line pole (fig. 5). This pole is not unlike a fishing pole, and is generally in two sections for compactness sake. The top section is equipped with two contact clips, which give a firm contact, and in conjunction it has a flexible line cord by which connection is made. This cord is generally about 100 ft. long, and enables the train crew in most cases, if pole line is not far distant from the track, to speak from the inside of the van.

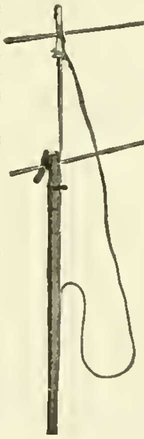


Fig. 5. Top Section Linepole Making Contact.

Another advantage peculiar to the telephone is the facility it gives for keeping trains on a division in close touch with the dispatcher by means of siding sets (fig. 6). The use of portable sets has already been mentioned. Siding sets perform the same function, only instead of being carried on trains they are permanently located at intervals along the railway. These sets can be placed in booths or pole shelters built on the line. In many cases a specially designed set is used and mounted direct on the poles. This latter set is an iron, weather-proof, rust-proof set (fig. 7), and is equipped with a standard switch lock, so that only train crews, or persons having authority, can get access to the train wire. Typical points where these sets show to advantage are blind sidings or loading points, water tanks and draw bridges.

Thus, in many ways the telephone has improved train dispatching; in small ways, perhaps, considering each phase by itself; in the aggregate, in a large ,broad, modern way. It is introducing economies, simplifying the work and making for better service in every way.

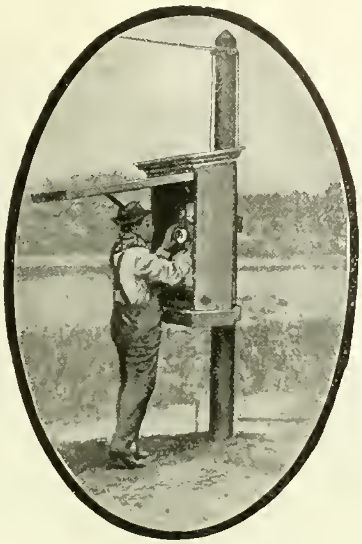


Fig. 6. Trainman Using Siding Set.

[The writer of the foregoing article (the first of a series) is Railway Sales Engineer of the Northern Electric and Manufacturing Co., Ltd., Montreal.—Editor.]

◆

Transportation Men's Birthdays in September.

Many happy returns of the day to:—

G. W. Alexander, Local Treasurer, G.T.R. Western Lines, Detroit, Mich., born at Lightcliff, Yorks, Eng., Sept. 10, 1859.

H. Bailey, Bridge and Building Master, District 1, Lake Superior Division, C.P.R., Sudbury, Ont., born at Huntsville, Ont., Sept. 2, 1879.

W. B. Bamford, Division Freight Agent, Atlantic Division, C.P.R., St. John, N.B., born at Belleville, Ont., Sept. 10, 1863.

W. D. Barclay, General Manager, Canadian Northern Quebec Ry., Quebec and Lake St. John Ry., Halifax and Southwestern Ry., and Inverness Ry. and Coal Co., Quebec, Que., born at Campbellton, N.B., Sept. 23, 1852.

G. T. Bell, Assistant Passenger Traffic Manager, G.T.R. and G.T.P.R., Montreal, born there, Sept. 7, 1861.

W. H. Biggar, K.C., General Counsel, G.T.R. and G.T.P.R., Montreal, born at the Carrying Place, near Trenton, Ont., Sept. 19, 1852.

E. R. Bremner, ex-Division Freight Agent, G.T.R., Ottawa Division, Ottawa, born at Toronto, Sept. 9, 1875.

M. H. Brown, Division Freight Agent, Ontario Division, C.P.R., Toronto, born at Victoria Square, Ont., Sept. 2, 1866.

W. G. Brownlee, General Transportation Manager, G.T.R., Montreal, born at Lawrenceville, Ill., Sept. 9, 1858.

W. B. Bulling, Assistant Freight Traffic Manager, C.P.R. Eastern Lines, Montreal, born there, Sept. 16, 1858.

C. F. Burns, Auditor of Disburscments, Intercolonial Ry., Moncton, N.B., born at Clements Port, N.S., Sept. 10, 1854.

A. D. Cartwright, Secretary, Board of Railway Commissioners, Ottawa, born at Kingston, Ont., Sept. 20, 1864.

A. W. Davis, Locomotive Foreman, G.T.R., Stratford. Ont., born at Sittingbourne, Kent, Eng., Sept. 5, 1864.

A. S. Dawson, Chief Engineer, Irrigation Department, C.P.R., Calgary, Alta., born at Pictou, N.S., Sept. 6, 1871.

W. H. Estano, Traffic Auditor, Intercolonial Ry., Moncton, N.B., born at Halifax, N.S., Sept. 29, 1874.

C. B. Foster, General Passenger Agent, C.P.R. Western Lines, Revelstoke and east, Winnipeg, born at Kingston, N.B., Sept. 30, 1871.

J. P. Ferguson, representing Galena Signal Oil Co., Ottawa, Ont., born at Drummondville, Que., Sept. 12, 1856.

D. W. Hatch, Travelling Agent, Atchison, Topeka and Santa Fe Ry., Montreal, born at Bedford, Que., Sept. 1, 1841.

Jules Hone, Jr., railway and steamship ticket agent, Quebec, Que., born at Montreal, Sept. 8, 1874.

J. E. Hutcheson, Superintendent and Purchasing Agent, Ottawa Electric Ry., Ottawa, Ont., born at Brockville, Ont., Sept. 15, 1858.

W. H. Kelson, ex-General Storekeeper, C.P.R., Montreal, born at Bath, Eng., Sept. 5, 1850.

C. B. King, Manager, London St. Ry., London, Ont., born at Galena, Ind., Sept. 12, 1871.

V. Kistler, District Freight and Passenger Agent, Great Northern Ry., Grand Forks, B.C., born at Clyde, Ohio, Sept. 4, 1881.

R. E. Larmour, Division Freight Agent, British Columbia Division, C.P.R., Vancouver, born at Brantford, Ont., Sept. 26, 1868.

H. D. Lumsden, C.E., ex-Chief Engineer, National Transcontinental Ry., Ottawa, born at Belhaire, Scotland, Sept. 7, 1844.

J. Bruce Macdonald, Director, Niagara Navigation Co., Toronto, born at Glengarry, Ont., Sept. 19, 1850.

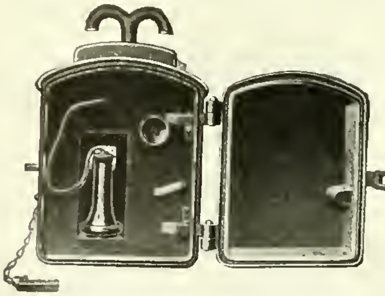


Fig. 7. Metal Siding Set Open.

F. J. Mahon, Superintendent Telegraphs, C.P.R. Atlantic Division, St. John, N.B., born at Montreal. Sept. 18, 1865.

J. F. Mundle, City Freight Agent, C.P.R., Montreal, born at Prescott, Ont., Sept. 20, 1857.

B. S. Murray, Route Agent, Canadian Express Co., London, Ont., born at Glenwood, N.Y., Sept. 17, 1856.

J. Oborne, General Superintendent, Ontario Division, C.P.R., Toronto, born at Montreal, Sept. 19, 1861.

S. S. Oliver, A.M. Can. Soc. C.E., formerly of the Engineering Dept., Canadian Northern Quebec Ry., and Quebec and Lake St. John Ry., now practising as a civil engineer, Quebec, Que., born there, Sept. 9, 1858.

J. Paul, General Freight Agent, Niagara, St. Catharines and Toronto Ry., St. Catharines, Ont., born in Euphrasia tp., Grey Co., Ont., Sept. 13, 1858.

C. S. Richardson, District Freight Agent, C.P.R., Buffalo, N.Y., born at New York City, Sept. 26, 1870.

W. D. Robb, Superintendent of Motive Power, G.T.R., Montreal, born at Longueuil, Que., Sept. 21, 1857.

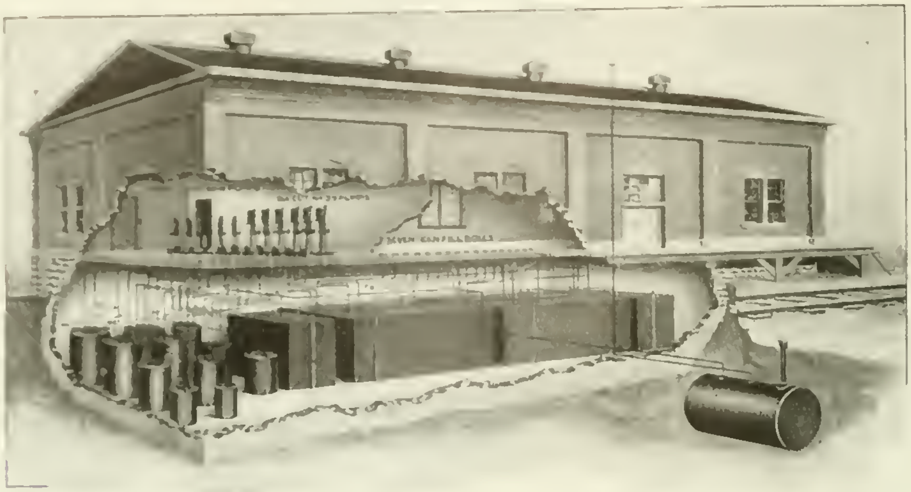
W. H. Rosevear, ex-General Car Accountant, G.T.R., Montreal, born at Wadebridge, Cornwall, Eng., Sept. 26, 1837.

F. W. Sterling, Travelling Freight Agent, C.P.R., Vancouver, B.C., born at Thornbury, Ont., Sept. 14, 1881.

E. W. Taylor, General Freight Agent, Reid Newfoundland Co., St. John's, Nfld., born at Carbonear, Nfld., Sept. 8, 1870.

Sir William Whyte, Vice President, C.P.R., Winnipeg, born at Charleston, $397,130, against $413,334 for same period 1910.

H. A. Young, Traffic Manager, Canadian Lake Line, Toronto, born at Brooklyn, N.Y., Sept. 1, 1864.



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Schemes of Erection Proposed for the Quebec Bridge.

The design of a structure of exceptional size is likely to depend more upon erection questions than on problems of proportioning the parts with regard to their functions in the completed structure. This is pre-eminently true for a bridge like that to be built over the St. Lawrence River at Quebec. Accordingly, the recent competition of designs and bids (of which the principal designs were illustrated in the Railway and Marine World for May), was in part a competition of erection methods. The outlines of the designs do not therefore suffice to state the essentials of the competing plans. We take pleasure in supplementing them now by a summary of the erection projects of the more important bids.

The plans prepared by the Board of Engineers allowed of six modifications of its general design, the differences being in the length of anchor arm, design of suspended span, and manner of erection. Alternative designs were also permitted. There were four bidders (see Railway and Marine World, May), and some of them submitting proposals for different schemes of erection, there were 35 distinct bids.

ST. LAWRENCE BRIDGE COMPANY.

The St. Lawrence Bridge Co., in addition to tendering on each of the Board's designs, submitted seven different alternate designs, as follows:—

Design A.—This corresponds to the Board's design with respect to panel lengths, height over main pier, profile of bottom chords, and floor system. It has an anchor arm of twelve panels and a suspended span designed for floating erection, corresponding to the Board's design V. The Board's design has been departed from in respect to the type of web system, the substitution of built-up tension riveted members for eyebars, and as regards the outline of the top chord of the cantilever arm and the suspended span. There are also various changes in the design of many of the members.

Design B is the same as design A, with the exception that carbon steel instead of nickel-steel is used for the vertical posts in the cantilever arm, three panels away from the centre pier, as well as for all members in the anchor arm. The details of members and type of web system remain unchanged.

Design C is identical with design A, except that nickel-steel eyebars are used throughout, instead of built-up riveted tension members.

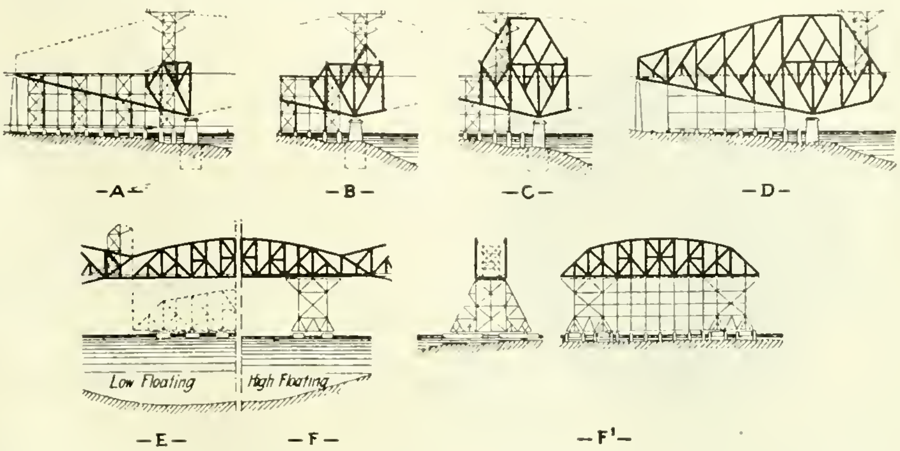


Fig. 2. Quebec Bridge. Scheme of erection, St. Lawrence Bridge Co., Board's Design.

Design M retains the single intersection of the Board's design, and follows very closely the general features of the design submitted by Maschinenfabrik Augsburg-Nuernberg. The anchor and cantilever arms are each 522 ft. long with a suspended span of 714 ft. In this design nickel-steel is used throughout. The details of the main members have been somewhat changed from those prepared by the Board. Pin bearings are employed throughout for all abutting joints of compression members.

Design N is identical in outline with design M, the only difference being that carbon steel is substituted for nickel-steel in a number of the members. This change was made with the idea of effecting a slight economy in design.

Design X, which was accepted, is similar in outline and general details to design A, but is intended to accommodate railway traffic only, the tramway and highway roadways being omitted. A 4-ft. walk is allowed for on each side for the use of inspectors, etc. Carbon steel is used for the anchor arm, members over the main piers, and for the vertical posts of the cantilever arm for three panels from the pier. Carbon steel is also used for the centre posts of the suspended span.

Design Y corresponds to design X as design C compares with design A. Here railway traffic only is provided for and nickel-steel eyebars are used instead of riveted built-up tension members.

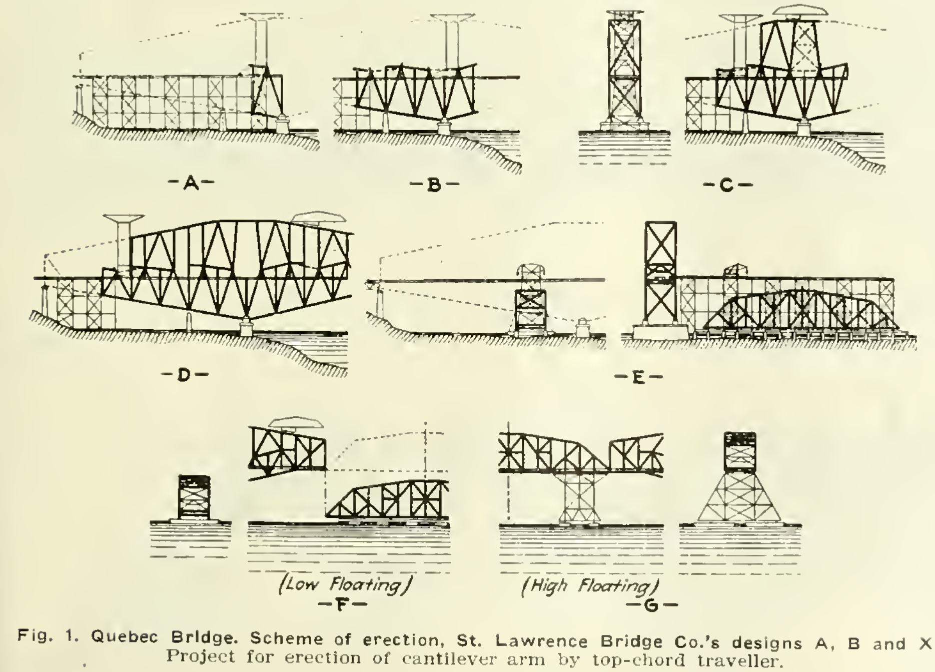


Fig. 1. Quebec Bridge. Scheme of erection, St. Lawrence Bridge Co.'s designs A, B and X. Project for erection of cantilever arm by top-chord traveller.

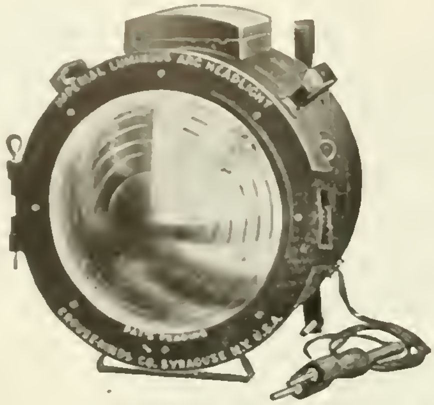
Scheme of Erection.—Several different schemes of erection are proposed, for the suspended span as well as the cantilevers. These schemes are in the nature of studies, the final choice being subject to the design upon which the contract might be awarded, and to approval by the Board. They include the following elements:—

(a) Erection of the anchor arm on steel falsework before starting the erection of the cantilever arm. In this scheme the anchor arm will be assembled and riveted up complete before moving ahead. An inside traveler is used and is operated from the floor level (see fig. 1). This scheme can be applied to both the Board's and the contractor's designs.

(b) Erection of the anchor arm and the cantilever arm concurrently. The first step in the erection is the construction of a high tower on piers between panel points AL12 and AL14. This tower has overhanging arms from which the trusses on either side can be reached. From this tower the anchor arm is erected up to AL10, under which point a temporary masonry pier is built, which acts both as a supporting pier and an anchorage (see fig. 2). After the floor has been put in place the tower is taken apart at the floor level, the upper part being used as an inside traveler, with which the remainder of the anchor arm is erected. The erection of the anchor arm is always sufficiently in advance of the cantilever arm to ensure that the centre of gravity is always between AL10 and the main pier. A falsework trestle for the handling of material connects the shore with the work under construction. This scheme of erection can apply either to the Board's design or the alternative designs.

(c) Erection of the cantilever arm by inside traveler, similar to that used for the erection of the anchor arm. In the case of erection scheme (a) the traveler used for the anchor arm is moved ahead on the cantilever arm and the erection proceeds, panel by panel, until this part of the bridge is entirely completed. In the case of erection scheme (b) the traveler for the cantilever arm is erected by the traveler used for the erection of the anchor arm when the erection of this arm has proceeded past panel point AL10, thus ensuring stability for the further progress of the work. From this point and to the end of the cantilever arm, the erection of schemes (b) and (c) are exactly similar.

(d) Erection of the cantilever arm with a top-chord traveler. This traveler is erected by the inside traveler of the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anchor arm. This scheme of erection is intended to apply to the Board's design only (see fig. 2).

(e) Erection of the suspended span by cantilevering. This erection is done with a small top traveler in practically the same manner as is proposed by the other bidders. This scheme of erection applies only to the Board's designs I and IV.

(f) Suspended span floated in on high falsework. The falsework for this scheme of erection is constructed on concrete piers and is located on the shore directly at the bridge site. The suspended span is laid down at right angles to the bridge proper and one end is hard up against the anchor arm at almost a point corresponding to AL10. A traveling crane takes the ma- as in the preceding, except that the span is erected directly on the piers. For floating, six pontoons are required, terial, both for the falsework and the suspended span, from the cars on the bridge and carries it to whatever point it is required. Eight pontoons 120 ft. by 36 ft. by 12 ft. deep are used. At high tide the falsework is lifted off the piers and towed into position.

(g) Suspended span floated in on low falsework. The erection of the suspended span in this case is carried out each 238 ft. by 38 ft. by 10 ft. deep. After being towed into place the suspended span is lifted into place by means of hydraulic jacks and wedges operated by power. Both schemes (f) and (g) can be employed for either the Board's or the contractor's designs.

Adopted Plan.—As already stated, design X is the one which was finally approved and contracted for. It provides for railway traffic only. The top chord and other tension members will be built-up instead of eyebar members. The channel span is 1,800 ft.

The anchor arm will probably be erected on falsework, and the cantilever arms by inside traveler. The suspended span will probably be built on high falsework and floated into place.

According to the specifications the Government will stop navigation on the river during the progress of floating in the suspended span and will furnish free of charge the motive power required for towing the span into position.—Engineering News.

(To be continued.)

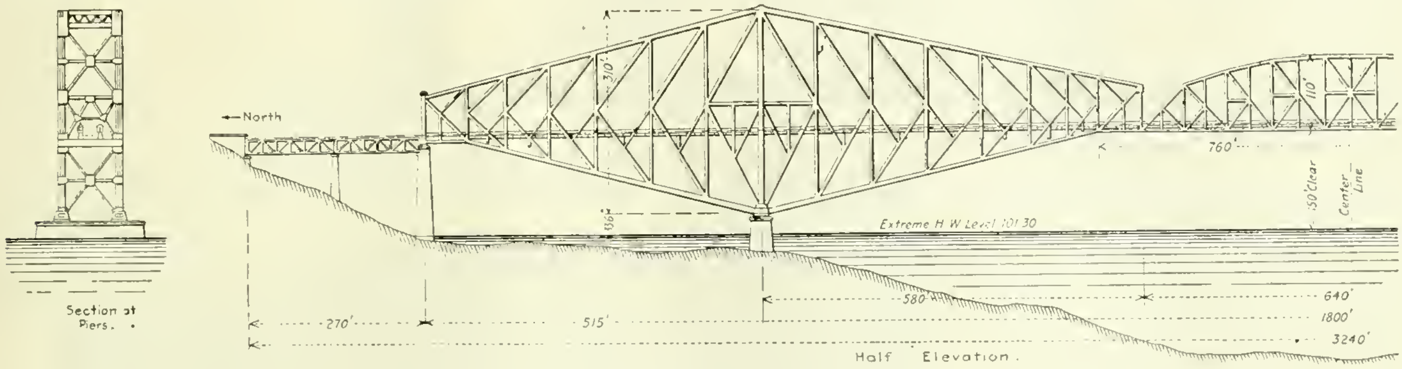

Fig. 3. Quebec Bridge. Accepted Design X, St. Lawrence Bridge Co.

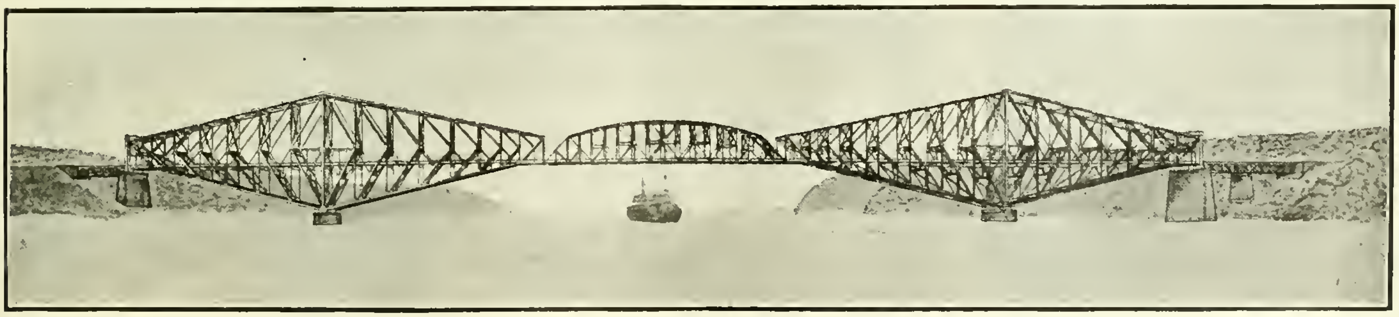

Fig. 4. Quebec Bridge. Perspective View of Accepted Design.

Weighing Carload Traffic and Allowances from Track Scale Weights.

The question of special freight tariffs for weighing carload traffic and allowances from track scale weights was argued recently before the Board of Railway Commissioners, and judgment was subsequently given by the Chief Commissioner, Commissioners S. J. McLean and J. Mills assenting. The Chief Commissioner, after reviewing the special tariffs which have been in force regarding the weighing of carload traffic, said: "The railway companies filed new tar- of the same until a full presentation of the case could be made. . . . It will be seen by a comparison of the proposed The Board postponed the effective dates iffs, made effective May 1, as to traffic moving between points in Canada, and May 15, as to traffic from or to points in Canada to or from points in the United States. Against these latter tariffs many complaints came to the Board from various parts of the country, and the shippers requested a hearing before they were permitted to go into effect. new tariff with the old one that the proposal of the carriers now is to do away with allowances for blocking, dunnage and temporary racks used in connection with the bulk of the freight shipments in cars covered by these tariffs. This was strenuously objected to by the shippers. It seems to have been thought fair by the carriers in arranging their tariffs originally to make reasonable allowances from track scale weights to rectify any variation in the tare of cars, or increased weight thereof by reason of the absorption of moisture and the accumulation of snow, ice, and the like. These allowances have been in existence for many years, and the business of shippers has been adjusted in accordance therewith, and any change in these conditions naturally meets with objection. The point in the meantime, however, for consideration is whether it is fair that the carriers should modify these regulations in whole or in part, and whether the working thereof in the past has operated reasonably, or whether under existing conditions undue burdens are placed upon carriers by reason of these provisions."

The Chief Commissioner then reviewed the arguments and the evidence, as to the old regulations, and the proposed new ones, as well as the special conditions in force in British Columbia, notice of cancellation of which to date from Aug. 1 had been given by the C.P.R., and proceeded: "It seems to the Board that before it attempts, upon the material before it, to express an opinion as to what practice should be established and what allowance made, that the shippers and carriers should have a further conference in connection with these matters. . . . . The Board is of the opinion that these matters should all be fully exhausted between the parties interested, when, if the matters cannot be adjusted, the Board will, either upon the material now before it, or upon further hearing and evidence, dispose of all matters that the parties are unable to adjust. In expressing this opinion the Board has no hesitation in saying that, in its opinion, the track scale allowances made by the railway companies in the past have, so far as the evidence discloses, been upon a liberal scale, and without attempting to dispose finally of the matter, the Board will expect that the shippers will be prepared to deal liberally and fairly with the railway companies in any reasonable attempt made by the latter to put these track-scale allowances upon a fairer basis. Some arrangement must be made, however, with reference to allowances for snow and ice, other than suggested by the companies."

The same course is to be pursued in reference to the proposed change in the British Columbia tariffs, as radical changes of this sort should not be made, even if proper, without a longer notice to shippers. An order will be made postponing the going into operation of these proposed tariffs until after the conference between the companies and the shippers.

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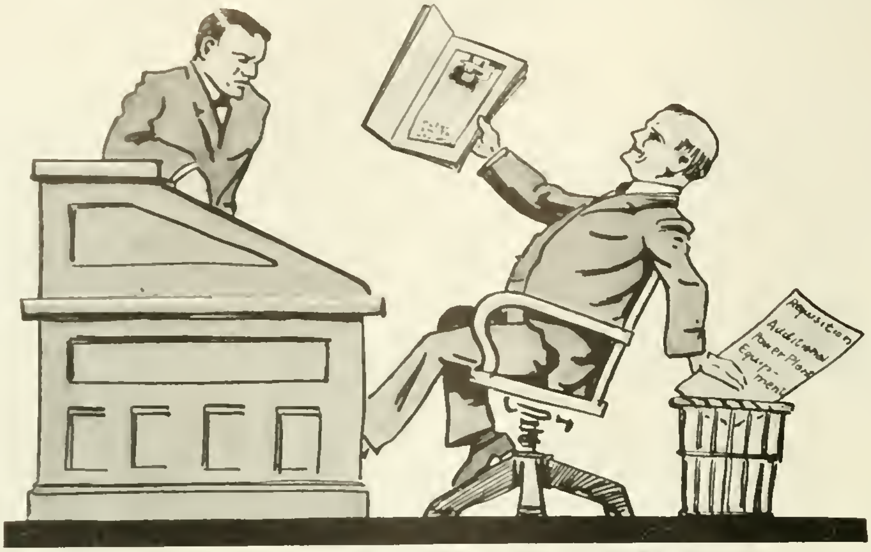
The International Railway Master Blacksmiths' Association held its annual meetings at Toledo, O., Aug. 15-17.



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No overheated seats possible.

You will appreciate the enormous saving if you will ask us to send you a reprint of an article on electrical heaters which appeared in Electrical Railway Journal. last December.

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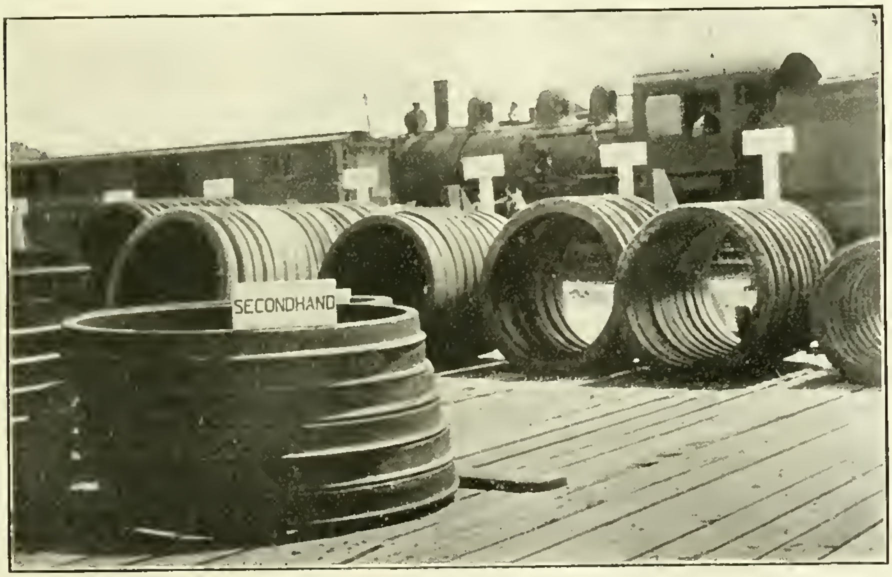
Locomotive Tire Storage at C.P.R. West Toronto Shops.

Particularly where ground space is at a premium, is it necessary to have a systematic yard arrangement. It occurred to A. Dixon, General Foreman of the C.P.R. West Toronto shops, that with but little labor, the yard arrangement might be considerably improved. A sample of what was accomplished in one line is shown in the accompanying illustration.

Previous to this yard systematizing, locomotive driving-wheel tires were lying around the yards in nondescript piles, just as left by the laborers, arranged in each case without any regard to future convenience. This careless arrangement, besides being inconvenient to the workmen looking for new tires, required about twice as much space as the method devised.

A lot of old car sills were obtained from the car shops. These car sills, being of no value, entailed no expense in constructing the storage racks. The car sills, laid on sleepers, formed an excellent flooring. At the other end, as indicated in the illustration, posts were sunk, with cross-members, against which the tires were placed. Over each pile index boards were located, with tire sizes, making it convenient for the mechanic to select the required tire, and at the same time facilitating matters when taking inventory. The appearance of the yard is greatly enhanced by this arrangement.



Locomotive Tire Storage at C.P.R. West Toronto Shops.

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Official Inspection of the G. T. R. and G.T.P.R.

A. W. Smithers, Chairman of the G.T.R. board of directors, London, Eng., accompanied by members of the staff of the English office, some shareholders, and a number of ladies, arrived in Portland, Me., via New York, Aug. 4, where they were met by C. M. Hays, President, and other members of the Montreal staff. After spending a couple of days at Mr. Hays' summer home at Cushing's Island, the party began an official inspection of the line, Aug. 7, reaching Montreal Aug. 8. In an interview Mr. Smithers said, in reference to the developments in the New England States, there was no thought of making Boston an ocean port for the system, and Providence was altogether out of the question as far as its ocean shipping facilities or possibilities were concerned. When the G.T. Pacific Ry. was finished Canadian seaports would be built up in accordance with the company's agreement with the Government. Portland would not be affected by the development of Canadian ports by the company. So far as the G.T. Pacific Ry. was concerned, satisfactory progress had been made during the past year, and the end of the great work of construction was now in sight. Labor conditions were now more satisfactory than they had been in the past, and there was every prospect that the line would be completed and have become a great factor in the development of the Canadian West within two or three years.

The party started from Montreal on a special train of five private cars, Aug. 8, visiting Ottawa, and proceeding via North Bay, over the Temiskaming and Northern Ontario Ry. to Cochrane, where the National Transcontinental Ry. crosses. Returning from the north the party visited important points on the G.T.R. in Ontario, and sailed from Sarnia on the Northern Navigation Co.'s s.s. Hamonic to Port Arthur, accompanied by Jas. Playfair, President, Northern Navigation Co., and Inland Lines, Ltd., and H. H. Gildersleeve, Manager, Northern Navigation Co. From thence the special train went on to Winnipeg, and the party set out on a trip over the G.T. Pacific Ry. as far as it has been completed west of Edmonton, Alta. The trip will be extended to Vancouver and Prince Rupert, B.C., and it is expected that the party will reach Montreal on the return journey Sept. 25.

The party comprises, in addition to A. W. Smithers, Chairman of the Board, and C. M. Hays, President, G.T.R. and G.T. Pacific Ry.: Mrs. Hays, F. and Mrs. Swanston, London, Eng.; Miss Gladys Jackson, London, Eng.; W. E. Davis, Passenger Traffic Manager; A. Butze, General Purchasing Agent; H. Deer, Assistant Secretary, London, Eng.; John Pullen, Assistant Freight Traffic Manager; D. E. Galloway, private secretary to the President; V. M. Payne, assistant secretary to the President.

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Superheater Performance on Canadian Northern Railway.—An interesting superheater locomotive performance is reported by the C.N.R. locomotive 266, built by the Montreal Locomotive Works, and equipped with the Schmidt superheater, which ran 378 miles from Edmonton to North Battleford and back to Vermilion, with six or seven coaches on a total coal consumption of about eight tons, this efficiency being largely due to the superheater.

Telephone Train Dispatching on the Grand Trunk Railway.

By W. W. Ashald, Superintendent Telegraphs, Grand Trunk Railway.

The G.T.R. has the following sections of its line equipped with telephone train dispatching circuits:—One circuit between North Parkdale Jct. and Burlington Jct., via Allandale, a distance of 145 miles, the dispatchers located at Allandale, Ont., There are 22 stations on this line where regular operators are on duty. Another circuit between Allandale and Nipissing Jct., 165 miles, with 21 stations where regular operators are on duty. At sidings where there are no regular agents, emergency telephones are located in booths where trainmen can get in immediate communication with the train dispatcher and, if necessary, procure their own train orders.

These circuits have been in operation for 18 months and have proven the superiority of the telephone over the telegraph as a medium for dispatching trains. The management is so well satisfied with the results that it is the intention to equip the entire system with telephone train dispatching circuits in the near future.

The circuits are metallic and constructed of no. 9 gauge hard drawn copper wire weighing 210 lbs. per mile for each wire, or 420 lbs. per mile metallic.

Each station is equipped with a selector device and a 4-inch gong (bell), a head-band receiver, and a swinging arm transmitter which permits the equipment to be pushed to one side out of the way when not in use. The dispatchers' office equipment consists of a master selector, a separate calling key for each office, a head-band receiver and chest transmitter. The maximum time required to call any office is eight seconds. The system being selective, only the office desired is affected by the calling. The train dispatcher is constantly on the line and no other office can call except to speak direct to the dispatcher. When an office is called the operator immediately puts on his head-band receiver and answers by speaking the name of his station. The dispatcher receives an "answer back" signal the instant the station bell starts ringing and knows beyond the question of doubt that the station bell has responded to his call.

Through the medium of the telephone the train dispatcher is in direct communication with trainmen at all times and thus obtains information required by personal conversation, instead of through the medium of a third party, as is necessary by telegraph.

The telephone has come into general use on the larger railway systems, both in Canada and in the United States, for train dispatching purposes, within the past three years, and is being extended at the rate of about 1,500 miles each year.

The use of the telephone does not displace the telegraph operator, as the telegraph is still used for transmission of messages, reports, etc., as formerly, and the telegraph operator only uses the telephone for his train order work.

The cost of installing a telephone circuit exceeds the telegraph by about 8 per cent., but the saving in time, the improvement of traffic and the absolute safety of the system, appeals to railway managers, and they do not therefore stop to consider the cost of installation.

◆

The Western Transfer Co., of which T. Long is President and General Manager, has acquired the Ripley Transfer, and the Gibbons Transfer Co., at Lethbridge, Alta., and has entered into a contract with the C.P.R. and wholesale business houses in the city to handle the cartage business.

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Rates on Grain and Grain Products to Maritime Provinces.

The Board of Railway Commissioners recently dismissed the application of the Dominion Millers' Association for an order suspending the operation of the C.P.R. tariff, C.R.C. no. E 2040, and the G.T.R. tariff, C.R.C. no. E 2285, applying on grain and grain products from Ontario to Eastern Quebec and the Maritime Provinces, which were to have become effective May 1, until the companies had justified the advanced rates in the tariffs to the Board's satisfaction.

Commissioner McLean gave the following judgment:—

The tariffs in question, which are the special and competitive joint freight tariffs on grain and grain products, in carloads, to points in the Maritime Provinces, were issued to be effective May 1, 1911. Before the effective date, and on complaint of the Dominion Millers' Association that these tariffs increased existing rates, the date for going into force was postponed, in order that after the hearing which took place in Toronto on April 25, the Board might have an opportunity of examining into the details of the tariffs.

The complaint of Mr. Watts, Secretary of the Dominion Millers' Association, who represented that Association at the hearing, was, in brief, one regarding the increase of existing rates. He also stated that Fort William, and not Chicago, should be the key to the situation in connection with these tariffs. The effect of the Chicago rate situation in this regard is considered later. As to this phase of the complaint, however, I think that the attention of the Board should be limited to the question of the increases in rates. If a different basing system for the tariffs in question is to be made use of, this must be developed as a separate matter.

At the hearing, the railways stated that in the tariffs in question were included three kinds of rates which might be denominated as: (a) special joint rates or "normal" rates; (b), competitive joint rates; (c), competitive joint "furtherance" rates.

By classification, grain and grain products in carloads have an 8th class rating. The C.P.R. has a class tariff to New Brunswick points on its system; the C.P.R. and G.T.R. have also joint class tariffs to points on the Intercolonial and its connections. The so-called "normal" rates are lower than these, and they cover the bulk of the rail points in the Maritime Provinces, either direct, or by addition of arbitraries of connecting railways.

The present basis of the "normal" rates develops from the arrangement arrived at between the railways and the Dominion Millers' Association somewhere about the beginning of 1905, the exact date being uncertain. It had been alleged that no equitable relation existed between the rates of the millers in the Canadian Northwest and those of the millers in Ontario; and that both of these were in strong competition in grain products in the Maritime Provinces. It was, therefore, decided that in the shipments east of Montreal on grain products from Ontario points, the same arbitraries should be applied from Montreal as are applied by the C.P.R. in arriving at through rates from Fort William. Considering that Toronto was entitled to a differential of 5c. below Fort William, a basing rate of 10c. was established from Toronto to Montreal; certain other points were included in the Toronto group, and west of these, arbitraries were added. To points east of Montreal, arbitraries were also added. It will thus be seen that in effect the "normal" rates are based on Fort William.

From the consideration of the circumstances attaching to the development of this arrangement, as well as from the specific terms of the agreement which recites inter alia, "Whereas heretofore there has been no equitable relation between the rates, those from Ontario being based on one set of arbitraries over Montreal, while those of the Northwest have been on an entirely different basis," it appears that this matter was concerned entirely with the basis of the so-called "normal" rates. The basis of the competitive joint rates and of the "furtherance" rates are to be found in an entirely different set of facts and conditions.

The more important "normal" rates have been checked by the Board's Chief Traffic Officer, and he finds that these are in accordance with the agreement which has been set out. The increases which have taken place fall within the groups which have been spoken of as competitive joint rates and "furtherance" rates, and it was frankly stated by the railways in the course of the hearing that the increases were due to lessened competition. In the case of the competitive joint rates, the competitive situation on which these are based is mainly that through the port of Boston. It is a combination of the Boston route and the New York rate, the latter rate applying to Boston; that is to say, the New York rate plus the vessel rate port charges and marine insurance make up a rail and water rate by Boston to such places as St. John, Halifax, Moncton, Amherst, Mulgrave and Sydney for local delivery. The all-rail Canadian route from Ontario can exceed this combination only in so far as it gives additional advantages, such as greater dispatch, etc. The rail haul from Windsor, Ontario, to Boston, is 731 miles, while to St. John it is 1,048 miles. To Halifax, the distance via Grand Trunk and Intercolonial is 1,306 miles, while via the C.P.R. and I.C.R. it is 1,324 miles.

A TRIBUTE FROM ENGLAND.

Canadian Pacific Railway Co.
Office of the European Manager,
62, Charing Cross, London. S.W.,
England, July 10, 1911.

Dear Mr. Burrows,—For many years past I have been a subscriber to The Railway and Marine World, which in my opinion is the best paper in existence devoted to the many varied interests for which it stands.

Its great feature is the accuracy always maintained in its columns, and next to that I should place the personal element, which provides a source of interesting reading amongst the world's transportation fraternity.

May your well-deserved success long continue.

Yours faithfully,

GEO. McL. BROWN.

The competitive factors above outlined have been decreasing in power. In the new tariff, the competitive situation affects the rate to the Sydneys. It is also effective so far as St. John is concerned, this being due to the short line mileage of the C.P.R. In general, it may be said that the decreased efficiency of the competitive factors has lessened the number of competitive joint rates. As to various points formerly covered by competitive joint rates, it is the "normal" basis which now applies. The "furtherance" rates apply to tide water ports on traffic going beyond to the out ports by vessel, or to Prince Edward Island points. These rates are really proportions. The "furtherance" rates, so far as the rail haul is concerned, are based on New York, or, more exactly, on the Chicago-New York rate. The Board, in order 586, July 25, 1905, dealing with the complaint of the Dominion Millers' Association et al, re rates on flour and other grain products for export, recognized the Chicago-New York basis, and fixed certain groups in the territory west of Kingston and Sharbot Lake to Windsor on certain percentage relationships to the Chicago-New York rate, these maximum percentages varying from 70% to 90%. While this order was concerned with export rates, the traffic moving under "furtherance" rates presents an analogous condition. In so far as it has to be transhipped at St. John, Halifax, or other ports to ocean vessels, it is subjected to transportation conditions similar to the export traffic moving to European ports. Further it must be recognized that this "furtherance" traffic will move from Ontario points through Canadian channels only when the Chicago-New York rate is taken as a maximum. For example, under the grouping provided under the order, Chatham is a 78% point and will therefore take the Detroit rate as a maximum. Further consideration of this order shows the different proportionate percentages fixed in different parts of Ontario, and attracts attention to the controlling effect throughout western Ontario on the Chicago-New York rate. The Board's Chief Traffic Officer advises that these "furtherance" rates in the new tariffs are uniformly based.

At the close of the hearing in Toronto, Mr. Watts took the position that the rearrangement of rates which had been made in the tariffs in question was discriminatory and contrary to the agreement reached in 1905. As the situation presents itself to me, the agreement reached in 1905 has no necessary relation to the competitive joint and "furtherance" rates, except in so far as it fixes a maximum. The competitive joint rates have been controlled by rail and water competition, which is of decreasing importance. The "furtherance" rates are also controlled by competitive conditions. Both as to the competitive joint rates and as to the "furtherance" rates, the competitive conditions in so far as they are effective are effective over lines of rail and water communications which are not subject to the control of the Board. It has been so often recognized that rail carriers may meet the efficient competition of water carriers without at the same time necessitating a readjustment of rates at points where such competition is not in effect, and that it is unnecessary to quote decisions of various regulative tribunals dealing with this matter. It is sufficient to say that this has been recognized by the Board, as well as by the Interstate Commerce Commission, and other regulative tribunals. In Canada, the competition of a boat line which is now owned, chartered, used, maintained, or worked by a railway subject to the jurisdiction of the Board, is exempt from the Board's control. It is recognized that on such a state of facts it is in the discretion of the railway to what, if any, extent it shall recognize this competition; and if competition forces the rates of a railway below its normal basis, it follows that when the competition is less effective the railway may bring its rates up more closely to its normal basis. What applies to a hypothetical competition, such as has been outlined existing in Canada, applies with equal, if not greater, force to a competition effective through a foreign country and on the high seas.

I am, therefore, of opinion that it is within the discretion of the railways to vary their competitive joint rates or their competitive joint "furtherance" rates within the limits fixed by the "normal" rates, subject, of course, to their meeting any attack made on any of the rates so changed on the ground that they are discriminatory. It, therefore, follows that the application to have these tariffs disallowed must fail, and the application must be dismissed.

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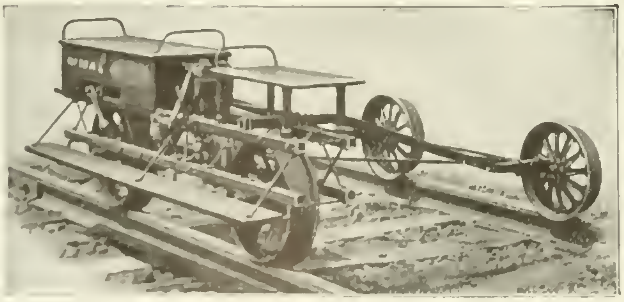

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United States Railway Statistics for Year Ended June 30, 1910.

The statements in this preliminary abstract are based upon compilations for the annual statistical report of the Interstate Commerce Commission, covering the fiscal year ended June 30, 1910, and revised returns may slightly affect some of these advance figures before final publication. Except where specifically mentioned, the following statements do not include data from reports of companies classed as switching and terminal.

MILEAGE.

On June 30, 1910, there was a total single-track mileage of 240,438.84 miles in the U.S., indicating an increase of 3,604.77 miles over the corresponding mileage at the close of the previous year. An increase in mileage exceeding 100 miles appears for the states of California, Florida, Georgia, Minnesota, Mississippi, Nevada, Oklahoma, Oregon, Texas, Washington, and West Virginia, and the Territory of Arizona.

Substantially complete returns were rendered for 240,830.75 miles of line operated, including 10,357.19 miles used under trackage rights. The aggregate mileage of railway tracks of all kinds covered by operating returns was 351,766.59 miles. This mileage was thus classified: Single track, 240,830.75 miles; second track, 21,658.74; third track, 2,206.39; fourth track, 1,488.78; yard track and sidings, 85,581.93. These figures indicate an increase of 9,415.35 miles over corresponding returns for 1909 in the aggregate length of all tracks, of which increase 3,205.30 miles, or 34.04%, represent yard track and sidings.

The number of railways for which mileage will be included in the report is 2,196. In addition, 301 switching and terminal companies reporting show a total mileage owned of 3,884.62 miles, of which 1,614.21 miles were assigned as main track and 2,270.41 as yard track and sidings.

During the year railway companies owning 8,614 miles of line were reorganized, merged, or consolidated.

EQUIPMENT.

There were 58,947 locomotives in the service of the carriers on June 30, 1910, indicating an increase of 1,735 over corresponding returns for the previous year. Of the total number, 13,660 were classified as passenger, 34,992 as freight, and 9,115 as switching, and 1,180 were unclassified.

The total number of cars of all classes was 2,290,331, or 72,051 more than on June 30, 1909. This equipment was thus assigned: Passenger service, 47,095 cars; freight service, 2,135,121; and company's service, 108,115. The figures do not include so-called private cars of commercial firms or corporations.

The average number of locomotives per 1,000 miles of line was 245, and the average number of cars per 1,000 miles of line was 9,510. The number of passenger-miles per passenger locomotive was 2,367,386, and the number of ton-miles per freight locomotive was 7,287,863.

The number of locomotives and cars in the service of the carriers aggregated 2,349,278, of which 2,301,260 were fitted with train brakes, an increase of 86,353 over the previous year, and 2,332,837 were fitted with automatic couplers, an increase of 72,060. Nearly all of the locomotives and cars in passenger service were equipped with both train brakes and automatic couplers. Substantially all the freight locomotives had train brakes and automatic couplers. Of the 2,135,121 cars in freight service, the number fitted with train brakes was 2,107,312, and the number fitted with automatic couplers was 2,120,750.

EMPLOYES.

The total number of persons reported as on the pay rolls of the steam roads was an average of 706 per 100 miles of line. As compared with returns for June 30, 1909, there was an increase of 196,597 in the total number of employes. There were 64,691 enginemen, 68,321 firemen, 48,682 conductors, 136,938 other trainmen, and 44,682 switch tenders, crossing tenders, and watchmen.

The total number of railway employes (omitting 95,328 not distributed) was apportioned among the six general divisions of employment as follows: To maintenance of way and structures, 504,979; to maintenance of equipment, 329,373; to traffic expenses, 21,652; to transportation expenses, 661,355; to general expenses, 53,385; and to outside operations, 33,348.

The total amount of wages and salaries reported as paid to employes during the year was $1,143,725,306.

The total number of persons reported by switching and terminal companies as on their pay rolls was 33,015. The total amount of wages and salaries reported by this class of companies for 1910 was $21,719,549.

CAPITALIZATION OF RAILWAY PROPERTY.

On June 30, 1910, the par value of the amount of railway capital outstanding, was $18,417,132,238. Of this, $14,338,575,940 was outstanding in the hands of the public.

Of the total capital outstanding, there existed as stock $8,113,657,380, of which $6,710,168,538 was common and $1,403,488,842 was preferred; the remaining part, $10,303,474,858, represented funded debt, consisting of mortgage bonds, $7,408,183,482; collateral trust bonds, $1,153,499,846; plain bonds, debentures, and notes, $933,966,704; income bonds, $290,951,276; miscellaneous funded obligations, $163,531,972; and equipment trust obligations, $353,341,578.

Of the total capital stock outstanding, $2,701,078,923, or 33.29%, paid no dividends. The amount of dividends declared during the year (by both operating and lessor companies) was $405,771,416, being equivalent to 7.50% on dividend-paying stock. No interest was paid on $790,499,252, or 7.94% of the total amount of funded debt (other than equipment trust obligations) outstanding.

PUBLIC SERVICE OF RAILWAYS.

The number of passengers carried during the year was 971,683,199. The corresponding number for the year ended June 30, 1909, was 891,472,425. The number of passengers carried 1 mile, or the passenger mileage, as compiled for 1910, was 32,338,496,329. The corresponding return for 1909 was 3,229,173,740 less. The number of passengers carried 1 mile per mile of road was 138,250.

The number of tons of freight carried (including freight received from connections), was 1,849,900,101, while the corresponding figure for the previous year was 1,556,559,741.

The ton mileage, or the number of tons carried 1 mile, was 255,016,910,451. The total ton mileage was 218,802,986,929; the increase in the ton mileage over the return for 1909 was 36,213,923,522. The increase in the number of tons carried 1 mile in 1909 over 1908 was 421,432,127; the number of tons carried 1 mile per mile of road for the year 1910 was 1,085,745.

The average receipts per passenger per mile were 1.938 cents; the average receipts per ton per mile, 0.753 cent. The passenger service train revenue per train mile was $1.30.396; the freight revenue per train mile was $2.86.218. The average operating revenues per train mile were $2.24.628. The average operating expense per train mile were $1.48.865. The ratio of operating expenses to operating revenues was 66.29%.

REVENUES AND EXPENSES.

The following figures under the heading of revenues and expenses exclude returns for a few small roads because of deficiencies in their reports. The operating revenues (average mileage operated, 236,986.51 miles) were $2,750,667,435; the operating expenses were $1,822,630,433. The corresponding returns for 1909 (average mileage operated, 232,981.11 miles) were: Operating revenues, $2,418,677,538; operating expenses, $1,599,443,410. The following figures show the operating revenues for 1910 in detail:

Freight revenue	$1,925,553,036
Passenger revenue	628,992,473
Mail revenue	48,913,888
Express revenue	67,190,922
Excess baggage revenue and milk revenue (on passenger trains)	14,733,680
Parlor and chair car revenue and other passenger-train revenue	4,412,973
Switching revenue	26,367,214
Special service train revenue and miscellaneous transportation-revenue	8,858,215
Total revenue from operations other than transportation	23,778,637
Joint facilities revenue .... Dr.	572,875
Joint facilities revenue .... Cr.	2,439,272
Total operating revenues	$2,570,667,435

The operating revenues stated above averaged $11,607 per mile of line.

Operating expenses, as assigned to the five general classes, were:

Maintenance of way and structures	$368,507,102
Maintenance of equipment	413,109,929
Traffic expenses	55,912,620
Transportation expenses	916,614,826
General expenses	68,485,956
Total operating expenses	$1,822,630,433

The foregoing operating expenses averaged $7,691 per mile of line.

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New Pere Marquette Railroad Locomotives.

The inability of the average newspaper reporter to correctly give technical railway matters was recently emphasized in a Detroit dispatch published in many Canadian papers. After proceeding to state that the Pere Marquette Rd., following the installation of a number of new compound locomotives, was conducting a series of tests with a new device which, it was believed, would effect a considerable saving in coal consumption, the report went on to claim that "by a new arrangement of engine valves, a steam pressure of 160 lbs. is expected to be sufficient to haul a full load, while an ordinary locomotive requires from 225 to 250 lbs. of steam."

This must indeed be a "fearfully and wonderfully made" arrangement of valves that would permit a much smaller steam pressure to perform an equal amount of work! In pursuance of the usual verification policy of The Railway and Marine World, W. Boughton, General Master Mechanic of the Pere Marquette Rd., was consulted. His reply in substance is as follows: "Evidently whoever wrote the article referred to, was very poorly informed. We have never used and are not buying any compound locomotives, and what is apparently referred to as a device which it is believed will effect a considerable saving in coal consumption by a new arrangement of valves, is a superheater." Mr. Boughton proceeds to state that the lower pressures usually carried on superheater locomotives probably occasioned the mistake in the press dispatch. It is wonderful what a mess a layman can make of a seemingly simple mechanical statement.

◆

The Quebec Central Ry. entertained the members of the Railway Station Agents' Association of the New England States at luncheon, on the occasion of their visiting Sherbrooke, Que., during their recent convention.

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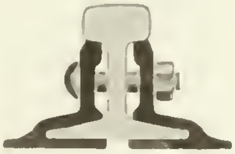

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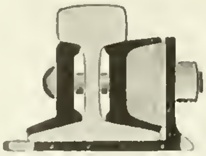

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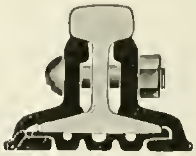

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Canadian Northern Ry. Earnings, Etc.

Gross earnings, working expenses and net profits from July 1,, 1910, with increases over, or decreases from, those of 1909-10:

	Earnings.	Expenses.	Net. Earnings	Net Increase.
July	$1,225,100	$876,900	$348,200	118,600
Aug.	1,093,000	830,000	263,000	58,600
Sept.	1,279,900	898,700	381,200	69,700
Oct.	1,627,800	1,047,300	580,500	99,800
Nov.	1,565,400	1,006,500	558,900	11,500
Dec.	1,255,400	896,200	359,200	24,800
Jan.	822,600	720,900	101,700	20,800
Feb.	803,100	667,300	135,800	4,300
Mar.	1,270,600	915,800	354,800	82,500
Apr.	1,345,400	984,300	361,100	29,900
May	1,445,600	1,042,400	403,200	34,600
June	1,465,600	1,147,400	318,200	25,400
	$15,199,500	$11,033,700	$4,165,800	$538,900
Inc.	$2,378,200	$1,839,300	$538,900	....

Following is a comparison of the gross earnings, expenses and net earnings for the years ended June 30, 1908, 1909, 1910 and 1911. The figures for 1911 show approximate increases of 67½% in gross earnings, and 65% in net earnings over those of 1908.

	Gross earnings.	Expenses.	Net earnings.
1908	$9,012,400	$ 6,528,400	$2,484,000
1909	9,668,900	6,873,500	2,795,400
1910	12,821,300	9,194,400	3,626,900
1911	15,199,500	11,033,700	4,165,800

Approximate gross earnings for July $1,475,950, and for two weeks ended August 14, $652,250, against $1,225,100, and $481,800, for same periods 1910.

The average mileage operated during the year ended June 30, was 3,383, against 3,179 for the previous year.

◆

C.P.R. Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases over 1909-10, from July 1, 1910:

	Earnings.	Expenses.	Net Profits.	Net Increase or Decrease
July	$8,869,214.32	5,384,594.73	3,484,619.50	1,004,748.86+
Aug.	9,255,331.67	5,563,659.34	3,691,672.33	727,614.46+
Sept.	9,315,213.67	5,403,614.03	3,911,599.64	479,710.47+
Oct.	10,229,370.77	5,724,210.25	4,505,160.52	118,863.33+
Nov.	9,413,238.22	5,676,115.96	3,737,122.26	44,784,31+
Dec.	8,705,283.99	5,418,750.10	3,286,533.87	171,110.79−
Jan.	5,740,206.34	5,084,088.47	656,117.87	660,478.52−
Feb.	6,375,576.57	5,230,869.06	1,144,707.51	342,311.73−
Mar.	8,880,640.59	5,644,074.05	3,156,566.54	445,393.15+
Apr.	8,672,024 54	5,515,049,93	3,156,974.61	175,863 48+
May	9,312,057.17	6,367,972.41	2,944,084.76	387,820.61+
June	9,479,650.36	6,454,979.31	3,024,671.05	306,755 49+
	$104,167,808.21	$67,467,977.64	$36,699,830.57	$2,859,874.70+
Inc.	$9,178,311.88	$6,318,443.18	$2,859,874.70	....

Following is a comparison of the gross earnings, expenses and net earnings for the years ended June 30, 1908, 1909, 1910 and 1911. The figures for 1911 show increases approximating 46% in gross earnings and 68% in net earnings, over those of 1908.

	Gross earnings.	Expenses.	Net earnings.
1908 ...	$71,384,173.72	$49,951,807.70	$21,792,366.02
1909 ...	76,313,320.96	53,357,748.06	22,955,572.90
1910 ...	94,989,490.33	61,149,534.46	33,839,955.87
1911 ...	104,167,808.21	67,467,977.64	36,699,830.57

The net results of the company's operations for the year ended June 30, are as follows:—

Gross earnings		$104,167,808
Working expenses		67,467,978
Net earnings		$ 36,699,830
Net earnings of steamships in excess of amount included in monthly statements		1,118,350
Total net income		$ 37,818,180
Deduct fixed charges		10,011,071
Surplus		$ 27,807,109
Deduct amount transferred to steamship replacement account	$1,000,000	
Contribution to Pension Fund	80,000	
		1,080,000
Net revenue available for dividends.		$ 26,727,109
Surplus for year carried forward after payments of all dividends..		$ 11,873 242
Special income from interest on land sales and from other extraneous assets, not included in the above.		$ 6,602,205

Approximate earnings for July $9,291,000, and for two weeks ended August 14, $4,477,000 against $8,660,000 and $4,064,000 for same periods 1910.

Duluth, South Shore and Atlantic Ry.—Operating revenue for 12 months ended June 30, $3,148,818.16; operating expenses, $2,269,340.76; net revenue, $879,477.40; other income, $61,572.67; interest on bonds, taxes, etc., $1,161,515.47; deficit, $220,465.40, against $3,302,147.03 operating revenue; $2,269,247.84 operating expenses; $1,032,899.19 net revenue; $58,530.16 other income; $1,173,253.29 interest on bonds, taxes, etc.; $81,823.94 deficit for same period 1909-10.

Mineral Range Rd.—Operating revenue for 12 months ended June 30, $746,425.14; operating expenses, $707,587.49; net revenue, $38,837.65; other income $17,529.27; interest on bonds, taxes, etc., $151,684.11; deficit, $95,317.19, against $826,499.55 operating revenue; $738,669.21 operating expenses; $87,830.34 net revenue; $9,916.48 other income; $167,509.45 interest on bonds, taxes, etc.; $69,762.63 deficit, for same period 1909-10.

Minneapolis, St. Paul and Sault Ste. Marie Ry.—Operating revenue for 12 months ended June 30, $13,135,907.80; expenses and taxes, $9,215,301.12; operating income, $3,920,606.68, against $15,407,179.40 operating revenue; $9,026,601.21 expenses and taxes; $6,380,578.19 operating income for same period 1909-10.

Chicago Division.—Operating revenue for 12 months ended June 30, $8,836,669.98; expenses and taxes, $7,029,111.75; operating income, $1,807,558.23, against $8,928,224.58 operating revenue; $6,262,495.86 expenses and taxes; $2,665,728.72 operating income for same period 1909-10.

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Grand Trunk Ry. Earnings, Expenses, Etc.

Subject to audit, the accounts for the half year ended June 30, show the following results:—

Gross receipts		£3,561,200
Working expenses		2,628,200
Net receipts		£ 933,000
Income from rentals, outside operations and car mileage balance		22,400
Total net revenue		£ 955,400
Net revenue charges, less credits		511,000
Balance		£ 444,400
Deduct, Canada Atlantic Ry. deficiency for the half year	£41,700	
Detroit, Grand Haven and Milwaukee deficiency for the half year..	39,700	81,400
Surplus		£ 363,000

This surplus added to the balance of £9,100 from Dec. 1910 makes a total of £372,100 available for dividend, which will admit of payment of the full dividend for the half year on the 4% guaranteed stock, and first and second preference stocks, leaving a balance of about £11,700 to be carried forward.

The accounts of the G. T. Western Ry. for the year ended June 30, after providing for all fixed charges, including the balance brought forward from the previous year, show a deficit of £31,462. As this result has arisen owing to the unusual circumstances of the strike which occurred during the third and fourth weeks of July and the first week of August, 1910, it has been decided to carry the balance forward to the next year.

Following is a comparison of gross earnings, expenses and net earnings for the yeara ended June 30, 1908, 1909, 1910 and 1911. The figures for 1911 show approximate increases of 9½% in gross earnings and ½% in net earnings, over those of 1908.

	Gross earnings	Expenses	Net earnings.
1808	$32,543,288	$23,610,734	$8,932,554
1909	30,433,604	21,922,792	8,510,812
1910	33,868,415	25,368,317	8,500,098
1911	35,361,557	26,390,043	8,971,514

Approximate earnings for July $4,237,383, and for two weeks ended Aug. 14, $2,066,044 against $3,179,896 and $1,603,660 for same periods 1910.

Traffic Receipts of the System.

Aggregate from July 1 to July 31:—

	1911	1910
Grand Trunk Ry.	£685,677	£521,589
Canada Atlantic Ry.	36,513	25,887
G. T. Western Ry.	113,327	81,032
D.G.H. & M. Ry.	35,179	24,895
Totals	£870,696	£653,403

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Orders placed for Steel Rails,

As stated in our June issue, the Canadian Pacific Ry. had then ordered 107,200 tons of steel rails, by far the larger portion from the Algoma Steel Co. and nearly all the balance from the Dominion Iron & Steel Co. We are now officially advised that the company has ordered 30,000 tons of 65 lbs. steel rails in the United States for branch lines in the west.

The Government Railways Managing Board has ordered 7,000 tons of 80 lbs. steel rails from the Dominion Iron & Steel Co. for the Intercolonial Ry.

The Algoma Eastern Railway Co's Bond Issue.

An issue of £513,600 of 5% first mortgage bonds, due 1961, has been placed on the London, Eng., market through the Bank of Montreal, at 93%. The principal and interest of these bonds is guaranteed unconditionally by the Lake Superior Corporation.

The A.E. Ry. Co. was incorporated by the Dominion Parliament, with an authorized capital of $2,000,000 of common stock, $1,000,000 of 5% non-cumulative preferred stock, and $3,000,000 of 5% first mortgage 50-year gold bonds. All the common stock and $800,000 of the preferred stock, and the present is the first issue of bonds. With the disposal of these there will remain $500,000 of bonds unissued.

Under the old title of the Manitoulin and North Shore Ry., the company built and has in operation 22 miles of railway, between Sudbury and Crean Hill, serving the nickel mines of the Canadian Copper Co. and the Mond Nickel Co., and a short piece of line at Spanish River, operated by the C.P.R. The extension of the line from Crean Hill, via Spanish River to the shore of Lake Huron, at Whitefish Bay, is under construction, as is the section from Whitefish Bay to Little Current, on Manitoulin Island. The cost of these extensions, about 64 miles, including stations, terminal facilities and docks, and making provision for rolling stock, is estimated at £538,378. These extensions are expected to be completed by July, 1912. The total length of the line from Sudbury to Little Current is 86 miles, and subsidies in aid of construction have been granted as follows:—Dominion Parliament, a minimum of $3,200, rising to a maximum of $6,400 a mile for the whole distance; Ontario Government, a cash payment of $5,000 a mile for 53 miles north from Little Current; a land grant of 7,400 acres a mile for 66 miles between Whitefish River and Sudbury, and 10,000 acres a mile from Little Current to Whitefish River.

The net earnings from the existing 22 miles of line for the year ended Dec. 31, 1910, were £7,083, during which period the extension from the Gertrude Mine to Crean Hill had been in operation only five months; the net earnings for 1910 from this section are estimated at $12,000. With the line in full operation, and the completion of docks at Little Current for shipping, the output of the mines, it is estimated that the net earnings of the railway should amount to $29,000.

Part of the proceeds of the bond issue will be used to pay for $250,000 bonds of the Lake Superior Corporation, which have been cancelled in order to absolutely free the railway from all encumbrance, other than the first mortgage bonds now issued.

The directors are: T. J. Drummond, D. C. Newton, Montreal; J. F. Taylor, Toronto; H. M. Price, Quebec; W. C. Franz, Sault Ste. Marie, Ont.; W. K. Whigham, London, Eng.; R. L. Austin, Philadelphia, Pa.

◆

Minneapolis and St. Louis Rd., Iowa Central Ry.—New York press dispatches Aug. 15, state that the directors of these companies have elected N. Erb as President of both companies, and that the first named company will be extended to the Canadian border with a view of connecting with the Canadian Northern Ry. and the G.T. Pacific. A Winnipeg dispatch of the following day says, "The Canadian Northern Ry. has either acquired control of the Minneapolis and St. Louis Ry., or will work in connection with that company to secure terminals in Minneapolis and Chicago. Confirmation of the report cannot be secured."

Why the C. P. R. North Toronto Route to Ottawa and Montreal is the Logical One

The train leaves as follows:

Leave North Parkdale - - -	9.15 p.m.	Arrive Ottawa, 6.50 a.m.
Leave West Toronto - - -	9.30 p.m.	Arrive Montreal 7.00 a.m.
Arrive North Toronto - - -	9.40 p.m.	Daily except Sunday.
Leave North Toronto - - -	10.00 p.m.	Will Stop at Westmount.

¶ The residents of Toronto are adjacent to either North Parkdale, West Toronto or North Toronto stations, same being easily accessible and closer to residential districts.

¶ The North Toronto route is over an hour faster and overcomes a long hill climb for the train out of Toronto, obviating any inconvenience and ensuring early arrival at Montreal and Ottawa.

¶ The roadbed has been improved till it is unexcelled in Canada.

¶ The equipment is "Canadian Pacific Standard," a synonym for the "best" and attentive porters, non-obsequious, ensure efficient service. .

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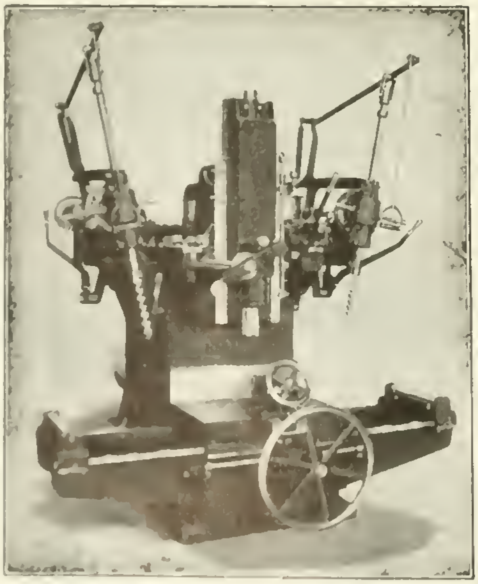

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Grand Trunk Railway Betterments, Construction, Etc,

New England Lines Proposals.—The injunction restraining the New York, New Haven and Hartford Rd. from building on the right of way in Woonsocket, R.I., for which plans have been filed by the New England Southern Rd., is effective until Sept. 16, when the question whether the land is necessary to the N.E.S.R. or to the N.Y., N.H. and H. Rd., will be argued. One of the conditions upon which the injunction was granted was that the N.E.S.R. should put up a bond to indemnify the N.Y., N.Y. and H.R. from any loss should a final decision be given in its favor. A bond of $50,000 was put up Aug. 5.

A somewhat similar situation has arisen in Burlington, Vt., where the Rutland Rd. has filed track allowances on Lake St., which the Central Vermont Rd., the controlling company of the N.E.S.R. claims to own. E. H. Fitzhugh, President, and G. C. Jones, General Manager, C.V.R., are negotiating for a settlement.

The organization of the New England Southern Rd. in Massachusetts was completed in Boston, Aug. 17. The certificate states that $1,000,000 of capital has been subscribed, and $100,000 paid in. The company proposes to build a railway from Palmer, Mass., to Providence, Rhode Island. The entire capital is in the hands of officials of the Central Vermont Ry., which is controlled by the G.T.R.

Bonaventure Station, Montreal.—A. W. Smithers, Chairman of the Board, in an interview at Montreal, Aug. 8, said the company was busy working out its plans for the modernization of Bonaventure station, and that it would not be long before active work was begun upon its erection.

Ottawa Improvements.—A. W. Smithers, Chairman, and the directors' party visited Ottawa Aug. 11, and inspected the work in progress at the hotel and station building. He expressed himself satisfied with the progress made, but declined to say anything in regard to the plans for rearranging the entrance of railways into the city, as he had not given them serious consideration. The new station, President Hays stated, would be completed about Oct. 1.

A contract has been let to John S. Metcalf Co., Ltd., Montreal, for the concrete foundations for the train shed of the new passenger station at Ottawa, and for the erection of the concrete platforms for the same. The approximate expenditure under the contract is $50,000.

M. Donaldson, Superintendent, Ottawa Division, in a recent interview said the western end of Ottawa was the most advantageously placed industrial centre, and that the G.T.R. would do all that was possible to develop it.

Toronto Asylum and Central Prison.—Official announcement was made, Aug. 11, that the site of the Toronto Asylum, Queen St., and the Central Prison, King St., had been sold to the G.T.R. and the Massey-Harris Co. for $1,025,000. The G.T.R. assumes the whole parcel, but has entered into an arrangement by which the Massey-Harris Co. secures a portion of the Asylum grounds for an extension of the plant. Possession is to be given of such portions of the properties as the Government may from time to time be able to vacate. About eight acres of the Asylum site have already been handed over to the purchasers.

The plans for the laying out of the Asylum site have been submitted to the city council. The area acquired by the G.T.R. is to be laid out for yard accommodation, a new freight shed, and for factory sites. The northwest portion of the site is reserved for sites, while the freight sheds will be along the southern boundary of the property. There will be two freight sheds, with a 50 ft. wagon road between them, and a capacity of 108 cars. The yard area will be bordered by Queen St. on the north and Shaw St. on the east, and runs down to Armour St. at the southwest corner. At this point tracks will be run into the property, branching out into sidings, which will occupy all but the northwest portion. Altogether there will be 12 uncovered tracks, with accommodation for 496 cars. The company intends to give the public adequate protection on the streets, which border on the tracks. A space of 100 ft. will be left from the eastern side of Shaw St., while the sidings will end 90 ft. south of the south side of Queen St.

Mimico-Toronto Grade Revision.—H. G. Kelley, Chief Engineer, completed an inspection of the grade revision work on Lake Shore road, Toronto, Aug. 3. It is about half completed, and this rate of progress is considered to be satisfactory. The first section of the new track to be completed was put in operation July 25, when the eastbound traffic was switched over from the temporary tracks to the new ones.

Toronto Belt Line Spur.—Application is being made to the Board of Railway Commissioners for approval of plans of a spur track from the Toronto Belt Line Ry. at Windermere Ave. to the Steel Co. of Canada's premises, lot 28, first concession from the bay, York tp.

Guelph Improvements.—In connection with the laying out of the grounds and the other improvements at Guelph, consequent upon the erection of the new station, which was opened for traffic at the end of June, the track is being raised from the bridge over the Speed River westward. Subways carrying four tracks are being built on Huskisson St. and an adjoining street.

Stratford Freight Sheds, etc.—A new freight shed 100 by 46 ft. is to be built, and next year it is expected that a start will be made in carrying out the reconstruction of the yards. (Aug., pg. 737.)

Wyevale-Tiffin Branch.—The piece of line which has been under construction from near Wyevale, on the Penetang branch, to Tiffin, on the Midland branch, 8.90 miles, is practically completed. The only piece remaining to be finished is a fill of 2,000 ft. at McDonalds.

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Railway Ties Bought in 1910.

The Forestry Branch of the Department of the Interior has issued the following statistics with regard to cross-tie consumption: In 1910 there were 9,213,962 cross ties purchased by steam and electric railways at a cost of $3,535,228, a decrease of 35% from the number purchased in 1909. The average cost at the point of purchase was 38 cents a tie. Cedar, jack pine and hemlock furnished 77% of all the ties purchased. Cedar alone supplied 40% of the total consumption and its use is increasing yearly in proportion to other species. Oak, which makes an expensive tie, costing 74 cents each, was used principally by a United States company having mileage in Canada. Of the total number of ties purchased, 70% were hewn. The only important species which had a majority of sawn ties, was oak. Sawn ties cost on the average 36 cents each, and hewn ties 3 cents more. The steam railways used 95% of all the ties and they cost on the average 38 cents. The electric railways used 302,540 ties—an increase of 183% over 1909. They cost 41 cents each. Although on the average the electric railways use smaller ties, this excess of 3 cents in the cost is due not only to the disadvantages incident to contracts for smaller quantities of materials, but also the fact that the electric roads are more likely to purchase ties at points where the price includes transportation charges.

◆

The Quebec Bridge for the N.T.R.

Questions relative to the plans prepared by the Quebec Bridge Commission, and the plan submitted by the St. Lawrence Bridge Co., which has been accepted by the Government, were raised in the House of Commons shortly before its recent prorogation, and the Minister of Railways, in reply, stated that the official design provided for a railway, street railway, and roadways on the bridge, but tenderers were asked in addition to submit designs of their own, and alternative designs were submitted in addition to tenders on the official design by three companies, the British Empire Co. being the only company which did not submit an alternative design. A report, dated Oct. 26, 1910, was made by the three Commissioners, stating that a satisfactory bridge could be built on the official design or on either of the designs submitted by the St. Lawrence Bridge Co. The Commissioners were asked to supplement that statement by a more positive one, as to which of the designs they named was the best. A report was then made by R. Mojeski and C. Macdonald, recommending the adoption of one design submitted by the St. Lawrence Bridge Co., the Chairman, H. E. Vautelet, dissenting. Under the order-in-council appointing the board, H. W. Hodge and M. J. Butler were called in, and as a result a final report was made Feb. 11, recommending the acceptance of one of the designs submitted by the St. Lawrence Bridge Co. This design included all the accommodations for traffic provided in the official design. In this report attention was also called to the fact that the St. Lawrence Bridge Co. had among its tenders, submitted a design omitting the roadways, and stated that, if the Government desired it, the highways could be omitted without changing the above recommendation, or delaying the progress of the work. After a full consideration, the Government decided to build a railway bridge with footwalks, and on March 14, a report was signed by Messrs. Macdonald, Mojeski and Hodge, recommended that a contract with the St. Lawrence Bridge Co. for the superstructure of a bridge of this character, by which a saying of $2,600,000 could be made. This design is, in every way, similar to the design which was recommended by the Board, except that it provides only for the railway and footwalks.

The contract for the bridge was signed April 4. The total amount paid up to July 24 for salaries and expenses of the Board was $256,808.23.

Tenders are under consideration by the Department of Railways for the removal of the unused material delivered on the ground and intended for use in connection with the bridge which collapsed. (Aug., pg. 741.)

◆

Don Bridge, Toronto.—The new high level bridge across the Don River, at Queen St., Toronto, is expected to be completed Nov. 1. The cost will be about $200,000, of which 85% is being paid by the G.T.R., C.P.R., Canadian Northern Ry. and the Toronto Ry. The contract was let by the city council to the McGuigan Construction Co.

The Minister of Trade and Commerce has, pursuant to the authority of the act respecting the grain trade in the inspection district of Manitoba, declared that all elevators at Fort William and Port Arthur, Ont., are public terminal elevators, from Aug. 20 until further declaration.

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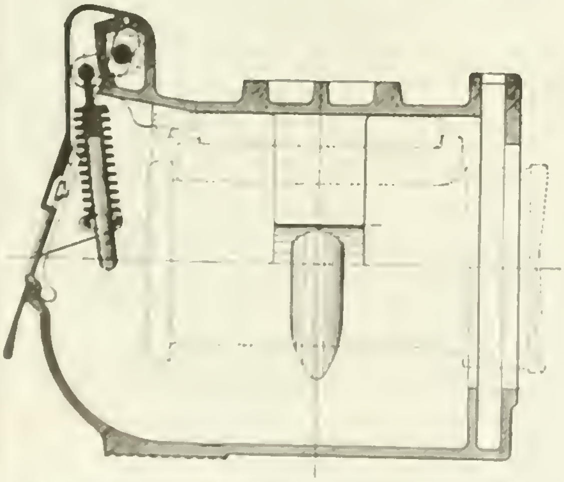

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National Transcontinental Railway Station at Quebec.

Tenders were received to Aug. 31 by the N.T.R. Commissioners for the erection complete of a terminal station in Quebec, in accordance with plans and specifications prepared under the direction of the Commission, and approved of by G.T. Pacific Ry. officers.

The plans and specifications, which were prepared by Marchand and Haskell, architects, provide for a building on the site of the old Champlain Market, to be used as a passenger station for the N.T.R., which is to be operated by the G.T. Pacific Ry. The plans show a building facing on the square, the terrace side being 257 ft. wide, with a depth of 124 ft. for the main building.

The main front shows a handsome elevation, the central portion being carried considerably above the rest of the building. The feature of this part is a well designed arch, flanked by pillars, and finished with capstone and pediment. Passing through the main entrance doors, a large vestibule is reached, off which are the elevators, stairway, and booths, which will be devoted to purposes not yet defined. From the vestibule entrance is obtained to the rotunda, which is surrounded by a dome 41½ ft. in diameter. Off the rotunda are arranged ticket offices, parcel office, Canadian Express bondroom, Canadian and U.S. customs officers, a large baggage room, with public area; telegraph office, etc. Another vestibule leads from the rotunda to the concourse, which extends the whole length of the building. Off the rotunda is the general waiting room in the centre of the building, and in the main front is the lunch counter and restaurant, while on the concourse side are the waiting rooms for men and women respectively, to each of which is attached ample toilet and lavatory accommodation. A vestibule leads to a platform 53 ft. wide between the station building and the train shed. Upstairs there will be two floors over the main building, which will be used by the G.T. Pacific Ry. as offices. The baggage room, extending the full width of the building, is on the harbor side. The plans contemplate 11 tracks, of which six are to be laid at once, alongside which will be platforms 650 ft. in length. We are advised that a train shed is not contemplated at present.

The main building is to be of Deschambault white stone. The building is estimated to cost about $750,000, and it is expected to have it completed by the end of 1912.

* * *

National Transcontinental Railway Construction, Etc.

At a meeting of the Moncton, N.B., city council, Aug. 8, the Mayor said the N.T.R. Commissioners had decided that freight yards and machine shops were necessary, and that work was to be started in providing them. The immediate expenditure would be about $500,000. A committee was appointed to meet the engineers and arrange as to the concessions asked for.

Press reports, Aug. 11, state that J. H. Corbett, of Corbett and Floesch, has arrived in Moncton for the purpose of starting work on the yards, etc., and that the necessary construction plant is on the way to Moncton. The plans are said to include the laying of ten miles of track in the yards.

Tenders are under consideration for the building of trainmen's houses at the following points:—Napadogan and Edmundston, N.B.; Laurier, St. Foye and Fitzpatrick, Que.; Cochrane, Graham and Redditt, Ont., and Transcona, Man.

A Moncton, N.B., press report, Aug. 14, states that a contract has been let to Dr. Murray and John Leah for the erection of station and other buildings on the line between Moncton and Beaver Brook, N.B., at an estimated cost of $150,000.

A contract is reported to have been let to J. H. Gignon, Quebec, for the erection of station buildings at 35 points on the Quebec section.

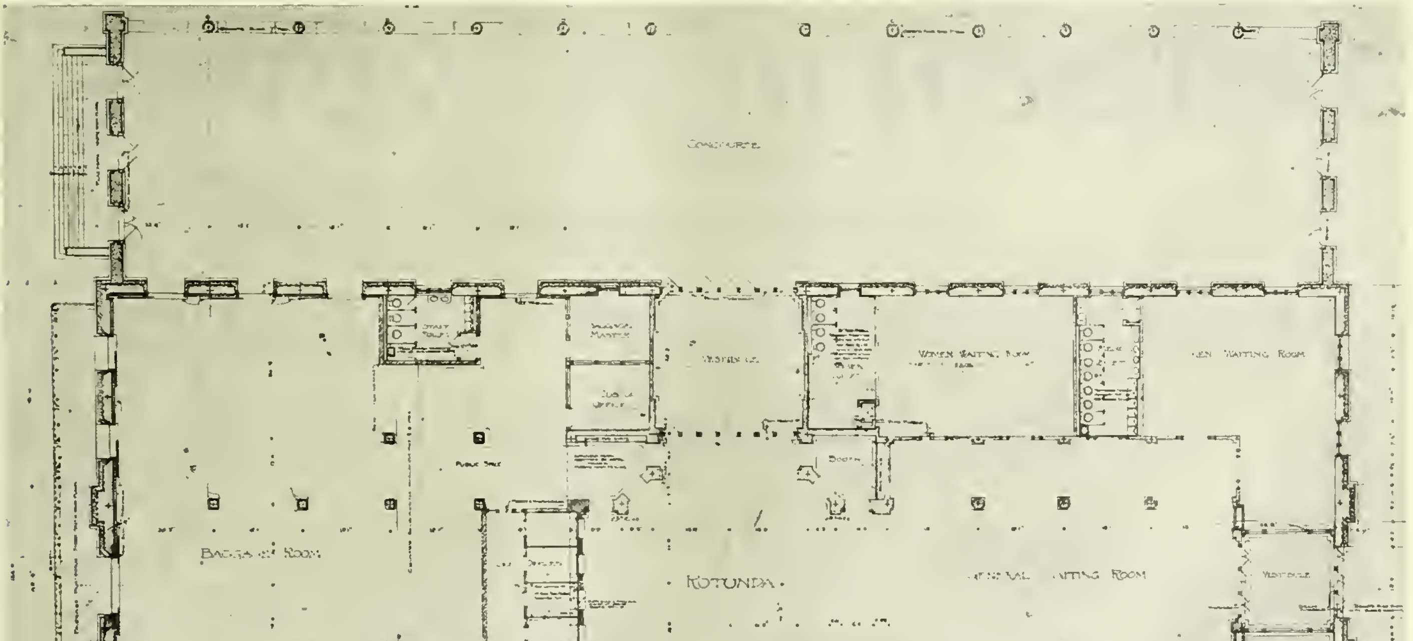
Steel is reported to have been laid 150 miles easterly from Cochrane, Ont., of which 50 miles have been laid this season. The contractors, Foley, Welch and Stewart, are ballasting and finishing up their contract.

It is said that as a result of a conference held at Ottawa, July 31, the G.T. Pacific Ry. will take over the section of the line from Winnipeg to the junction with its branch to Fort William, Ont., at an early date. This section of the line has been operated by the contractors for some months. It is said that the question of taking over the section of the line from the south bank of the St. Lawrence River to Moncton, which is now nearly completed, was also discussed, but that no decision was reached.

The Commissioners will receive to Sept. 4, tenders for the supply of 2,000 gross tons of 80 lb. steel rails, to be delivered at Moncton, N.B.

The yards at Transcona, Man., are being surfaced and lined up by the contractors, the J. D. McArthur Co. The storage capacity at present completed is for about 1,000 cars, and this will be considerably increased when the work is completed.

We are officially advised that a contract has been let to Haney, Quinlan and Robertson for the erection of the car shops at Transcona, Man., described on pg. 741 of our Aug. issue. This firm is completing the erection of the locomotive shops at the same place. (Aug., pg. 747.)



National Transcontinental Railway Station, Quebec. Ground Floor Plan.

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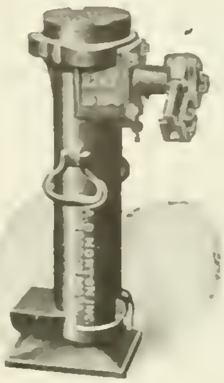

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OFFICE AND WORK

ESPLANADE STREET EAST, TORONTO

Grand Trunk Pacific Railway Construction, Etc.

The G.T. Pacific Ry. began operating its trains in and out of the new Union Station at Fort Garry, Winnipeg, Aug. 10.

Tenders were received to Aug. 15 for the erection of the Selkirk Hotel in Winnipeg. Some delay has been experienced in getting titles to all the property required for the hotel, but E. J. Chamberlin, Vice President and General Manager, states that the clearing of the property will be started at once, and that it is hoped to get the foundations in before winter. The excavation for the foundations will necessitate the removal of about 50,000 cubic yards of material.

Engineers were in Brandon, Man., Aug. 12, looking over the routes suggested for the entrance of the company's line into the city. A route map for the line in the city submitted to the Minister of Railways July 24 showed that connection would be made with the Great Northern Ry., and that its station would be used, but from what is being done by the survey party above referred to it would look as if the company proposed to lay out its own terminals near First and Richmond streets.

The Board of Railway Commissioners has authorized the carrying of traffic over the line from Melville, via Yorkton to Canora, 29.5 miles, at 16 miles an hour.

On the lines southerly from Melville, trains have been run into Regina, the first one being Aug. 9. This train service was only a temporary one for the Regina fair. A regular train service is in operation from Melville to Edgeley, and it will be extended to Regina as soon as the ballasting of the line has been completed. Grading has been completed for about 20 miles out of Regina in the direction of Moose Jaw. In connection with this branch there has been deposited with the land titles office at Moose Jaw a plan, profile and book of reference showing the location from the east line of sec. 25, tp. 17, range 24, west of the second meridian, to the west line of sec. 3, tp. 17, range 26, west of the second meridian, mileage 23.32 to 40.01.

In connection with the line under construction southerly from Regina to the International boundary, press reports state that it is proposed to build a branch line, starting 13 miles south of Regina, passing through Weyburn, and on to the Montana border, connecting there with a branch of the Great Northern Ry.

Plans have been sent to the Saskatoon, Sask., city council for a line leaving the main line west of the city, and coming in alongside the Goose Lake Canadian Northern Ry. line and crossing both that line and the C.P.R. about Ave. P and running north to the proposed G.T.P.R. station on 22nd street near the site of A. L. Brown's house Ave. P and 22nd street. From that point the line will strike off northwest to Battleford.

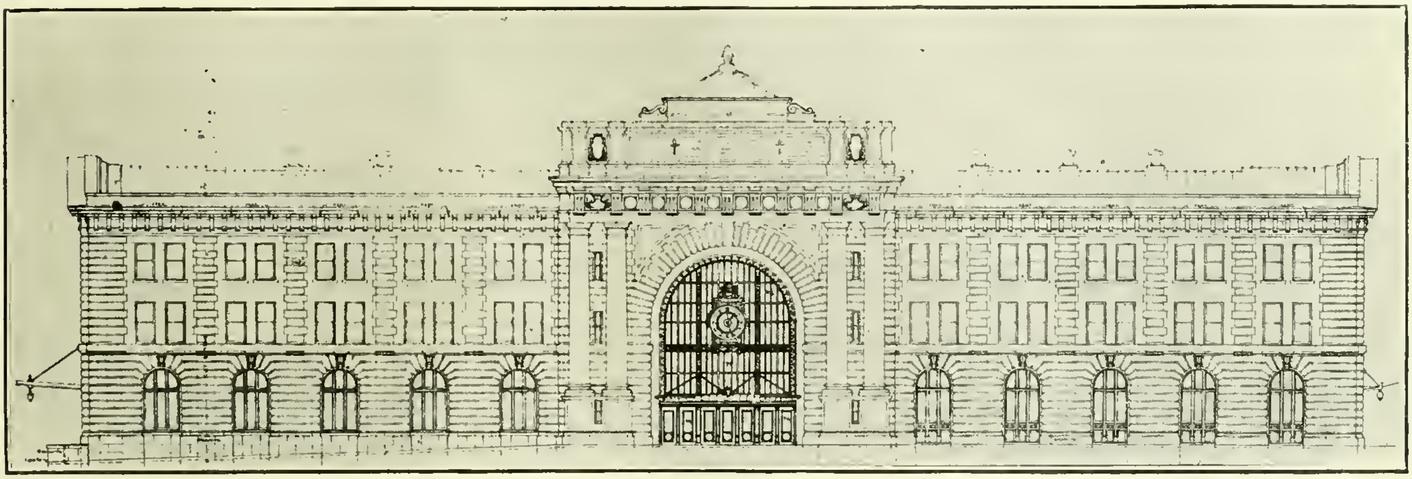
The Board of Railway Commissioners has approved of the location plans of the Cutknife branch from Battleford to the west line of sec. 29, tp. 43, range 18, west of the third meridian, mileage 0 to mileage 14.66.

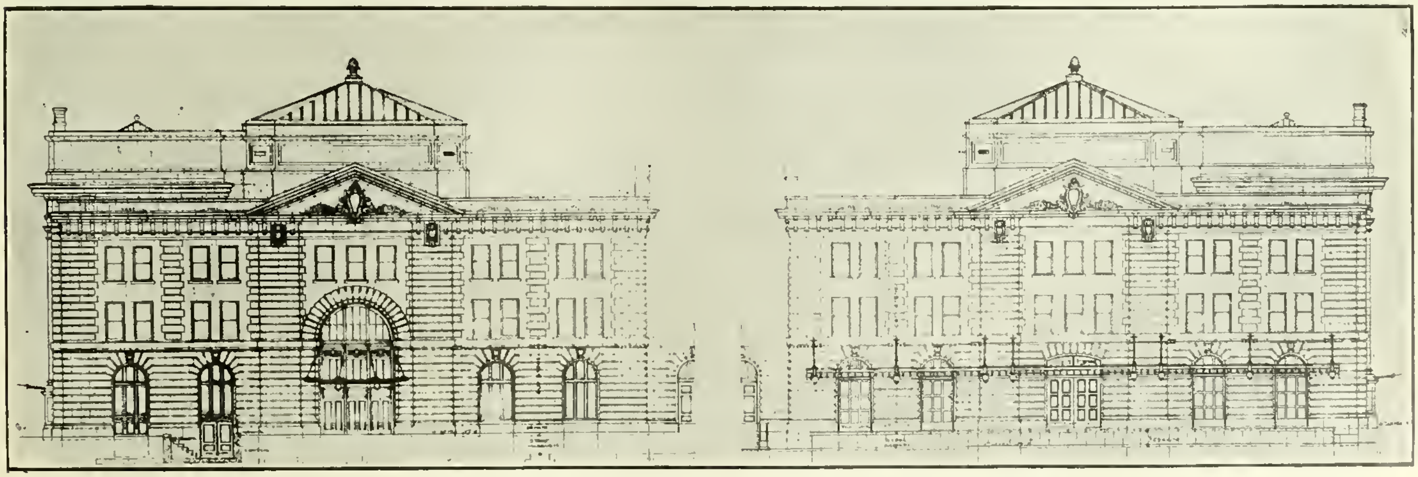
Grading is reported to have been commenced on a branch from Moose Jaw northwesterly. This projected branch will be 81 miles long and will in time be extended to connect with the main line at Young. From this point a branch is under construction to Prince Albert. Authority has been given by the Board of Railway Commissioners to operate traffic on the branch from Young to mileage 45.5. Track has been laid to Wakaw, near the proposed crossing of the river, and grading has been completed from Prince Albert to the north bank. With the completion of the bridge and the laying of about 25 miles of track the branch will be completed. A start was made Aug. 8 building a roundhouse in Prince Albert, and in laying out a yard.

On the branch to Battleford about 62% of the grading is reported completed, and 11 miles are ready for track laying. The branch starts at Biggar, Sask., and will be about 45 miles long.

On the line being built from Biggar towards Calgary, about 55% of the grading has been done on the 50 miles under contract, and 10 miles are ready for track laying.

On the line from near Tofield, which is also heading for Calgary, track has been laid to the crossing of the Red Deer River, and the Board of Railway Commissioners has authorized the opening of this section for traffic. Five of the seven spans of the bridge have been completed, and it is expected that the other two spans will be finished by Sept. 1. Tracklaying will then be resumed towards Calgary. Some difficulties have been met with in building the line through the C.P.R. irrigated lands, but


National Transcontinental Railway Station, Quebec. Front Elevation.


National Transcontinental Railway Station, Quebec. End Elevations.

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(From Daily Papers)

"Wednesday night B——— forgot to deliver an order to hold Eastbound Passenger Train No. 6, and only the fact that the Electric Headlight of the oncoming Passenger train was seen at a great distance by the Engineer of the Westbound Freight prevented a head end collision in the ——— Canyon near ———. The warning light was seen in time to enable the freight to get back on to the siding at ———."

PYLE-NATIONAL ELECTRIC HEADLIGHT CO.

CHICAGO

a settlement has been arrived at and construction was resumed Aug. 7.

Press reports state that a start will be made at an early date near Edson for a branch line to the Peace River district. The surveys for such a line are reported to have been completed during the summer.

On the line under construction to the Pacific Pass and Brazeau coal fields, tracklaying has been started from the junction point just west of Edson. The branch will have a length of 56 miles and eight miles of track were reported to have been laid Aug. 10.

On the main transcontinental line a train service has been put in operation from Edson to Hinton, Alta., 55.6 miles. Track has been laid as far as the Athabasca River, where a bridge is being built. As soon as this bridge is completed, tracklaying will be resumed. It is expected to have track laid to Fitzhugh this season. At this point divisional yards and terminals will be laid out. Fitzhugh is 17 miles east of the summit, and in this distance there is a rise of 238 ft. The total height above sea level at Yellowhead Pass is 3,704 ft.

Press reports state that a contract has been let to Foley, Welch and Stewart for the construction of the line from Tete Jaune Cache, 50 miles west of Yellowhead Pass, to Aldermere in Bulkley Valley, B.C., a distance of 415 miles. This report was in circulation Aug. 2, but the date for closing the tenders was Aug. 15, so that the story was probably premature. It is not, however, unlikely that this firm will secure the contract, as it has the contracts westerly and easterly terminating at Tete Jaune Cache, and Aldermere respectively, both of which contracts are well advanced towards completion. An official confirmation of the letting of the contract is expected daily.

Working easterly from Prince Rupert, a train service is being operated to Vanarsdol, 100.9 miles, while track has been laid as far east as Hazleton.

The contractors are busy at work on the three tunnels in the canyon on the Skeena River, which is about 106 miles east of Prince Rupert. The length of the three tunnels are said to be 1,300 ft., 1,100 ft. and 800 ft. Work on these have been in progress for quite a long time now, with the result that all of them are nearly completed. (Aug., pg. 747).

Amendments to General Train and Interlocking Rules.

The Board of Railway Commissioners passed the following order 14271, dated July 20:—Re joint application of the Grand Trunk and Canadian Pacific Ry. Companies, under sections 29, 30, 268 and 269 and such other sections of the Railway Act as may be applicable, for an amendment to the General Train and Interlocking Rules approved by the Board, Order 7563, July 12, 1909: It is ordered that the said rules be amended by cancelling the rules following, marked "Rules to be Cancelled," and substituting therefor the following provisions, marked "New Rules to be Substituted":—

Rules to be Cancelled.	New Rules to be Substituted.
Home Block Signal and Station Protection Signal, and Train Order Signal.	
A semaphore arm 60 degrees from the horizontal or a disc withdrawn indicates "proceed." When this position at night a green light is displayed.	A semaphore arm 60 degrees below or 90 degrees above the horizontal or a disc withdrawn indicates "proceed." When this position at night a green light is displayed.
Distant Block Signal.	
A semaphore arm standing horizontal or a disc displayed indicates "proceed with caution, prepared to stop at the home signal." When this position at night a yellow light is displayed. A semaphore arm 60 degrees from the horizontal or a disc withdrawn indicates "proceed." When in this position at night a green light is displayed.	A semaphore arm standing 45 degrees above horizontal or a disc displayed indicates "proceed, prepared to stop at next signal." When in this position at night a yellow light is displayed. A semaphore arm 60 degrees below or 90 degrees above the horizontal or a disc withdrawn indicates "proceed." When in this position at night a green light is displayed.
Interlocking Signals—Home Signal.	
A semaphore arm 60 degrees from the horizontal indicates "Proceed." When in this position at night a green light is displayed.	A semaphore arm 60 degrees below or 90 degrees above the horizontal indicates "proceed." When in this position at night a green light is displayed.
Interlocking Signals—Distant Signal.	
A semaphore arm standing horizontal indicates "proceed with caution, prepared to stop at the home signal." When in this position at night a yellow light is displayed. A semaphore arm 60 degrees from the horizontal indicates "proceed." When in this position at night a green light is displayed.	A semaphore arm standing 45 degrees above horizontal indicates "proceed, prepared to stop at next signal." When in this position at night a yellow light is displayed. A semaphore arm 60 degrees below or 90 degrees above the horizontal indicates "Proceed." When in this position at night a green light is displayed.

◆

Railway Finance, Meetings, Etc.

Algoma Central and Hudson Bay Ry.—A meeting of shareholders has been called for Sept. 20 at Sault Ste. Marie, Ont., to receive the report of the directors for the year ended June 30, and to consider and ratify "all the acts and proceedings of the Board since the last meeting of shareholders." Notices for the holding of meetings of shareholders of the Ontario, Hudson Bay and Western Ry., and the Algoma Eastern Ry., on the same day, and for similar purposes, have been given. All three railways are owned by the Lake Superior Corporation.

Buffalo and Lake Huron Ry.—The report for the six months ended June 30 shows that after providing for interest on first and second mortgage bonds, the balance, including the amount brought forward from the previous half year, was £14,913 11s. 1d., which, after payment of the usual dividend of 5s. 3d. a share, leaves £1,128 17s. 10d. to be carried forward to the next half year's accounts. The railway is operated under lease by the G.T.R. The directors for the current year are, Chairman, M. H. Maxwell, Liverpool, Eng.; J. M. Synge, Westerham, and E. Ashton, Liverpool, Eng.

Canadian Northern Ry.—A duplicate of a confirmatory trust deed dated Jan 20, 1910, made between the company, the National Trust Co., the British Empire Trust Co., and the province of Alberta, supplemented to the deed of June 10, 1909, made to secure certain 4% guaranteed debenture stock or bonds issued or to be issued, was filed with the Secretary of State, Ottawa, Aug. 3.

Canadian Pacific Ry.—The directors have declared a 2% dividend on the preferred stock, and a 2½% on the common stock for the quarter ended June 30, payable Sept. 30, to shareholders of record Sept. 1. The common stock dividend is at the rate of 7% per annum from revenue, and 3% per annum from land sales, etc.

Dominion Atlantic Ry.—Gross earnings for 12 months ended June 30, $1,256,400, against $1,331,726 for same period 1909-10.

Grand Trunk Pacific Ry.—London, England, cables, Aug. 22, state that there has been listed on the Stock Exchange there £696,000 of a recent issue of 4% debenture stock.

Guelph Jct. Ry.—The revenue received by the city of Guelph, Ont., from the C.P.R. for the operation of this railway for the quarter ended June 30, was $8,897.37, against $8,066.09 for the same period 1910.

The directors on July 27 declared a dividend of 9% for nine months, the cheque amounting to $15,000, being made payable to the city of Guelph, which holds the entire issue of common stock.

Kingston and Pembroke Ry.—The annual meeting was held at Kingston, Ont., Aug. 9, when it was reported that the past year was the best in the company's history. Following are the officers and directors for the current year:—President, W. D. Matthews, Toronto; Vice President and General Manager, W. R. Baker, C.V.O., Secretary, C.P.R., Montreal; other directors, A. R. Creelman, K.C., H. P. Timmerman, Montreal; J. Oborne, Toronto; Hon. W. Harty, J. B. Walkem, R. Crawford and W. F. Nickle, Kingston, Ont.

New Brunswick and Prince Edward Island Ry.—The annual meeting was held at Sackville, N.B., Aug. 1. Following are the officers and directors for the current year:—President, C. W. Fawcett; Secretary, C. Pickard; other directors, M. G. Siddall, F. B. Black, H. E. Fawcett, H. M. Wood and F. C. Harris.

New Brunswick Ry.—At the recent annual meeting of shareholders, a dividend of 4% was declared for the year ended June 30. Following are the officers and directors for the current year:—President, F. S. Meighen; Vice President, W. T. Whitehead; other directors, Lord Strathcona and Mount Royal, Sir Thos. G. Shaughnessy, John Turnbull, Robt. W. Reford, Col. H. H. McLean, K.C., G. Ferrer and G. S. Cantlie.

Quebec and Lake St. John Ry.—Total earnings for July, $66,095.28, against $56,689.43 for July, 1910. Aggregate total earnings for seven months ended July 31, $337,611.60, against $324,060.10 for same period 1909-10. The average earnings per mile for July were $231.60, against $198.63 for July, 1910, and for the seven months ended July 31, they were $1,182.71, against $1,146.94 for the same period 1909-10.

Temiskaming and Northern Ontario Ry.—Gross earnings for June, $123,857.79; expenditure, $111,847.56; net operating earnings, $12,010.23; other income, hire of equipment, $3,132.93; less for outside operations, $310; net income, $14,833.16.

White Pass and Yukon Ry.—Gross earnings for six months ended June 30, $397,130, against $413,334 for same period 1910.

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The Canadian Northern Railway's Montreal-Port Arthur Line.

The line which is to be built by the Canadian Northern Ontario Ry. under the special act passed last session of the Dominion Parliament will complete the main transcontinental line from Montreal to Port Arthur. The first section of the line is described in the act granting aid to the railway as the mileage already in part built by the C.N. Quebec Ry. and the C.N. Ontario Ry. from a point in Quebec province opposite Hawkesbury, to Rideau Jct., west of Ottawa. The second section extends from Rideau Jct. to a junction with the existing Toronto, Sudbury-Gowganda Jct. line, in Capreol tp.; the third section carries the existing line from the junction in Capreol tp., to near Sellwood Jct., 10.6 miles, and the fourth section covers the remainder of the distance into Port Arthur.

The Ottawa-Sudbury or Ottawa-French River section, as it is often called, is in many ways one of the most interesting sections of the C.N.R. system. The Toronto and Sudbury lines come out of Ottawa together for some 5.5 miles to Rideau Junction, where they bend in opposite directions, the Sudbury line heading northwest for over 30 miles to the Ottawa River. The work is light, and the alignment very good indeed, the only interesting features being the two overhead crossings of the C.P.R. at Bells Corners, and of the G.T.R. at South March. At mileage 38 from Ottawa the line crosses the Ottawa River into Quebec province, at the outlet of the Chats Lake. The crossing is about 2,500 ft. long, with one span of 250 ft. and a number of shorter ones. All foundations are on rock, and never submerged more than a few inches below low water. Through the county of Pontiac the work is again light to Portage du Fort, where the Ottawa is again crossed. The river is narrower at this point, but the grade much higher (about 50 ft. above low water). There are three spans of 200 ft. each and a number of shorter ones, the deepest foundations being in 18 ft. depth at low water. The location as outlined above was the subject of considerable study and discussion, as it seemed quite unnecessary to cross the Ottawa twice and leave the towns of Arnprior and Renfrew to one side. It was found, however, that the location of the Canada Atlantic and the C.P.R. on the south side of the Ottawa, through both these towns, and of the latter along the immediate bank of the river, made it impracticable to secure a reasonable share of the traffic, and at the same time to get good alignment and grades, and two crossings of the C.P.R. would have been necessary, and there would also have been heavy crossings of the Mississippi, the Madawaska and the Bonnechere. As a government-aided road also it seemed in better taste to strike out into new territory and avoid direct competition with the older lines.

Crossing back into Ontario at Portage du Fort, the line passes through a very rich country centred in Forresters Falls, Beachburg and Westmeath, and, crossing the C.P.R. again overhead about three miles east of Pembroke, runs into the latter town at the 86th mile, where the Muskrat River is crossed, in the valley of which is a G.T.R. branch, necessitating a high bridge to clear it overhead. A mile further on the line crosses the Indian River, a comparatively small stream. The natural route from this west is, of course, the Ottawa River, but not only are the shores very bold and precipitous, but the C.P.R. fully covers the territory and the C.N.R. would again have laid itself open to the charge of unnecessarily paralleling the older road. The valley of the Indian River was therefore taken to its source, near Grand Lake, and then the Petawawa River valley. This occupies a great depression running parallel to the Ottawa, and generally about 25 miles distant. An enormous quantity of pine timber has come down this river in the last 40 years, and it is still coming. The route follows the river closely from Lac a Travers to the head of Cedar Lake, which is a great sheet of water 10 miles long and two miles wide, forming a collecting basin for the several branches. The northern one is followed past Cauchon Lake, the line going over a low divide to the Amable du Fond. Crossing Kioskoqui Lake, the line ascends to another low divide and reaches waters flowing into Lake Nipissing. Here is the greatest individual drop in the whole line, a descent of 300 ft. in less than 15 miles, which necessitates a grade of 26 ft. per mile, compensated for curvature. At the foot of this grade is Chisholm Jct., where the Georgian Bay branch leads off, while the main line goes on past Callendar to North Bay, 230 miles from Ottawa. The C.P.R is crossed for the third time at Nipissing Junction again over head, and the Temiskaming and Northern Ontario Ry., about one mile from North Bay on the level. The line now skirts Lake Nipissing for some 10 miles close alongside the C.P.R., and then takes the valley of the Sturgeon River, which it crosses near Sandy Falls. It then follows the Kapikotitwia branch, and over a very low summit to Timmins Brook, draining into the Wahnapitei River, crossing the latter below Island Portage. The river is ascended for nearly two miles, and the line goes through a narrow pass to the south bay of Wahnapitei Lake and thence by Massey Creek to a junction with the line from Toronto at a point in Capreol township, near Hammer station.

The heaviest grade on this long stretch of 300 miles is that mentioned above. In the opposite direction the standard is the same, but occurs only in short pieces. There are some few 6° curves and one or two 8°, but the standard is 4°, and is seldom exceeded. In the canyon of the Petawawa River below Cedar Lake and at one or two other points there is some heavy side hill work in rock. The most interesting features are the two bridges over the Ottawa, and the almsot complete avoidance of grade crossings of other roads. There are seven crossings of other railways between Rideau Jct. and North Bay, and in all but one (the T. and N.O.R.) grade separation is effected.

The Sudbury-Port Arthur line is sometimes referred to as the "missing link." The first title is somewhat of an error, as Sudbury will not be on the main line at all. The contract which has been let for the building of the line from Port Arthur to the existing line will terminate easterly at Gowganda Jct., 53 miles north of Sudbury Jct., and includes some grading and clearing done by Angus Sinclair. There are about 15 miles beyond Gowganda Jct. ready for tracklaying, and Gowganda Jct. is 30 miles north of Sellwood Jct.

The greater part of the work to be done is very ordinary construction. The most interesting section is the last 120 miles into Port Arthur, which includes some heavy side hill work in rock and a tunnel of 1,100 ft. along the shore of Lake Nipigon, and an expensive bridge over the Nipigon River, a diversion of the same and a viaduct 2,200 by 130 ft. across the Blende River Valley. The other more important river crossings are, from east to west, the Ground Hog, the Trout, the Kapuskasing, Missinabie, Kabinakagami, Morrison, Kenogami, Sturgeon, and Black Sturgeon.

The ruling gradients are against westbound trains 6-10 of 1%, and against eastbound 5-10 of 1% compensated, which have nowhere been exceeded between Montreal and Port Arthur, and in a very few instances lived up to. The ordinary standard is 1-10 less than this in either direction. The standard of curvature is 6°, which has been exceeded at only half a dozen places, and for some hundreds of miles on the interior plateau 4° is the rule.

We are indebted to H. K. Wicksteed, B.A. Sc., M. Can. Soc. C.E., Chief Engineer of Surveys, Mackenzie, Mann and Co., Ltd., for the details of the routes, etc., of the two sections of the line described.

The contract for the building of the line from Gowganda Jct. to Port Arthur has been let to Foley Bros. and the Northern Construction Co. The mileage covered by the contract is approximately 540 miles.

A sub-contract has been let to P. T. Walsh for the first 59 miles out of Port Arthur, and another to the Nipigon Construction Co. for the next 91 miles easterly, thus putting 150 miles under subcontract. Some smaller contracts have been let on the eastern end of the work. Foley Bros. and the Northern Construction Co. will do some of the work direct with their own forces.

The construction will be under the charge of E. T. Agate, Sudbury, and H. T. Hazen, Port Arthur, as District Engineers, for the company, while O. W. Swensen will represent Foley Bros. and Northern Construction Co.

The Nipigon Construction Co., which has its headquarters at Nipigon, Ont., has the following officers and directors: President, W. G. Chambers; Vice President, W. B. Russel; Managing Director, C. McQuigger; Superintendent, R. K. Russel; director, W. A. McCaffery. All of them have been engaged in railway construction work for some years, and have just completed some contracts on the National Transcontinental Ry.

Tenders for the building of this section of the line are under consideration, and contracts will probably be let early in Sept.

C. P. L. Fowler, who has been Manager for the Nelson-Jenks Coal Co. at Great Falls, Montana, is reported to have been appointed Purchasing Agent for Foley Bros. & Northern Construction Co. in connection with their Gowganda Jct.-Port Arthur contract on the Canadian Northern Ry. It is said his headquarters will be at Nipigon.

The following Division Engineers have been appointed on the western end of the work:—Division A, A. P. Wenzell, Port Arthur; Division B, E. L. Dorsett, Nipigon; Division C, R. H. McCoy, Nipigon; Division D, A. J. Isbester, Nipigon.

Canadian Northern Railway Construction, Betterments, Etc,

James Bay and Eastern Ry.—We are advised that a contract has been let for the line from Roberval westerly for 30 miles, to J. P. Mullarkey, Montreal. A sub-contract is reported to have been let to Peron and Co., Metabetchouan, Que., for the building of this 30 miles westerly from Roberval, Que., which is the terminus on Lake St. John of the Quebec and Lake St. John Ry. The new line will, it is said, proceed westerly through the parishes of St. Prime, St. Felicien and La Dore. The company is authorized to build a line from near Lake Abitibi, Ont., on the Canadian Northern Ontario Ry., easterly and southeasterly, passing south of Lake St. John to the mouth of the Saguenay River, Que. The interests formerly associated with the Q. and L. St. J. Ry. had a Quebec charter for the building of a line from Roberval to James Bay, and also a charter for the Trans-Canada Ry., under which charters surveys were made covering these 30 miles. Provincial and Domin-

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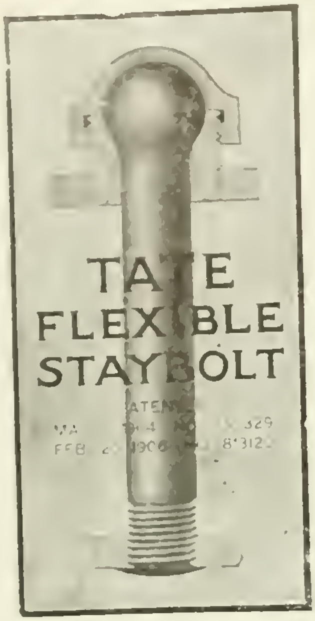

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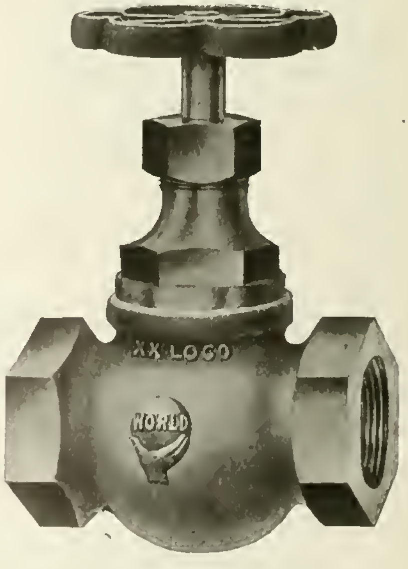

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Standard on Canadian Railways.

ion subsidies have been voted for this mileage out of Roberval.

The Canadian Northern Montreal Tunnel and Terminal Co. has been incorporated under the Dominion Companies Act, with a capital of $50,000, and office at Toronto, for the purpose of laying out and operating railway, tramway and steamship terminals, transportation warehousing and storage facilities, tunnels and approaches, yards, stock yards, grain elevators, steamships, piers, docks, drydocks, ship basins, etc., and in connection therewith to carry on a number of other businesses, and to do whatever may be incidental or necessary to the carrying out of the company's main objects. The operations of the company to be carried on throughout Canada. The provisional directors are:—G. G. Ruel, S. P. Biggs, A. J. Mitchell, J. B. Robertson, F. J. Buller, all of whom are connected with the Toronto offices of Mackenzie, Mann and Co., Ltd.

Canadian Northern Quebec Ry.—Quebec press reports, Aug. 14, state that the company has purchased a considerable area of land at Limoilou, Que., for the purpose of extending its yards and terminals at Quebec. The land is situated behind the Q. and L. St. J.R. station in Limoilou, just across the St. Charles River from Quebec.

The Board of Railway Commissioners has extended until Sept. 15 the time for the completion of the C.N.Q.R. across Notre Dame St., Montreal, and the joining of the Montreal St. Ry. and the Montreal Harbor Commissioners' tracks.

With respect to the projected terminals in Montreal, press reports state that electricity will be used as a motive power for the traffic on account of the tunnel under Mount Royal. A. W. Smithers, Chairman of the Board, G.T.R., stated in Montreal, Aug. 8, that he had not heard anything of a proposal that the G.T.R. and the C.N.R. should join in the building of a big terminal station there.

The new short line between Montreal and Hawkesbury, Ont., will be finished this fall. The substructure for the bridge over the Back River at Montreal will be started at an early date. The contract for this work had not been let up to Aug. 20.

The Canadian Northern Montreal Land Co. has been incorporated under the Dominion Companies Act, with a capital of $2,500,000, and offices in Toronto, for the purpose of acquiring lands, wharves, docks, warehouses, etc.; to acquire land for townsites, and to develop the same; and to carry on in connection various businesses, including those of shipowners, wharfingers, forwarders, and agents. The provisional directors are: G. G. Ruel, R. H. M. Temple, A. J. Reid, S. P. Biggs, and R. P. Ormsby, all of Mackenzie, Mann and Co.'s offices, Toronto.

It is said that a purchase of 402 acres of lands made for $846,000 by J. Barbour, Toronto, Aug. 11, is in the C.N.R. interests. The total amount invested in land recently in the Cote des Neiges and St. Laurent districts recently is said to aggregate $5,000,000.

Canadian Northern Ontario Ry.—The erection of the steel superstructure of the bridge across the Trent River at Trenton has been practically completed, and the steel has been delivered for some small bridges between Cobourg and Trenton, Ont. An announcement of the date of opening this section of the line is expected daily.

The grading on the extension to Belleville has been completed to the city boundary, and is being progressed with through the city. The substructure for the bridge across the Moira River is well advanced, and a contract has been let to T. Manley for the building of a station on Church St., south of Dundas St., at a cost of about $22,000. A five-stall roundhouse is being built at Napanee, which, it is expected, will be completed in Nov. In connection with the building of the line on to Ottawa, a subcontract has been let to R. A. Girouard for a section of about nine miles from Jones' Locks, Smiths Falls to Otter Lake.

A spur has been completed at Ottawa, connecting the line from Montreal and Quebec, with the Ottawa and New York Ry.

The company is reported to have purchased 110 acres of land at Bowesville, near the concrete bridge being built over the Rideau River, at the point where it is expected the Toronto-Ottawa line will join the company's transcontinental line. This area will be used for shops, etc., according to the reports. Other reports state that options have been obtained on something like 2,000 acres of land on the Merivale road for the company's purposes.

Extended reference to the Montreal, Ottawa, and Port Arthur line will be found on another page.

Duluth, Winnipeg and Pacific Ry.—Press reports say that J. A. Johnson and H. Fawcett, Duluth, Minn., have been awarded a contract for building a 10-stall roundhouse and the shop buildings in that city, which previous reports stated had been let to Bailey and Marsh, Minneapolis, Minn.

Plans are being prepared for the building of a station at Virginia, Minn., the point where the D.W. and P.R. connects with the Duluth, Rainy River and Winnipeg Ry., thus making a through line from Duluth to Winnipeg, and Port Arthur.

Canadian Northern Ry.—Tenders are under consideration for the erection of a brick station at Fort Frances, Ont. The plans show a 2½ story building, 116 by 24 ft. The platform will be 500 ft. long.

The Winnipeg and Northern Ry. has deposited in several registry offices of the area covered, plans, profiles and books of reference of its projected line through river lots in the parishes of St. Paul, St. Andrews, St. Clements, and St. Peter, and through townships 14-17, and ranges five to seven east of the principal meridian. This is the line which is being built as an extension of the Birds Hill branch to the beaches on the east side of Lake Winnipeg. About four miles of grading has been completed in the vicinity of St. Paul, and several miles of clearing and brushing have been done beyond. A second construction camp has been started near East Selkirk.

A contract has been let for the first section of the line to T. R. Edwards, Winnipeg.

The Fort Garry union station, Winnipeg, was opened for traffic Aug. 8. The first train to leave was a G.T. Pacific Ry. one, while the C.N.R. ran the first inward bound train.

Considerable betterments are being carried out on the lines west of Winnipeg. The new station at Brandon is practically completed, and such progress has been made with the hotel at the same place that it is now expected to have it opened for business Jan. 1, 1912. New roundhouses are being erected at Neepawa, Regina, Humboldt, Saskatoon and Edmonton. At many points on the line additional ballast is being put in, and a good deal of ditching is being done.

The Board of Railway Commissioners has authorized the opening of the following lines for traffic:—From Shellbrook to Big River, 57 miles; from Shellbrook to Blaine Lake, 35 miles; from North Battleford to Edam, 38 miles; from Kindersley to Alsask, 44 miles.

Grading has been completed as far as the city boundary of Moose Jaw, Sask., on the branch from the Maryfield-Lethbridge line. The plans for the entrance into the city, with the exception of a short distance, in respect of which the city desires to have the G.T. Pacific Ry. plans before it, have been approved. The station will be built at the corner of Thirteenth and Stadacona streets, and the freight sheds will be located behind Athabasca St. It is expected to have the steel laid on the branch this season.

The Russell branch is reported completed as far as Canora; the grading of the Melfort branch is completed to Humbolt, and the grading is completed to the Saskatchewan River of a branch southerly from Delisle, Sask. Delisle is a station on the Goose Lake branch, which is now open for traffic to Alsask, 44 miles beyond Kindersley. This line will affect a junction near the Red Deer River, with the branch from Vegreville, and will then be continued to Calgary. Surveys are being made for a route for a line from Calgary to Lethbridge to connect up with the line from Maryfield. The Cowan Construction Co., having completed the grading to Moose Jaw, has removed its plant to New Warren, about 30 miles southeast, and has started grading westerly on the extension of the branch from Maryfield to Lethbridge.

Construction trains are being run on the extension from North Battleford to Meota, and it is expected to have a further distance of about 75 miles completed this year.

Starting from Camrose, on the Vegreville-Calgary branch, a line is being built to Strathcona, upon which considerable grading has been done. It is expected to have everything ready for tracklaying this year. From Stettler a branch has been completed to Red Deer, where a station is being built. The Northern Construction Co. has a large outfit at work, grading westerly from Red Deer towards Rocky Mountain House, and the Brazeau River coalfields.

The grading gangs on the line from Edmonton to Athabasca Landing have reached the Tawattinawa River, and track has been laid to mileage 60. D. Campbell of the company's construction staff, says it is expected to have track laid to the Landing by the end of the year.

Owing to the wet weather in the early part of the season grading on the line from Onoway has not progressed as rapidly as was expected, but the work is now going on much faster. The substructure for a 3,000 ft. bridge, 70 ft. above highwater level, is being put in at the crossing of the Pembina River, to which point it is expected to have track laid this year. Grading is being gone on with north of the Pembina to the Athabasca River, the crossing of which is 140 miles from Edmonton. Engineers are in the field beyond this point locating the line to the Peace River.

A. Laidlaw, Spokane, Wash., who is interested in mining properties in Jasper Park, in a recent interview said, the C.N.R. has been graded and track laid to 40 miles west of Edson, and only 85 miles east of the Yellowhead Pass, to which point it is expected to have track laid this fall. The C.N.R. parallels the G.T. Pacific Ry. for many miles to the summit of the Rockies. The company is reported to have acquired about 1,500 acres of land on the McLeod River, just south of Edson, for divisional yards and terminals.

Canadian Northern Pacific Ry.—F. G. Holt, Executive Agent, C.N.R., returned to Vancouver, B.C., Aug. 6, after a trip of inspection over the line to Kamloops, to which point the work is in the hands of the contractors. Tracklaying was started at Port Kells, July 31, and was reported to have been completed to the Salmon River. A ballast pit has been opened near Port Kells, and the ballasting gang is working close behind the

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tracklayers. Grading has been completed to the Popkum Indian reserve, nine miles east of Chilliwack. The substructure for a swing span bridge is being built at Chilliwack. Grading gangs are at work as far as Hope, and a number of the other plants have been removed east of Hope and on nearly as far as Kamloops. The work between Hope and Kamloops is being gone on with as fast as possible, but owing to the fact that the B.C. Government insists that "only white men" can be employed on the work, the number of men is not so large as would have been the case if the contractors had been able to engage Asiatics.

The company has withdrawn its application to the Board of Railway Commissioners for permission to parallel the C.P.R. tracks on C.P.R. right-of-way along the Fraser river from Lytton to Cisco bridge, where the C.P.R. crosses the river to the west bank. At the hearing last year the application was opposed by the C.P.R. on the ground that the applicant had no status, as it was a provincial corporation, the C.N. Pacific Ry., and therefore had no authority to expropriate C.P.R. right-of-way. It was also urged that the building of a line lower down the canyon would be a menace, owing to the danger of the C.P.R. embankment becoming undermined. A special report on the routes was prepared by C. E. Cartwright, and an amended plan providing for two additional bridges across the Fraser River, proposed.

Winnipeg papers of Aug. 15 stated that a contract had been let to the Northern Construction Co. and the Cowan Construction Co., jointly, for the building of the section of the C.N.P.R. from Kamloops to the Yellowhead Pass, about 250 miles. The estimated cost of the work is placed at $10,000,000, and the contract is to be completed within two years. The dispatch added that A. R. Mann, President of the Northern Construction Co., had gone to Vancouver to arrange for the immediate starting of work from the Kamloops end.

The wharf at Port Mann was reported completed Aug. 14, and machinery is being installed in order to facilitate the handling of the construction material which is being delivered in large quantities. The tracks at present laid in the yard have been connected up with the Great Northern Ry. line, which facilitates work considerably. Considerable progress has been made with the clearing of the townsite.

Canadian North Eastern Ry.—Track was expected to be laid to the Red Cliff mine, 13.5 miles from Stewart, B.C., Aug. 31. (Aug., pg. 743.)

Duluth, Winnipeg and Pacific Railway Construction.

This line was projected from Duluth to Virginia, Minn., connecting there with the Duluth, Rainy Lake and Winnipeg Ry., which extends from Virginia to Rainy River, and is connected by a bridge over the river with the Canadian Northern Ry. at Fort Frances, Ont. The two railways in Minnesota, together with the International bridge, are controlled by the Canadian Northern Ry. interests, and the completed line will form, with the Canadian Northern Ry., the shortest route between Duluth and Winnipeg, and will also give a short and direct railway connection between Duluth and Port Arthur, Ont.

The terminal points are the same as those of the Duluth, Missabe and Northern Ry., the route unavoidably lying through pretty much the same country, but there is absolutely no paralleling. The Duluth, Missabe and Northern is an iron ore road with an enormous business, which it carries on over grades of 6-10 of 1% against the ore traffic and 2% in the opposite direction. It was felt that the last was too low a standard to be accepted on the new line, and after an exhaustive examination a route was adopted giving a grade of 1.15% out of Duluth for some 10 miles, and then flattening off to a standard of 3-10 against southbound and 6-10 against northbound traffic, for the remaining 65 miles. This portion is all on the elevated table land north of Lake Superior, and there is nothing in the construction out of the ordinary, the grading alternates between clay and gravel, cuttings and muskegs and two or three moderately bad sink holes are the only interesting features.

The 500 ft. lift out of Lake Superior to the plateau is nearly all on a steep and very broken rock side hill. It includes a 500 ft. tunnel and some very heavy rock work, aggregating 150,000 cubic yards in a distance of about eight miles, also two or three bits of permanent trestle. The entry to Duluth is all elevated and grade crossing of streets has been practically eliminated. The Canadian Northern Ry. owns its own yard and water terminals in West Duluth, but it is proposed to run over the Northern Pacific Ry. tracks into Duluth proper, and also via the Grassy Point bridge into Superior.

We are indebted to H. K. Wicksteed, B.A.Sc., M. Can. Soc. C.E., Chief Engineer of Surveys for Mackenzie, Mann and Co., Ltd., for the foregoing information.

We were advised by H. T. Hazen, Chief Engineer in charge of construction, Aug. 19, that the grading on the line between Duluth and Virginia had been completed, with the exception of the 500 ft. tunnel at Short Line Park, which was expected to be finished in a week thereafter. Track has been laid from Virginia to the tunnel, 67 miles, and about 20 miles of this has been ballasted. This work is being done by Foley, Welch and Stewart. The bridge work is progressing very favorably, the bridges over the St. Louis and Cloquet Rivers and the Duluth, Missabe and Northern Ry. having been completed and the bridge at the crossing of the Spirit Lake Transfer Ry. being under way. Contracts have been let and work started on the 10 stall engine houses and machine shops at Duluth and Virginia. The station buildings, section dwellings, etc., have been completed at Harney, Simar, Twig, Bartlett, Peary and Eveleth. The whole work should be finished by Nov. 1.

A Railway to Hudson Bay.

A contract is reported to have been let to J. D. McArthur, Winnipeg, for the building of the first section of the Dominion Government railway to Hudson Bay. This extends from the northern bank of the Saskatchewan River at Pas Mission, Sask., to Thicket Portage, about 185 miles. The construction of a bridge across the river at this point, the contract for which was let over a year ago, to Mackenzie, Mann and Co., Ltd., is already well advanced. This bridge will enable the contractors to get in their supplies, etc., over the Canadian Northern Ry. branch here, now terminating at Pas Mission. Construction is to be started Sept. 12, and the contract calls for the completion of the work in two years.

The route of the line, for the whole distance, whether Port Nelson or Fort Churchill is selected as the Bay terminus, was described on pg. 97 of our issue of Feb., 1910. The estimated cost of the two routes, as made by J. M. Armstrong, Chief Engineer, were appended to the description of the routes. (Aug., pg. 747.)

Dominion Atlantic Railway Bridge Construction.

The first work of importance to be started on the Dominion Atlantic Ry. since it has passed under the control of C.P.R. interests, is the reconstruction of the bridges. We are officially advised that the present structures are to be replaced by steel superstructures on concrete or cribwork substructures. It is contemplated at present to undertake the reconstruction of the bridges at Bear River, Little Joggins, Big Joggins, Moose River, Allen's Creek, and Shubenacadie River. The plans for these bridges have been approved by the Board of Railway Commissioners. Following are details as to the various structures:—

Bear River Bridge.—Existing bridge 1,660 ft. long, maximum height 82 ft., made up of four Howe truss deck spans of 150 ft. each, one similar span with concrete swing pier (all spans on concrete piers), balance of wooden trestle. Existing wooden spans to be replaced with steel spans, the trestle with three deck plate girders of 103 ft. each and one deck plate girder span of 85 ft., balance to be filled in with earthwork protected with rock filled crib work against the tidal waters. The new work includes the putting in of two new concrete piers and two concrete abutments.

Little Joggins.—Length 690 ft., maximum height 43 ft., a trestle bridge with an 80 ft. deck Howe truss swing span on concrete pier at centre. To be filled in to an opening spanned by a 40 ft. plate girder span. Filling to be protected against tidal waters by rock filled crib work.

Big Joggins.—Length, 970 ft., maximum height 45 ft., a trestle bridge with an 80 ft. deck Howe truss swing span at the centre. This span is to be replaced by a 120 ft. deck plate girder swing span; balance to be filled in with earth work protected with rock filled crib work.

Allen's Creek. — Existing structure 710 ft. long, maximum height 65 ft., made up of one through Howe truss span of 100 ft., balance wooden trestle. To be replaced with one 150 ft. through truss span of steel, and two 85 ft. through plate girder spans, the balance to be filled in with earth work protected from tidal waters by rock filled crib work. The new work includes the putting in of two abutments and two concrete piers.

Moose River.—Existing bridge 935 ft. long, maximum height 66 ft., made up of four Howe truss deck spans of 150 ft. each, one swing span of similar construction 150 ft. long, balance timber trestle. To be replaced with three steel deck lattice spans of 150 ft. each, one deck lattice swing span of 160 ft., three deck plate girder spans of 75 ft. each, and one deck plate girder span of 65 ft. The new work includes the building of two new abutments of concrete, one concrete pier, and the raising to an additional height of 20 ft. six of the existing concrete piers. A small amount of earth work will go in to complete the length of the bridge.

Shubenacadie River Bridge.—A short lift span is to be replaced, making a wider channel for boats. A 130 ft. swing span will be put in, necessitating the building of a pivot pier, one new abutment, and concrete extensions to an existing pier. It will be necessary also to remove one of the existing piers.

The Alberta Government has been granted permission to appeal to the Imperial Privy Council against the decision of the Supreme Court of Canada in the case of the Crown against the Alberta Ry. and Irrigation Co., concerning the maintenance of bridges over irrigation ditches.

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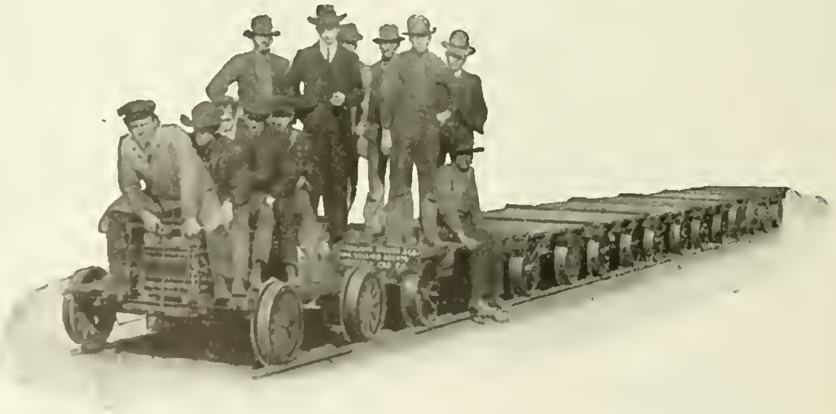

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Canadian Pacific Railway Construction Betterments, Etc.

Tobique Valley Ry.—The laying of the line from Perth to Plaster Rock, N.B., with heavier rails has been practically completed, and reballasting is in progress.

Orford Mountain Ry.—The operation of trains has been extended from Mansonville, Que., to North Troy, Vt., five miles, an extension which has lately been completed.

Windsor St. Station.—The stone facing of the additions to the Windsor St. Station is well on towards completion, and the concrete floors are being laid. Work in other departments is also being pushed forward. Adjoining the new boilerhouse will be a big chimney, 230 ft. high, of which the lower 90 ft. will be of concrete, and the top 140 ft. of brick.

Place Viger Improvements.—The wing of the Place Viger Hotel, extending over the new station annex, and reached by a bridge from the main building was opened Aug. 18. The wing contains 30 suites of apartments on either side of a balcony 225 ft. long.

Montreal-Quebec Jct. Second Track.—The Board of Railway Commissioners has authorized the operation of traffic over the second track of the gauntlet track across Bordeaux bridge, between Montreal and Quebec Jct.

Angus Shops Industrial Lines.—We are advised that plans have been filed for the building of an industrial spur at the east end of Montreal, extending from the crossing of the present main line near the crossing of the same with Forsyth St., through the town of Maisonneuve and as far as lot 394 in Longue Pointe parish, a distance of 4.85 miles. This line is referred to in press reports as being run from the Angus shops via Bout de l'Isle to the present Quebec line near L'Epiphanie, and having for its object the shortening of the line to Quebec.

Westmount.—The company has been ordered by the Board of Railway Commissioners to build a subway at Bethune Ave., Westmount, Que., within six months. The Dominion Railway Grade Crossing Fund will pay $5,000 towards the cost, the company and the city each providing one-half of the balance.

Western Junction near Montreal.—A Montreal dispatch of Aug. 22 says that the company is building near Western Jct, 10 miles out of Montreal, a new terminal headquarters, which consists of a 24-stall engine house, a machine shop, a turn-table, a coaling plant, a stores building, a rooming and lodging house, capable of accommodating 100 men, and a car-shunting and storage yard of 2,000 cars capacity. Eventually the new terminal will have a capacity of 4,000 cars. At the point chosen for the terminal the main line to Ottawa is joined by the tracks from the south across the Lachine bridge, which the company is at present double-tracking."

Sidings at Lachine, Que.—Application is being made to the Board of Railway Commissioners for authority to build a spur line from the Lachine Canal south bank branch to serve a number of industries.

Toronto Office Building.—The Toronto city council has at last authorized the issue of a permit for the erection of the office building at the corner of Yonge and King streets, Toronto. The building will be 15 stories high, and will be built as rapidly as possible. The site has been cleared for some months.

West Toronto Station.—The new passenger station is practically completed, and rapid progress is being made with the laying of the concrete platforms.

West Toronto Yard Extension.—Great changes are beginning to be apparent at the western end of the yards. A large area of land on either side of the track right on to Lambton is being levelled and laid with sidings. At Jane and Elizabeth streets subways are being put in. The contract for the concrete abutments for these subways has been let to Wells and Gray, Ltd., Toronto.

South Ontario Pacific Ry.—The Board of Railway Commissioners has approved of a revised location on this line from Guelph Jct. to Hamilton, so as to permit it to connect with the Toronto, Hamilton and Buffalo Ry. at Hamilton.

London Improvements.—Work was started, Aug. 10, by the Canadian Bridge Co., of Walkerville, Ont., on the erection of a new bridge across the Thames, west of London. It will consist of three spans of 150 ft. each. Work at the new roundhouse is being proceeded with, and work on the new coal shed is expected to be completed early in Sept. Grading for the additions to the yard is completed and track laying is in progress.

Port Arthur and the Company.—A vote was taken at Port Arthur, Ont., Aug. 17, for the purpose of confirming an agreement made May 29, between the company and the city council, settling various matters in dispute. Under the terms of the agreement the city grants exemption from taxation on all C.P.R. property in Port Arthur, except for school and local improvement purposes, no such exemption being recognized in the case of property leased by the railway to others; acceptance and execution of a lease of the water frontage from the C.P.R., for the use of the municipal docks; exemption from taxation of any property which the C.P.R. may convert into a park, land within three years, when required by the C.P.R. for the erection of a union passenger station for the C.P.R., C.N.R., and G.T.P.R., and the company agrees to withdraw all claims for damages arising out of the Current River washout in May, 1908; to build a passenger dock and freight shed at a cost of about $200,000; to grant an entry to the Grand Trunk Pacific Ry.; to provide a union passenger station for the three transcontinental railways, and to provide a park, on certain land provided. We were officially advised, Aug. 20, that the plan for these several works had not been definitely prepared.

Yard at Mission Island, Fort William.—Engineers have been engaged since Aug. 14 marking out the boundaries, etc., of the proposed new yards on Mission Island no. 1, Fort William. Connection will be made with the new yards by means of the bridge now about completed over the Kaministikwia River. It is stated that work will be started almost immediately with the grading for the tracks on the new yards.

Boissevain to Lauder.—Plans have been prepared for a 40 mile branch from Boissevain, northerly and westerly to Lauder, Man., and connecting there with the lines running from Souris through Nepinka, and with the branch line running westerly to Alida. While the plans have been prepared the route may be slightly changed before it is built.

Virden to Macauley, Man. — The branch line from Virden, now terminating at Three Creeks, is being extended to Macauley, Man., about 30 miles, where it will join the Pheasant Hills Branch from Kirkella. The contractor is P. Lamb, Winnipeg.

Winnipeg Hotel and Station.—Plans are under consideration for the enlargement of the hotel and station building. These include the addition of two stories to a wing of the station; a subway beneath the tracks to connect with a four-story building, north of the tracks; a subway beneath Main St. subway, to connect with a new building on the west side of Main St.; a new first-class waiting-room for travellers, on the ground floor of the Royal Alexandra annex. The plans for these works are not yet definitely settled.

Winnipeg Subways.—The contract for building a subway under the C.P.R. tracks at Broad St. has been let to the Parsons Construction Co. The city is contributing $120,000 towards the cost.

A bylaw is to be voted on in Dec. to provide $200,000 for the building of a subway under the C.P.R. tracks at Princess St.

Station Buildings, Manitoba Division.—The Brandon Construction Co. has made considerable progress with the demolishing of the station at Brandon. The company will also build the new station. The contract price is about $60,000, and the work is to be finished in Feb., 1912. In connection with this work the company is laying out a new freight delivery yard.

Tenders are under consideration for the building of new stations at Broadview and Souris, Man.

Weyburn-Forward Branch.—An extension of this line from Forward to Ogema, Sask., was opened for traffic Aug. 15. The branch is being further extended and it is intended that it will ultimately connect up with the company's lines at Lethbridge, Alta.

Lanigan-Humbolt Line.—Press reports state that engineers are locating a line from Lanigan, via Humbolt, to near Rosthern, where a junction will be made with the line projected from near Sutherland to Prince Albert, Sask.

Regina, Sask.—In connection with the erection of the union station in Regina, it is said that the track in the yards will be rearranged, and that the yard itself will be largely added to. Plans for the new trackage system are said to have been prepared.

North Portal, Sask.—The Board of Railway Commissioners has authorized the building of an additional track northeast of the present main line along the International boundary at North Portal, Sask.

Branches from Wilkie.—Considerable progress has been made on the three branch lines under construction from Wilkie, Sask. Grading has been completed southerly to Anglia on one branch and tracklaying was started Aug. 1. Fourteen miles of grading has been completed in the direction of Kerrobert on the second branch, and the work on the branch northerly into the Cutknife district is being rushed. Survey parties are in the field beyond the end of the location on the Cutknife branch, and are reported to have got beyond Vermillion, Alta., working in the direction of Peace River.

Moose Jaw-Lacombe Line.—Two of the piers for the big bridge across the Saskatchewan River at Outlook, Sask., on this line have been completed, and work was started, Aug. 8, in filling up the foundations for two other piers.

Medicine Hat to Calgary.—The Southern Alberta Land Co. states that it has been informed by Sir William Whyte that it is the C.P.R.'s intention to start work this year on a new line from Medicine Hat to Calgary, Alta. It is said that the line will follow the river for about 50 miles, and then proceed across country through the irrigation belt, and joining up with the main line near Shepherd.

Irricana to Standard, Alta.—The new line extending from Irricana to Standard, Alta., 36.7 miles, in the company's irrigated lands, was opened for traffic Aug. 1. It runs easterly from the Langdon-Acme branch.

Calgary Station—Tenders are under consideration for the building of a west

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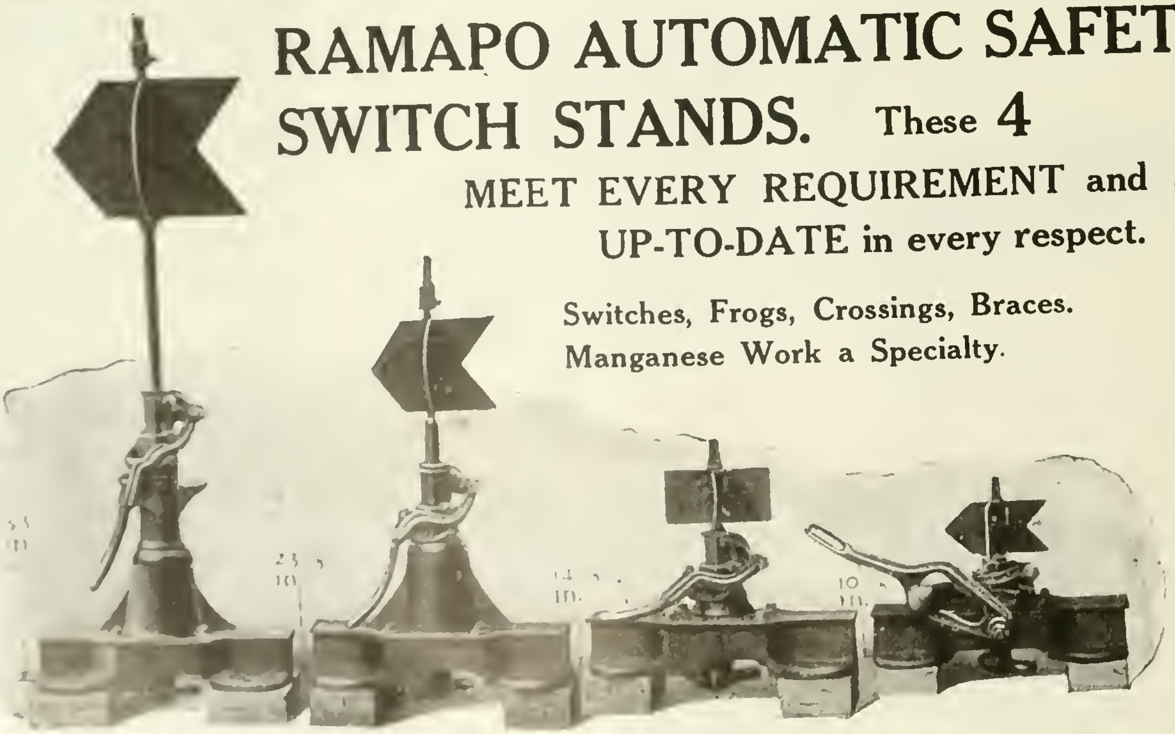

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wing and an addition to the present east wing of the station at Calgary, Alta.

Western Shops.—F. W. Peters, Assistant to the Vice President, in an interview at Calgary, Alta., Aug. 17, said nothing had been settled at that date about the proposed new shops in Alberta, which Calgary and several other places are anxious to have located within their boundaries.

Western Hotels.—The excavation for the foundation for the C.P.R. hotel at Calgary, Alta., was started Aug. 10. The Ross Cartage Co. was given the contract for the work, which also includes the excavation for the foundation of the west wing of the station. The contract for the foundations and superstructure is expected to be let at an early date.

F. S. Swales, London, Eng., in company with W. S. Painter, Chief Architect, C.P.R., is visiting Canada in connection with the company's plans to increase the accommodation at its hotels in the Rocky Mountains, and to build additions to the hotels at Vancouver and Victoria. It is proposed to start construction of the main section of the Hotel Vancouver, at an early date, and to begin work for the addition of a wing to the hotel at Victoria, within a few weeks. Messrs. Swales and Painter were in Vancouver Aug. 5, and in Victoria Aug. 8, looking over the present buildings and the sites for the extensions.

Edmonton to International Boundary.—Press reports state that surveys are being made for the building of a line from near Edmonton, Alta., southerly and easterly, via Swift Current to the International boundary, about 100 miles west of North Portal, where it will meet a line to be built from the Minneapolis, St. Paul and Sault Ste. Marie Ry., northerly from the big bend in the Missouri River.

While this is a press report, the C.P.R. has under construction branches running northeast and southwest from Swift Current.

Strathcona-Edmonton Bridge.—It is expected that the concrete work for the high level bridge across the Saskatchewan River between Strathcona and Edmonton, Alta., will be completed in Sept. A spur track has been laid to the bridge site, for bringing in the steel for the superstructure. It will take about a year to erect the steel and complete the connecting lines.

Three Forks to Lucky Jim Mine.—A contract has been let to W. P. Tierney, Nelson, B.C., for building a spur line from Three Forks to the Lucky Jim Mine, at Bear Lake, B.C., about five miles. Work was reported to have been started Aug. 12, and it is expected to have it completed Dec. 31.

Bridges, Mission to Vancouver.—A contract is reported to have been let to Mueller and Taylor, Vancouver, for the building of 13 small concrete bridges and bridge abutments on the line between Mission Jct. and New Westminster, B.C. The bridges are to be built of sufficient width to carry a double track line.

Vancouver Improvements.—An agreement has been reached between the Coquitlam council and the C.P.R. in regard to the establishment of railway yards in the neighborhood of Pitt River. The agreement will be submitted to the Coquitlam voters for their approval as soon as the necessary bylaw can be prepared. The agreement is that the C.P.R. must expend $250,000 within the next two years on the construction of yards, roundhouses, machine shops and all other equipment that goes with them, and that the work must be started within 30 days after the ratification of the agreement by the Coquitlam electorate. In return for this the company is granted a flat tax rate of $1,530 on their land for a period of 10 years, exclusive of school taxes, which they must pay.

Esquimalt and Nanaimo Ry.—Tenders are under consideration for the erection of a roundhouse and station building at Alberni, the terminus of the branch line now being completed. A station and chalet are being built at Cameron Lake, and it is expected they will be completed by Nov. 1. The ballasting gang are working a few miles beyond Cameron Lake, towards Alberni, and it is expected that the ballasting will be completed by Oct. 1.

Work was started Aug. 1 on the Duncan-Cowichan Lake branch line, over 300 men being employed. (Aug., pg. 739.)

◆

Great Northern Ry. Lines in Canada.

Midland Great Northern Ry.—The Winnipeg city council has approved of a temporary alteration of the route of the line in the city in the vicinity of the crossing of the Assiniboine River and the erection of a timber bridge. The application was made on account of difficulty in procuring material for a steel bridge. The route as originally proposed is to be followed when the time arrives for the grade separation provided for in the agreement.

A permit was issued Aug. 3, for the building of freight sheds and an office building on Ross Ave., between Isabel and Sherbrooke streets. The building will be 400 by 50 ft., and the estimated cost is $45,000. The contract has been let to the J. McDiarmid Co., Winnipeg, the work to be completed by the end of the year.

Satisfactory progress is reported to have been made with the grading of the line into the station, and the building of the subways.

L. C. Gillman was in Winnipeg, Aug. 17, inspecting the work in progress on this line. About 60% of the grading is completed, and considerable progress has been made with the erection of the freight shed. It is expected that the line will be opened for traffic Dec. 31.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—Tracklaying and bridge building have been started on the section of this line from Princeton northwesterly to Tulameen, B.C. The grading was completed in 1910 by A. Guthrie and Co., which firm, it is reported, has been given a contract for the grading of the line from Tulameen to the Hope Mountains. The distance on which track is to be laid is about 14 miles. There are six bridges on this mileage, and the work of erecting these has been given to A. Guthrie and Co.

West of the Hope Mountains the line is being built from Abbotsford to Chilliwack, and the grading to this latter point is expected to be completed by Sept. 30. Near Chilliwack the line will connect with the Canadian Northern Pacific Ry., and this company's line will be run over to near Hope Summit, from which point a separate route will be followed to a junction with the line being built westerly, which has now reached Tulameen.

Two survey parties were reported to be in the field Aug. 10, working between Hope and the Summit, in an endeavor to find an easier route between these two points than any hitherto surveyed. W. H. Burns and —. Butler are in charge of the parties, and —. Amburn is superintending the work. The best gradient hitherto secured between Hope and the Summit is 2½%, while between the Summit and Tulameen, the gradient is just slightly over 1%.

Vancouver Terminals.—The Vancouver terminals of the G.N.R. lines are under construction at False Creek. The area acquired for the construction of these terminals includes 160 acres on False Creek, and 100 acres abutting on the creek. A union station, for the use of the G.N.R., the Canadian Northern, and the G.T. Pacific Ry. is to be erected on Park Lane, about 100 ft. from Westminster Ave. In close proximity will be built freight houses, roundhouse, freight yards and car yards. These buildings will be erected on the north side of False Creek, adjoining the area reserved for the city. Across this reservation will be located the storage tracks. Entrance will be obtained to the station building over the land which is to be reclaimed. It will take about 3,500,000 cubic yards of material to fill in the flats, and of this about 1,500,000 cubic yards has already been dumped in from the cut on Fifth Ave. The old cut nearby is to be widened and deepened, and Park Lane will be increased from 40 ft. to 100 ft. in width. The dock, which is under construction, will be 800 by 148 ft., and on this will be built a warehouse 100 ft. wide and the full length of the dock. Tracks have been laid connecting this dock with the terminal site on False Creek.

M. J. Costello, General Traffic Manager, G.N.R., was in Vancouver, Aug. 10, and in an interview stated that the final plans for the terminals were being passed upon, and the work now being done was in preparation for the carrying out of the whole scheme. Three docks are to be built between the present city wharf and the B.C. Sugar Refinery, of which one will be built at once, and the others when required. The total expenditure to be made for terminal purposes in Vancouver is estimated at nearly $10,000,000. (Aug., pg. 729.)

◆

Carillon and Grenville Railway acquired by Mackenzie Mann & Co.

Reference was made in our June issue, pg. 501, to press reports which stated that interests connected with Mackenzie, Mann and Co. had acquired the Carillon and Grenville Ry. We are now officially advised that these interests have purchased the railway, and are now in possession of the property. The line extends from Carillon to Grenville, Que., 13 miles, connecting at either end with the Ottawa River Navigation Company's steamers. It has a gauge of 5½ ft. and is the only broad gauge line remaining in Canada. It was built in the Ottawa River Navigation Co.'s interests, and was operated by that company during the season of navigation only. The gauge of the line will probably be changed to standard, and a portion of it used as a part of the main line of the Canadian Northern Ry. between Montreal and Hawkesbury, and consequently as a part of the company's main transcontinental line. It may, however, be found necessary to build a new line, in which event a portion of the present right of way may be used.

The new owners of the C. and G.R. have not acquired the charter rights of the Carillon and Grenville Ry. Co., but only the physical property of the railway between Carillon and Grenville, nor have they bought the Ottawa River Navigation Co.

According to the prospectus of the Central Ry. Co. of Canada, referred to on another page of this issue, the C. and G. Ry. is one of the properties said to have been acquired by that company. This is a matter respecting which an explanation will be awaited with interest.

◆

That the C.P.R. was preparing to ship coal in large quantities from the B.C. coal fields to the U.S. is a newspaper report, which we are officially advised is without foundation.

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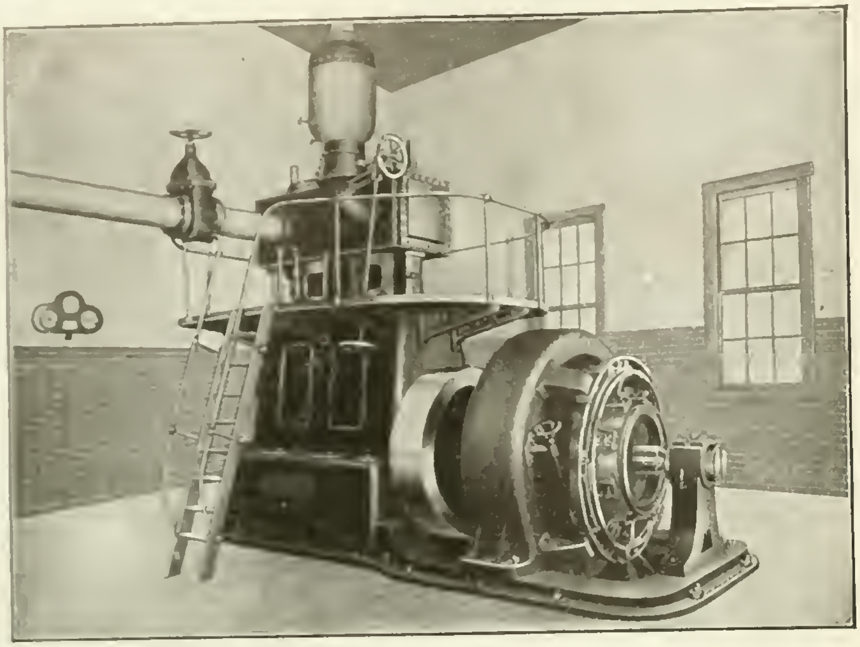

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The Central Railway Co. of Canada's Prospectus.

There has been placed on the London, Eng., market, through Parr's Bank, Ltd., an issue of £1,000,000 of first mortgage 5% bonds of the Central Ry. Co. of Canada. Of this issue £400,000 was stated to have been taken up in Canada and in Paris, France, the remaining £600,000 being offered at 95%. The issue is to be secured by a first mortgage on about 164 miles of railway, comprising a line of 110 miles from Montreal to Ottawa, and 54 miles of branch lines, which are at present partly built, together with the equipment, and a land grant of about 1,300,000 acres of land in the valley of the Ottawa River, to which the company will be entitled "under 19 and 20 Vict., chap. 112, and 24 Vict., chap. 80. The proceeds of the bond issue will be utilized for the purpose of paying the balance of about £40,000 due on the purchase of the Ottawa River Navigation Co. and the Carillon and Grenville Ry., owned by it; the payments to C. J. Wills and Son, under their contract for building the line from Montreal to Ottawa, the provision of rolling stock, the defraying of legal and other expenses, and the balance to making surveys, etc., for extensions. The officers and directors are: President, Hon. A. Campbell, Toronto; Vice President, Hon. W. Owens, Montreal; other directors, Hon. A. Desjardine, E. G. Penny, H. W. Raphael, F. S. McLennan, Montreal; W. F. Tye, Toronto; J. A. C. Ethier, K.C., St. Scholastique, Que.; Sir R. Gresley, Burton-on-Trent, Staffordshire, Eng.

Accompanying the prospectus is a lengthy statement dated May 3, over the signature of Hon. W. Owens, the Vice President, and a map showing the district which will be served by the projected railway. This statement sets out that the main line will extend from Montreal to Midland, on Georgian Bay, 344 miles, and that legislative authority has been obtained to extend the line from Midland to St. Thomas, Ont., and other points, and to make connections, not only with Canadian railways, but with U.S. railways at the International boundary. The total length of main line and branches is stated as 660 miles. The present issue will provide for the completion of 164 miles of line, viz., the main line from Montreal to Ottawa, and two branches. The main line, Senator Owens says, "includes the Carillon and Grenville Ry., 13 miles, constructed and in operation," and the main line of the Central Counties Ry. from Hawkesbury to Ottawa; while the branch lines include the St. Agathe branch, 47 miles, "of which the seven miles already constructed are to be brought to standard, and 13 miles are partly constructed." The second branch to be built will be one of seven miles, to Ste. Rose. Out of the proceeds of the bond issue the company proposes to acquire the Carillon and Grenville Ry., the Central Counties Ry., the Ottawa Valley Ry. and the Ste. Agathe branch, as well as the Ottawa River Navigation Co.

The plans for the railway have been reported upon by J. M. Shanly, C.E., Montreal, and an agreement has been made for connection with the projected terminals in Montreal of the Montreal Central Terminal Co.

A contract has been entered into with C. J. Wills and Sons, 28 Victoria St., Westminster, London, Eng., for the construction of the line from Montreal to Midland, and 37 miles of branch lines, by Dec. 31, 1913, the section from Montreal to Ottawa to be completed Nov. 1, 1912. The contract provides for a high standard of construction, with low gradients, light curvature, bridges and culverts of stone, concrete and steel, and 80 lb. rails. We are advised by the representative of the contractors in Canada that it is more than likely that a portion of the work will be sublet, but that no instructions have been received to go ahead with the work. A contract, states the prospectus, has been entered into for the construction of the branch from St. Andrews to Ste. Agathe, the contract price being $21,400 a mile.

The Ottawa River Ry. was originally incorporated by the Dominion Parliament in 1903, to build a railway from near Grenville to Montreal, with branches from St. Andrews to St. Come, up the River Rouge to Lake Rouge, and to connect with the Canada Atlantic Ry. near Hawkesbury, Ont. H. W. Rapheal and J. A. C. Ethier are the only two of the original directors who are now associated with the company. It obtained power to build additional lines in succeeding years, and in 1905 was authorized to change its name to the Central Ry. Co. of Canada, and was given power to amalgamate with various other railways. In 1904, the company obtained an act of incorporation from the Ontario Legislature as the Ottawa River Ry., and extensions of time have been granted by both the Dominion Parliament and the Ontario Legislature to both companies.

The Ottawa Valley Ry. was incorporated by the Dominion Parliament in 1892, to build a railway from St. Andrews to Carillon, and from Grenville to near Calumet, on the C.P.R., and in 1894 all the rights of this company were authorized to be transferred under an agreement to the Atlantic and Lake Superior Ry.

The Prescott County Ry. was incorporated by the Dominion Parliament in 1897. A further act was passed in 1889 changing its name to the Central Counties Ry., and amending acts were passed from time to time with respect to extensions of time for construction, arrangement of bond issue, etc. The company built a line from Glen Robertson to Hawkesbury, and from South Indian to Rockland, Ont., together 38.49 miles, which lines are leased to the Canada Atlantic Ry., the company maintaining a separate existence, and having power to build certain other lines.

The Carillon and Grenville Ry., to which the prospectus says the 1,300,000 acre land grant attaches, was incorporated by the pre-Confederation Parliament in 1840-41, and the acts quoted as covering the land grant were passed in 1857 and 1861 respectively. The railway was built under a subsidy granted by the Dominion Parliament in 1894.

In connection with the statement in the prospectus and in the letter of Senator Owens, Vice President, that among other properties acquired is that of the Carillon and Grenville, 13 miles constructed and in operation, and that this line is to form part of the company's main line from Montreal to Ottawa, it should be noted that the physical property of the C. and G. Ry. has been sold by the Ottawa River Navigation to interests associated with Mackenzie, Mann and Co., but we are advised that this sale will be contested. With respect to the land grant of 1,300,000 acres, which is mentioned as an asset, Sir Richard W. Scott, ex-Secretary of State, who was one of the directors of the original company, is quoted as saying that the grant was made in 1854 for the building of a railway between Quebec and Lake Huron. In 1861 the Canada Central Ry. was formed to build a line between Ottawa and Carleton Place as a part of the project, but it was found impossible to float the bonds for construction. The 1854 charter was allowed to lapse, but the Canada Central Ry. charter was kept alive and the line was built in the seventies, and is now part of the C.P.R. The Ontario Government maintained that the land grant had lapsed at Confederation, and after an action in the courts a settlement was effected, and an act was passed by the Dominion Parliament in 1874, confirming the settlement. Sir Richard adds:—"The prospectus, said to have been issued in England, claiming an asset of 1,300,000 acres of Ontario land, is not based in legal substance."

The Dominion Government started the policy of voting cash subsidies in aid of the building of railways in the session of 1882, the first payments being made in the financial year 1883-84. In J. E. H. Currier's Index to Railway Legislation, 1867 to 1905, is the following statement: "There have to be added the following exceptional subsidies," and then appears: "The Canada Central Ry. paid between 1878-83, $1,525,250." As the company built 120 miles of line, which now forms part of the C.P.R. system, the subsidies received amounted to $12,700 a mile.

The solicitor of the Central Ry. Co. of Canada advises us that the land grant referred to in the prospectus is intact, and that the company is acting upon the advice of eminent counsel in Canada and England.

Railway Entrance to Ottawa

The question of a general entrance into Ottawa for all railways was dealt with Aug. 18, at a conference between a special committee of the city council, N. Cauchon representing D. McNicoll, Vice President C.P.R., who was unable to attend owing to indisposition; and Sir Donald Mann, Vice President, and W. H. Moore, Secretary, Canadian Northern Ry. The plan proposed over a year ago for bringing in the railways by a tunnel along a portion of the Rideau Canal, the closing of which would be necessary, was discussed at length, and it is said that while the city approved of the proposed tunnel approach, the abandonment of a portion of the Rideau Canal is not looked upon with any degree of favor. The canal might be narrowed, and a portion of the driveway reserve might be utilized for the tunnel, giving room for six tracks. The tunnel would extend from opposite the Central Station across the city to the Union Station.

The G.T.R. is not favorable to the proposition, and will probably oppose it when application is made to the Dominion Government for the approval of the plans.

Transportation Conventions in 1911.

Sept. 12-14.—Society of Railway Financial Officers, St. Paul, Minn.

Sept. 12-15.—Master Car and Locomotive Painters' Association of United States and Canada, Atlantic City, N.J.

Sept. 12-15.—Roadmasters' and Maintenance of Way Association of America, St. Louis, Mo.

Sept. 19.—American Association of General Passenger and Ticket Agents, St. Paul, Minn.

Oct. 9-13.—American Electric Railway Association, Atlantic City, N.J.

Oct. 10.—Railway Signal Association, Colorado Spring, Col.

Oct. 17-19. — American Railway Bridge and Building Association, St. Louis, Mo.

Oct. 19-21.—American Association of Dining Car Superintendents, Cincinnati, O.

Nov. 6-10.—Association of Railway Electrical Engineers, Chicago, Ill.

Nov. 15.—American Railway Association, Chicago, Ill.

Nov. 17-18.—American Association of Freight Traffic Officers, Cincinnati, O.

Dec. 12-13.—Association of Transportation and Car Accounting Officers, Louisville, Ky.

Dec. 29-30.—American Association of Passenger Agents, Jacksonville, Fla.

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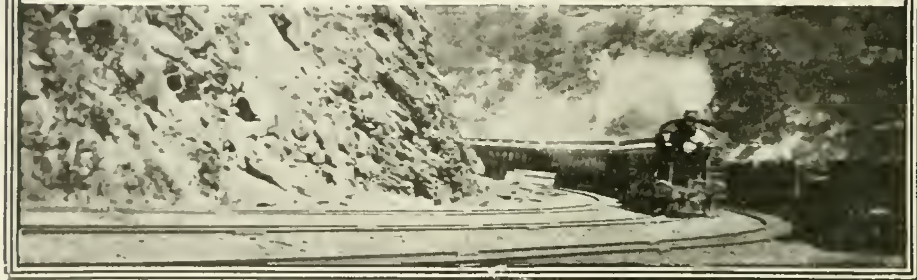

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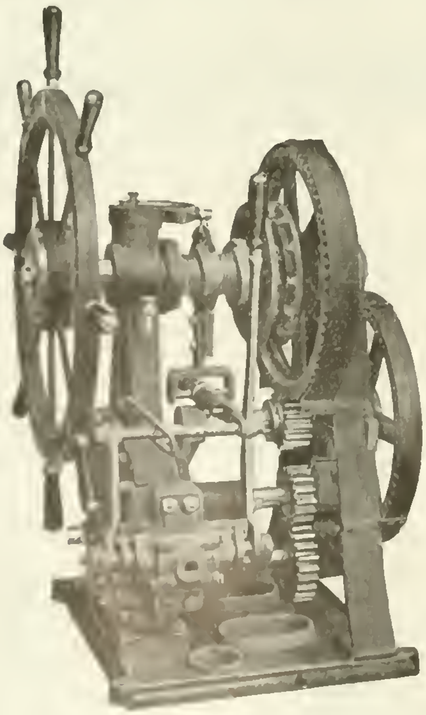

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Toronto, Canada, September, 1911.

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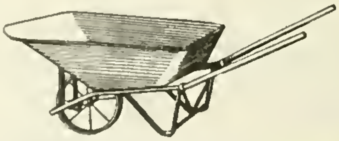

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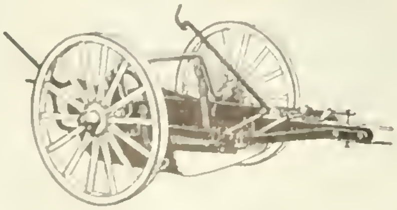
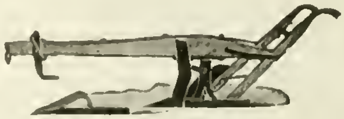




RAILWAY DEVELOPMENT.

Projected Lines, Surveys, Construction, Betterments, Etc.

Alberta Central Ry.—The Board of Railway Commissioners has extended the time for the completion of the line to Rocky Mountain House, Alta.

Grading outfits began reaching Red Deer, July 25, and were rushed out along the route, all available men being sent out. The contractors, D. F. McArthur and Co., have orders to push work as fast as possible, and it is hoped that the first 100 miles of the line will be completed this year. The company's forces had practically completed the grading on the first 40 miles out of Red Deer before this contract was let. Perhaps the most difficult piece of work on the contract is the draining of Burnt Lake, a shallow lake on the right of way. (Aug., pg. 757.)

Alberta Pacific Ry.—A local correspondent, referring to the projected railway building in the vicinity of Pincher Creek, Alta., by this company (formerly the Pincher Creek, Cardston and Montana Ry.), says:—"The time has gone past when the Alberta Pacific people could have demonstrated to the neighborhoods through which its proposed route would run that their intentions were genuine from the go-in. They have had about a two years' innings at the job, and are not much further ahead than when they started. Upwards of $15,000 has been expended by them on preliminary work."

Lethbridge papers, Aug. 16, state that W. Skouson, a Montana contractor, has brought in a large grading outfit and is preparing to start work at once at Pincher Creek, grading towards the International boundary. Additional men are being hired locally to reinforce the gang which brought in the plant.

Algoma Central and Hudson Bay Ry.—A contract has been let to the Superior Construction Co., of which T. J. Kennedy is President, to build an extension of the line from Hobon, on the C.P.R. transcontinental line, to a junction with the National Transcontinental Ry., 142 miles west of Cochrane, Ont., a distance of about 101 miles. The estimated cost of the work is placed at between $3,000,000 and $4,000,000. This extension will run well into the clay belt of Northern Ontario, and will carry the company's line to within about 150 miles from Hudson Bay. The Superior Construction Co., which is at present building the Crean Hill-Whitefish Bay extension of the Algoma Eastern Ry., proposes to sublet the contract in sections. Its headquarters are at Espanola, Ont.

Tenders are being asked for the building of a new station at Sault Ste. Marie, Ont., estimated to cost $65,000.

We are advised that the estimated cost of the grading, tracklaying and ballasting on the line from Hobon to the National Transcontinental Ry., for which the Superior Construction Co., Sault Ste. Marie, Ont., has the contract, is $1,670,000, and that the cost of the extension complete for operation will approximate $3,000,000.

The Board of Railway Commissioners has approved of location plans of the Josephine branch at mileage 17.08 from Michipicoten, to the Magpie mine, 9.16 miles. This branch has already been built. (Aug., pg. 733.)

Atlantic and Lake Superior Ry.—Some confusion has arisen in regard to the name of this and allied companies. The old Atlantic and Lake Superior Railway from Matapedia to New Carlisle, 98 miles, is now known as the Quebec Oriental Railway. It connects at the latter point with the Atlantic, Quebec and Western Railway, which is already open to Grand River, 54 miles and is also under construction beyond that point to Gaspe. C. R. Scoles is General Manager of both lines, but they are entirely separate in their organization though a joint through train service is run between Matapedia and Grand River.

Mr. Scoles is also contractor for the completion of the Atlantic, Quebec and Western Railway to Gaspe, which we are officially advised will be an accomplished fact by the end of this year. (See Atlantic, Quebec and Western Ry., Aug., pg. 733.)

Brandon Transfer Ry.—Track has been laid on the line connecting the C.P.R., the C.N.R. tracks and those of the Brandon, Saskatchewan and Hudson Bay Ry. in Brandon, Man., and ballasting is being done. The earthwork is fairly heavy, there being a number of cuts and fills along the route. Victoria Ave. and Princess Ave. are crossed on the level. It was expected to have the line in operation by Aug. 20. (Aug., pg. 733.)

British Columbia Ry. and Development Co.—An action has been entered in New York by the assignee of M. Van Gender to recover $80,000 from the British Columbia Ry. and Development Co., and the promoters of the company, Jean Wolkenstein and R. Conklin, the writ alleging a conspiracy to defraud.

The B.C.R. and D. Co., in its advertising literature stated that it had acquired the British Columbia and Alaska Ry. Co.'s charter. A number of the directors of the B.C.R. and D. Co. are also provisional directors of the B.C. and Dawson Ry. (See B.C. and Dawson Ry., July, pg. 645, and B.C. and Alaska Ry., April, pg. 319.)

Burrard Inlet-Tunnel and Bridge Co.—See Vancouver, Westminster and Yukon Ry.

Caribou, Barkerville and Willow River Ry.—A survey party is reported to be running preliminary lines for this projected railway. The route as laid down is from Barkerville, almost directly north to the mouth of the Willow river, about 35 miles east of Fort George, where it connects with the main line of the G.T.P.R. It taps the Hepburn coal properties on Bear River, besides giving access to the rich placer fields north of Barkerville. W. H. Dunphy, one of the provisional directors, is quoted as having stated that construction will be started next spring. (Aug., pg. 733.)

Chicago, Milwaukee and St. Paul Ry., Chicago, Milwaukee and Puget Sound Ry.—Press reports state that plans are under construction for the building of a line from Fargo, N.D., to Winnipeg, Man., and that A. J. Earling, the President of the C.M. and St. P. Ry., on his recent visit to Canada, was looking into the matter. The C.M. and St. P.R. is associated with certain charters for railway construction in Alberta and British Columbia, and is said to have secured options on considerable property in the vicinity of Lipton St., just south of Portage Ave., Winnipeg, for terminal purposes. The Lipton St. property will, it is said, be utilized for freight terminals and running rights will be sought into the Fort Garry union station for passenger traffic.

The C.M. and P.S. Ry., the company building the extension of the C.M. and St. P. Ry., to the Pacific coast, is reported to have completed preliminary surveys for a line from Moncton, Wash., to Vancouver, B.C. A. W. Nase, the company's commercial agent in British Columbia, is quoted as having stated that when the main line is completed into Everett, Wash., a branch will be built from Seattle into Vancouver as quickly as possible. (July, pg. 645.)

The Crow's Nest and Northern Ry. Co. was incorporated by the British Columbia Legislature in 1908 to build a railway from the C.P.R. Crowsnest Pass branch to the summit near Michie Creek, and at the last session of the Legislature the company was granted an extension of time for construction. A meeting of shareholders was held at Crowsnest, B.C., August 8, to elect directors, and also, press reports state, to make arrangements for building the line. (April, pg. 319.)

Dominion Atlantic Ry.—The Board of Railway Commissioners has authorized the rebuilding of the bridges at Big Joggins, and Allans Creek, and those over the Shubenacadie and Bear rivers, N.S.

P. Gifkins, General Manager, in an interview at St. John, N.B., Aug. 15, is reported as saying that heavier rails are being laid on the line, that the rolling stock is being increased, and that the possibility of a big car ferry across the bay to handle freight traffic is being seriously considered. The great difference between high and low water is one of the difficulties in the way of establishing such a service, but it is quite probable some plan for overcoming it will be evolved. (May, pg. 409.)

Essex Terminal Ry.—The Board of Railway Commissioners has authorized a deviation of the line in Windsor, Ont., crossing, Tecumseh road, Peltier St., Crawford and Wellington avenues. (July, pg. 645.)

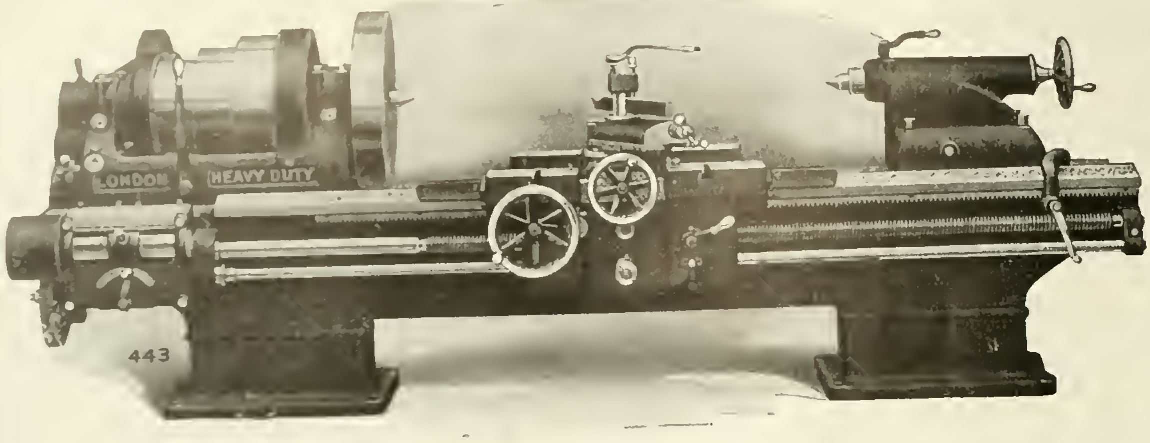
Grouse Mountain Scenic Incline Ry.—The preliminary work on the first section of this projected railway at Vancouver, B.C., was reported to have been completed Aug. 11. Engineers are now laying out the second section of the work, which includes the precipitous portion of the ascent of the mountain, and is said to embrace a number of interesting engineering features. (July, pg. 645.)

High River and Hudson Bay Ry.—High River, Saskatchewan and Hudson Bay Ry.—The first title is that given by the Alberta Legislature, and the second is that given by the Dominion Parliament to the same interests for building a railway from the International boundary in Alberta to Hudson Bay, the provincial charter covering only the Alberta section of the line. The estimated length of this section is 250 miles, while the extension through Saskatchewan covered by the Dominion charter is estimated at 425 miles, making 675 miles of main line. It is estimated that there will also be about 200 miles of branches. The main line, it is proposed, will start at the western boundary of Alberta, connecting there with United States lines, and will run as straight as possible to Pas Mission, Sask., where connection will be made with the projected Dominion Government line to Hudson Bay. We are advised that a consulting engineer has been appointed, and that it is proposed to have location surveys completed within as short a time as possible. The surveys will probably not be started until the fall. If the company's plans are realized it is hoped to begin construction within a couple of years and to have the line completed by the time the Government line is completed. By this projected route Portland, Ore., and Tacoma, Wash., would be brought within 1,750 miles of Port Nelson, on Hudson Bay.

Following is the executive of the company: Chairman, C. C. Short; Treasurer, H. N. Sheppard; Secretary, F. Crandell; other members, Dr. T. E. Le Claire and W. P. Walker. With the exception of Messrs. Crandell and Walker, who live at Calgary, the members are at High River, Alta. (June, pg. 505.)

Intercolonial Ry.—Tenders are under consideration for the supply of ties and switch ties.

Following the completion of the inspection of the line by the members of



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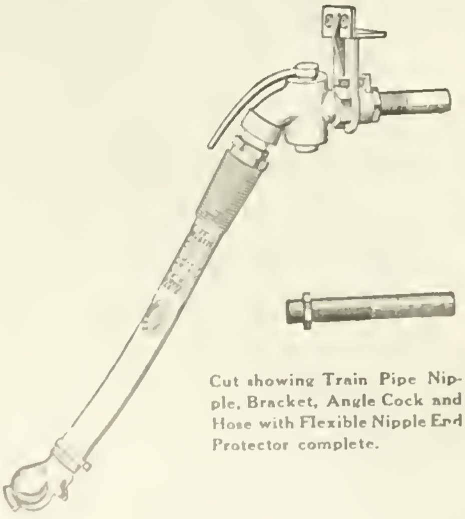

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the Managing Board, it was announced that it had been decided to recommend the carrying out of considerable improvements. These will include the building of a second track at leading points, and particularly the stretch between Chaudiere Jct. and Levis, Que., and the building of subways at various points, particularly in St. Flavie, Que., and in Moncton, N.B. The details of the recommendations will probably be announced in the near future.

The new wing which is being built to the general offices at Moncton, N.B., will be three stories high, with a basement, its outside dimensions being 139 by 57 ft. The building will conform in style to the main block, and is to be of concrete to grade; rockfaced ashlar masonry to the first floor, and the remainder of pressed brick with cut stone sills, lintels, etc. In the basement there will be fire-proof rooms for storing documents, plans, etc. The ground floor will be given over to the car mileage department, the second is the engineering department, and the accounting and auditing department, which now occupies the third floor of the present building, will be given the third floor in the new one. The rooms to be vacated on the first and second floors of the present building will be given to the management and to the traffic department, respectively. The addition is expected to be completed by Mar. 31, 1912.

A contract is reported to have been given to H. Ryan and Son for the erection of a new station at Fredericton, N.B., to cost about $20,000. Tenders are under consideration for the building of a stone passenger station at Truro, N.S

Tenders will be received by the Department of Railways for the building of the following lines of railway:—From Guysboro to Country Harbor Crossroads, and from the latter point to Deepwater, Country Harbor, and from Dartmouth to Deans, all in Nova Scotia. (Aug., pg. 733.)

Michigan Central Rd.—It is expected that a contract will be let early in Nov. for the erection of the proposed new station in Detroit, Mich. The building, which will be 14 stories high, will have its main entrance at the northeast corner of the intersection of Dalzell and Sixteenth streets, and will be laid out on the lines of the New York Central and Hudson River Rd. station in New York city. The details of the plans have not been fully worked out. The building will cost about $3,000,000, and will be completed in about three years. (Aug., pg. 753.)

Midland Continental Ry.—The company behind this ambitious proposal for the building of a railway from Winnipeg to the Gulf of Mexico, as one section of a great north and south railway, is reported to have organized the Midland Construction Co. The officers of this latter organization include F. K. Bull, Racine, Wis., as President, with C. V. Weston, President of the South Side Elevated Rd., Chicago, and H. S. Duncombe, Vice President, Colorado Midland Ry., as engineers. Reports further state that the company has secured control of the route of an old line extending from Norfolk, Neb., northward to the Missouri River, and on to Yankton, S.D., about 100 miles. The company is reported to have completed the grading for the line between Edgely and Jamestown, N.D. These are the main features of recent reports, and are given as such, merely because of the proposal to connect up with Winnipeg, Man. (Dec., 1910, pg. 1015.)

New Brunswick Coal and Ry. Co.—After having been closed for some time, pending the erection of a concrete bridge at Washademoak, N.B., the old Central Ry. of N.B. section of this line was reopened for traffic, August 1. The new bridge was built under the superintendence of T. Sefton, formerly bridge inspector, Intercolonial Ry. (Aug., pg. 733.)

Prince Edward Island Ry.—Good progress is reported on the Elmira branch, and it is expected to have it completed by Sept. 30.

Press reports state that construction will be started on what is known as the New London and North Shore line as soon as the engineers can prepare the specifications. (June, pg. 507.)

Quebec and Saguenay Ry.—Plans and profiles showing the line to be built from mileage 78.5 to 85, have been deposited in the Registry Office of the Saguenay District of Charlevoix County, and with the Department of Public Works at Quebec.

H. Doheny, one of the contractors, in a recent interview, stated that the entire line under contract, from St. Joachim to Murray Bay, was well covered with men, over 2,000 being at work. There were about 15 sub-contractors on the line and all of them were getting well ahead with their work. (Aug., pg. 733.)

Quebec Central Ry.—The Quebec Public Utilities Commission recently approved plans for an under-crossing at Thetford Mines, to enable the Bennett & Martin Mining Co. to work its mining property. (Feb., pg. 113.)

Reid Newfoundland Ry.—The completing of the ballasting, lifting, ditching, building stations, wire and snow fences, cattle guards, etc., on the Bonavista branch is now in progress, the work being in charge of H. Burton.

Track has been laid on the Trepassey branch for 16 miles, and the work is still going on, A. Graham being in charge of construction, with headquarters at Cape Broyle, 40 miles from St. John's. (Aug., pg. 733.)

St. John Valley Ry.—The Provincial Secretary for New Brunswick recently stated that an agreement had been reached between the Provincial and Dominion Governments as to the building of this line along the St. John River valley, and that it was hoped to have the preliminary work of construction in hand by the end of the current season. In connection with this line, Hon. J. K. Fleming, added, it is planned to build a line from Quebec across the State of Maine, which would connect with the St. J.V.R. near Centreville, N.B. A charter for the building of this line as the Aroostook Valley Ry. is held by A. R. Gould. This company, however, proposes to operate its line by electricity. (See St. John and Quebec Ry., July, pg. 649.)

Salisbury and Albert Ry.—Press reports state that the Dominion Government has notified the company that legislative authority will be sought as soon as the new parliament meets with a view of taking over the line on the payment of $120,000, or of leasing it on a basis proposed by officers of the company at a recent conference with the Minister of Railways. The offer of the Government is conditional upon the company agreeing at once to make sufficient repairs to enable the line to be operated for its entire length.

Sydney and Louisburg Ry.—The branch now under construction to the new Birch Grove Colliery will be 2.5 miles long. It leaves the main line at Morien Jct., about midway between Sydney and Louisburg, N.S. There are no bridges and nothing in the way of important engineering features. The curvature is light and the gradient against the loaded traffic in no case exceeds 25 ft. per mile. The line is intended purely for coal traffic, and is being built by day labor under the charge of the company's own officers. C. M. Odell is Resident Engineer. (Aug., pg. 733.)

Temiskaming and Northern Ontario Ry.—J. L. Englehart, Chairman of the T. and N.O.R. Commission, stated in an interview Aug. 16, that it was very likely an early arrangement would be made by which the G.T.R. or G.T.P.R. will secure running rights over the T. and N.O.R. from Cochrane to North Bay on a wheelage basis. While negotiations were in progress, no definite conclusions had been reached on any point.

A number of sidings to mining properties have been completed in the Porcupine district, and the freight congestion as a result of the recent fire has been relieved. Several surveys have been made with a view of building a line of about 50 miles into the Gowganda district. (Aug., pg. 735.)

Toronto, Hamilton and Buffalo Ry.—Application is being made to the Brantford city council for the right to lay eight tracks on Newport St., and to make some extensions to the freight shed. (July, pg. 649.)

Vancouver to Peace River.—An organization known as the Peace River Pacific League has been started in Vancouver and district to promote the building of a railway from that city to the Peace River district. At a meeting at New Westminster it was pointed out that the Grand Trunk Pacific Ry., the Vancouver, Westminster and Yukon Ry., and the Howe Sound and Northern Ry. at present hold charters for the building of such a line as is proposed, and that provincial aid could be given only to one company. The League is holding meetings at different points to stimulate public interest prior to making application for aid to the Provincial Government. (Aug., pg. 735.)

Vancouver, Westminster and Yukon Ry.—The agreement between the several municipalities interested, the Burrard Inlet, Tunnel and Bridge Co., and the V. W. and Y. Ry., with respect to the building of a bridge across the second narrows of Burrard Inlet, Vancouver, B.C., has been signed. The municipalities are providing a large proportion of the funds necessary for the building of the bridge, and are represented on the directorate of the B.I.T. and B. Co., while the V.W. and Y. Ry. has been voted a subsidy for the building of a bridge at this point. Under the agreement all these interests are joined, and while the bridge will be built by the B.I.T. and B. Co., the approaches and connecting railways will be built by the V.W. and Y. Ry.

We are advised by the B.I.T. and B. Co. management that the preliminary work of location has been done, and that test holes are being sunk for foundations. It is expected to have the work of putting in the substructure under way this year. D. Cameron is Chief Engineer. At a recent meeting of the municipal delegates with the B.I.T. and B. Co. J. A. L. Waddell, Consulting Engineer, produced estimates as to the cost of the proposed bridge. The cost of a lift span bridge about 1,800 ft. in length, not including wooden approaches and fill, with a lift clearance of 150 ft. and a horizontal clearance of 220 ft., would be in the neighborhood of $1,341,000. He placed the additional cost of having a lift clearance of 190 ft. at about $16,000, and for making provision to carry water pipe across $50,000. He thought this structure could be finished in about two years.

J. Hendry, Vancouver, is President, and W. McNeill, a director of the V.W. and Y. Ry., the latter representing the company in the negotiations. (Aug., pg. 735.)

Victoria Harbor Ry.—Notice is given under the provisions of the British Columbia Ry. Act. 1911, that the V.H.R., having submitted a map showing the general location of a proposed line of railway at Victoria Harbor, and having made application for approval of the same, the Minister of Railways for the

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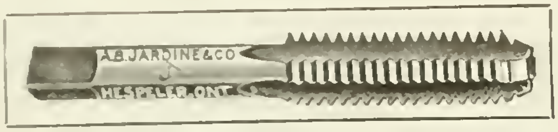

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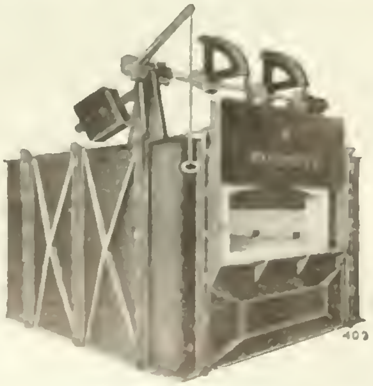

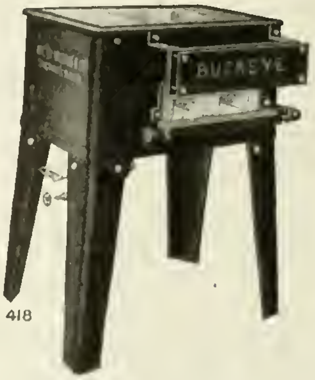

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province has issued a certificate of approval of the general route, with the exceptions noted on the map submitted with the application.

The Victoria city council has given a first reading to a bylaw granting the company a franchise for a railway around the harbor, with branches to connect with the various railways and industrial spurs. Among those interested in the company are: A. H. Mitchell, H. A. Ross, J. O. Cameron, A. E. Todd, R. Hall. The bylaw will again come up for discussion before the council as soon as detail plans are submitted to the council. (Aug., pg. 735.)

Wolfe, Megantic and Lotbiniere Ry.—Representatives of Paris, France, financial houses made a trip of inspection over the route of this projected railway, recently, and looked into the mineral resources of the tributary territory. They were accompanied by Messrs. Tobin, McCrae and Begin, who hold the charter for the building of the line. The same interests are also associated with the Lotbiniere and Megantic Ry., and also in a charter under which these two lines may be amalgamated as the Quebec Eastern Ry., and extended. (See Quebec Eastern Ry., Oct., 1909, pg. 745.)

◆

Large Additional Railway Construction Contracts Awarded.

The current year will long be remembered in railway construction circles as having witnessed the letting of some of the largest single contracts and the largest total mileage of railways put under contract in any one year in Canadian history. In our July issue we gave particulars of contracts for new lines given out this season, showing that upwards of 1,400 miles had then been put under contract. Since that time the following important contracts have been let:—

Alberta Central Ry.—Between Red Deer and mileage 100, west (about 40 miles grading partially completed), 100 miles, D. F. Macarthur, Winnipeg.

Algoma Central and Hudson Bay Ry.—From Hobon, Ont., to junction with the National Transcontinental Ry., about 115 miles, Superior Construction Co., Sault Ste. Marie, Ont.

Canadian Northern Ontario Ry.—From near Sellwood Jct. to Port Arthur, 550 miles. Foley Bros. and Northern Construction Co., Nipigon, Ont.

Canadian Northern Pacific Ry.—Hope to Kamloops, B.C., 163 miles, Northern Construction Co. and Foley, Welch and Stewart.

Kamloops to Yellowhead Pass, about 270 miles, reported to be let to Northern Construction Co.

Grand Trunk Pacific Ry.—From Tete Jaune Cache to Aldermere, B.C., 410 mile, reported let to Foley, Welch and Stewart.

Hudson Bay (Dominion Government) Ry.—From Pas Mission to Thicket Portage, about 185 miles, the J. D. McArthur Co., Winnipeg.

James Bay and Eastern Ry.—Roberval, Que., westerly for 30 miles, J. P. Mullarkey, Montreal.

The contracts above enumerated cover over 1,518 miles of railway, thus making altogether about 3,000 miles of line put under contract this year. At the present time there are under consideration tenders for the Ottawa-Sudbury section of the Canadian Northern Ry., and for two lines of considerable length in Nova Scotia for the Dominion Government.

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The Victoria and Sidney Ry. and the Victoria Terminal Ry. and Ferry Co. have appointed H. A. Jackson, St. Paul, Minn., Assistant Traffic Manager, Great Northern Ry., to prepare and issue tariffs of tolls under the British Columbia Railway Act, 1911. The bylaws making the appointment have been approved by Provincial Minister of Railways.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers to distinctly understand that we are not paid for the publication of any of this matter and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

The Intercolonial Railway has received an American railway ditcher from the American Hoist and Derrick Co., St. Paul, Minn.

The Tallman Brass and Metal Co., Hamilton, Ont., announce that owing to the increase in business it is erecting an addition to its foundry, and also building a large addition to its finishing department.

The Ohio Brass Co., Mansfield, Ohio, has issued catalogue supplement no. 2, containing important additions and improvements to the various materials listed in its railway, mine, catenary and high tension insulator catalogues.

The Robb Engineering Co., Amherst, N.S., has received an order from the Sturgeon Lake Development Co., Toronto, for two Robb-Mumford boilers 54 in. by 18 ft., and one stack 48 ins. in diameter and 80 ft. high, with smoke connection.

The Canadian Locomotive Co. has been granted a license to do business in Ontario under the Act respecting extra-provincial companies. The capital to be employed is not to exceed $3,500,000 and J. S. Lovell, Toronto, is appointed attorney.

The Titanium Alloy Manufacturing Co., Pittsburgh, Pa., has issued "Titanium, the best rail ever rolled," a handsomely illustrated booklet containing facts, figures and illustrations, to show that titanium has solved the rail problem. It states that three years ago the Titanium rail was merely being tried on two or three roads, while now it is in service on more than 50 steam railways and on many important electric lines.

The Vulcan Iron Works, Wilkes-Barre, Pa., has published a new catalogue of locomotives which is ready for distribution. It is rarely that one comes across such a well arranged catalogue, for, not only does it advertise the company's product, but it also contains about 40 pages of valuable railway data that should prove useful to all connected with the motive power department. A large variety of locomotives are illustrated and described, those shown being principally contractors' and industrial types.

Jas. J. Riley, Jr., has been appointed Second Vice President and General Manager of Curtis's & Harvey (Canada) Limited, manufacturers of explosives, with office at Montreal, and as the explosive business now takes up so much of his time he has resigned the Vice Presidency of the Canadian Railway and Contractors Supply Co. His brother, Geo. C. Riley, has also resigned as Secretary of the Supply Company to devote his entire time to the sales department of the explosive business. Robert Wall, who has taken over the Messrs. Riley's interests will continue the business of the Canadian Railway and Contractors Supply Co.

The Canadian Fairbanks-Morse Co., Ltd., which has been incorporated with a capital stock of $2,600,000, and head office at Montreal, has acquired the businesses of the Canadian Fairbanks Co., Ltd., Montreal, the Fairbanks-Morse Canadian Manufacturing Co., Ltd., Toronto, and the subsidiary companies, the Dominion Safe and Vault Co., Ltd., of Farnham, Que., and the E. and T. Fairbanks Co., Ltd., of Sherbrooke, Que. The officers are, President, H. J. Fuller, heretofore President of the Canadian Fairbanks Co.; Vice President, F. C. Brooks, heretofore President of the Fairbanks-Morse Canadian Manufacturing Co.; Vice President and Secretary, T. McMillan; Treasurer, E. R. Whitehead.

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Canadian Ticket Agents' Association.

The 25th annual meeting will be held at Sault Ste. Marie, Ont., on October 4, 5, and 6, on the invitation of the Town Corporation and the Board of Trade. Features of the business meeting will be addresses from representatives of the American Association of General Passenger and Ticket Agents and of the American Association of Passenger Agents. The entertainment features will comprise a visit to the Lake Superior Corporation's steel plant and other works, a trip on the St. Marys River and a trip on the Algoma Central and Hudson Bay Ry. to the end of the track, where there will be a camp or bush dinner, the Association being the guests of the railway company. There will also be an evening reception at the boat club, a theatre party, a smoker, etc.

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Railway Lands Patented.—The following railway lands, situated in Manitoba, Saskatchewan, Alberta and British Columbia, were patented during June:—

	Acres.
Calgary and Edmonton Ry.	2,723.00
Canadian Northern Ry.	320.00
Canadian Pacific Ry. grants	189.34
Canadian Pacific Ry., Souris branch	42.00
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	3,262.23
Total	6,536.57

DEPARTMENT OF RAILWAYS AND CANALS.

BRANCH LINE OF RAILWAY FROM DARTMOUTH TO DEANS.

SEALED TENDERS addressed to the undersigned and endorsed "Tenders for Branch Line, Dartmouth to Deans," will be received at this office until sixteen o'clock on Friday, September 15th, 1911.

Plans, profiles, specification and form of contract to be entered into can be seen on and after the 15th instant at the office of the Engineer of the Department of Railways and Canals, Ottawa; at the office of the Chief Engineer of the Intercolonial Railway Moncton; and at the office of the Board of Trade, Halifax. Forms of tender may be procured from the Chief Engineer of the Department of Railways and Canals or from the Chief Engineer of the Intercolonial Railway.

Parties tendering will be required to accept the fair wages schedule prepared or to be prepared by the Department of Labor, which schedule will form part of the contract.

Contractors are requested to bear in mind that tenders will not be considered unless made strictly in accordance with the printed forms, and in the case of firms, unless there are attached the actual signature the nature of the occupation, and place of residence of each member of the firm.

An accepted bank cheque for the sum of $150,000.00made payable to the order of the Minister of Railways and Canals must accompany each tender, which sum will be forfeited if the party tendering declines entering into contract for the work, at the rates stated in the offer submitted

The cheque thus sent in will be returned to the respective contractors whose tenders are not accepted.

The cheque of the successful tenderer will be held as security, or part security, for the due fulfilment of the contract to be entered into.

The lowest or any tender not necessarily accepted.

By order.
L. K. JONES,
Secretary.
Department of Railways and Canals.
Ottawa, August 12th 1911.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.

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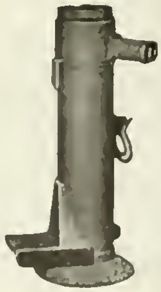

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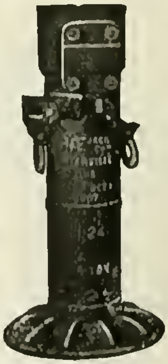
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Orders by the Board of Railway Commissioners.

Beginning with June, 1904, we have published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the hearing took place and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the date assigned to them.

14214. July 15.—Authorizing G.T.R. to rebuild the lost channel bridge at mileage 49.20, Ottawa Division.

14215. June 29.—Ordering C.P.R. to build station at Cap St. Martin, Que., and stop one passenger train in each direction daily, except Sunday, on flag.

14216. July 17.—Authorizing W. M. Sedgwick, Nova Scotia Steel and Coal Co., to prepare and issue tariffs of tolls.

14217. July 13.—Authorizing Dominion Atlantic Ry. to rebuild its Big Joggins bridge, Digby county, N.S.

14218. July 17.—Authorizing Essex Terminal Ry. to cross Tecumseh Road, Peltier St., and Crawford and Wellington Aves., Windsor, Ont., for deviation of its line.

14219. July 18.—Authorizing C.N.R. to open for traffic its line from Shellbrook to Big River, Sask., 57 miles; speed limited to 18 miles an hour.

14220. July 17.—Authorizing C.N.R. to build across public road between secs. 29 and 20, tp. 8, r. 1, w. 2 m., Sask.

14221. July 15.—Authorizing C.N.R. to open for freight traffic its Goose Lake line from Kindersley to Alsask, Sask., 44 miles; fencing and crossing signs to be completed within 60 days under penalty of $25 a day.

14222. July 17.—Authorizing C.N.R. to cross with its Hallboro branch public road between secs. 31 and 32, tp. 13, r. 18, w.p.m., Man.

14223. July 17.—Amending order 14091, June 26, re crossings on C.N.R. Hallboro branch, Man.

14224. July 17.—Extending to Sept. 15, time for completion of C.N.R. across Notre Dame St., Montreal, and joining of Montreal St. Ry. and Montreal Harbor Commissioners' tracks.

14225. July 17.—Authorizing C.P.R. to slightly change its line at bridge 39.49, North Bay subdivision.

14226. July 15.—Authorizing C.P.R. to open for traffic that portion of its Montreal-Quebec Jct. second track of the gauntlet track across Bordeaux bridge.

14227. July 15.—Authorizing C.P.R. to cross with its Waldo branch six highways in Kootenay district, B.C.

14228, 14229, July 12, 13.—Approving location of eight G.T.P.R. stations in western provinces, and six on Lake Superior branch, Rainy River district, Ont.

14230. July 15.—Authorizing G.T.P. Branch Lines Co. to open for traffic its Prince Albert branch from Young to mileage 45.5; speed not to exceed 15 miles an hour, cattle guards and crossing signs to be placed within 30 days under penalty of $25 a day.

14231. July 13.—Authorizing G.T.P. Branch Lines Co. to cross 27 highways on its Regina-Boundary branch, Sask.

14232. July 11.—Dismissing C.N.Q.R. application to take lands of B. J. Coghlin in Montreal.

14233. July 17.—Authorizing C.N.R. to cross public road between secs. 33 and 32, tp. 13, r. 18, w.p.m., Man.

14234. July 12.—Authorizing C.N.O.R. to cross public road between Loughborough and Portland tps.

14235. July 17.—Authorizing C.P.R. to build spur for R. J. Lough on Quebec subdivision, at mileage 15.15 easterly from Quebec Jct.

14236. July 17.—Authorizing C.P.R. to build an additional track northeast of main line along International boundary, North Portal, Sask.

14237. July 11.—Ordering that C.P.R. Park Ave. crossing, Montreal, be protected by day and night watchmen until completion of subway, city to pay wages of watchmen, who will be appointed by C.P.R.

14238. July 11.—Ordering C.P.R. to build subway at Bethune Ave., Westmount, Que. $5,000 to be paid from railway grade crossing fund and remainder by C.P.R. and city equally; work to be completed in six months.

14239. July 17.—Authorizing G.T.R. to build siding into Canadian Quarries and Construction Co.'s premises, con. 1, Nepean tp., Ont.

14240. July 17.—Authorizing G.T.P. Branch Lines Co. to open for traffic its Tofield-Calgary branch from Tofield to Red Deer River crossing, Alta., and rescinding order 14068, June 23.

14241. July 17.—Authorizing G.T.P. Branch Lines Co. to carry traffic on its Yorkton branch from Melville, to Canora, Sask., 29.5 miles; speed limited to 16 miles an hour, and rescinding order 14053, June 21.

14242. July 17.—Authorizing G.T.P.R. to divert road in s.w. ¼ sec. 16, tp. 22, r. 5, w. 2 m., mileage 68.2, Sask.

14243. July 17.—Authorizing G.T.P. Branch Lines Co. to cross and divert four highways on its Biggar-Calgary branch.

14244. July 18.—Approving Boston and Maine Ry. bylaw authorizing F. S. Davis, Chief of Tariff Bureau, to prepare and issue tariffs of tolls.

14245. July 18.—Approving Kettle Valley Ry. Standard Passenger Tariff C.R.C. 2, to apply in British Columbia.

14246. July 18.—Extending to Oct. 1, time for completion of Alberta Central Ry. branch line at Rocky Mountain House, B.C.

14247. July 20.—Authorizing C.P.R. to open for traffic its Irricana East branch, from mileage 0 to 36.7, between Irricana and Standard, Alta.

14248. July 20.—Approving location of G.T.P. Branch Lines Co. Cutknife branch from Battleford to west line of sec. 29, tp. 43, r. 18, w. 3 m., mileage 0 to 14.66, Sask.

14249. July 4.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to build its main line across John St., Bethany, Ont.

14250. July 18.—Dismissing application of Dominion Millers Association for order suspending C.P.R. tariff, C.R.C. E. 2040, and G.T.R. tariff E. 2285, on grain, etc.

14251. July 17.—Approving revised location of Algoma Eastern Ry., through lots 6, 7 and 8, con. 6, Merrit tp., Sudbury District, Ont., and authorizing diversion of trunk road.

14252. July 18.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to build bridge 79.31 over Pigeon Creek, Ont.

14253. July 18.—Authorizing C.P.R. to rebuild bridge at mileage 67.3, Cascade subdivision.

14254. July 15.—Approving location of C.P.R. station at Bittern Lake, Alta.

14255, 14256. July 18.—Authorizing G.T.R. to rebuild bridges 186 on Becancœur River, mileage 135.73, District 3, near Lyster, Que., and 48 at milepost 82.78, District 19.

14257. July 18.—Authorizing G.T.P. Branch Lines Co. to cross with its Prince Albert branch, 23 highways in Saskatchewan.

14258. July 17.—Authorizing G.T.P. Branch Lines Co. to cross with its Calgary branch, highway in s.e. ¼ sec. 4, tp. 30, r. 20, w. 4 m., mileage 145.7, Alta.

14259. July 15.—Approving location of nine G.T.P.R. standard no. 1 stations on Lake Superior branch, Thunder Bay District, Ont.

14260. July 18.—Authorizing G.T.P. Branch Lines Co. to cross with its Regina-Boundary branch 20 highways in Saskatchewan.

14261. July 15.—Approving location of G.T.P.R. station at Cabot, St. Francois Xavier parish, Man.

14262, 14263. July 18.—Authorizing C.N.R. to cross public roads between secs. 23 and 22, tp. 7, r. 3, w. 2 m., and between sec. 31, tp. 13, r. 18, and sec. 36, tp. 13, r. 19, w.p.m., Hallboro branch, Man.

14264. July 18.—Authorizing C.N.O.R. to cross Van Luven St., Yarker, by overhead structure.

14265, 14266. July 18, 15.—Authorizing C. N. Alberta Ry. to cross north and south road allowances between secs. 26 and 27, tp. 53, r. 9, w. 5 m., also 10 highways.

14267. July 21.—Authorizing Vancouver, Fraser Valley & Southern Ry. to open for traffic its line from Park Drive, Vancouver, to Eighth Ave., New Westminster, B.C.

14268, 14269. July 21, 20.—Authorizing C.N.R. to open for traffic its line from Shellbrook to Blaine Lake, 35 miles, and from North Battleford to Edam, Sask., 38 miles.

14270. July 19.—Authorizing South Ontario Pacific Ry. to make revision in its Guelph Jct. to Hamilton line to connect with T., H. & B.R.

14271. July 20.—General order re General Train Rules. This order is given in full on another page.

14272, 14273. July 18.—Authorizing Dominion Atlantic Ry. to rebuild its Bear River and Allen's Creek bridges in Digby and Annapolis Counties, N.S.

14274. July 20.—Ordering G.T.R. to make ditches for Begnoche, St. Blaise, Que., by Aug. 15.

14275. July 18.—Authorizing Toronto Eastern Ry. to cross public roads on lots 26 and 27, mileage 19.8, Darlington tp., Ont.

14276. July 22.—Approving Algoma Central & Hudson Bay Ry. Josephine Branch at mileage 17.8, from Michipicoten to Magpie Mine, 9.16 miles, Algoma District, Ont.

14277. July 22.—Authorizing C.N.R. to cross public road between secs. 7 and 12, tp. 5, r. 6 and 7, w. 2 m., Sask.

14278. July 19.—Approving Montreal & Southern Counties Ry. location between Front St., St. Lambert, and eastern boundary of Country Club, lot 295, St. Antoine de Longueuil parish, Que.

14279. July 20.—Authorizing Saskatchewan Government to cross C.P.R. with road in n.e. ¼ sec. 20, tp. 29, r. 8, w. 2 m.

14280. July 20.—Authorizing Alberta Government to cross C.P.R. on south side of sec. 19, tp. 29, r. 25, w. 4 m.

14281. July 20.—Approving plans and specification for Carp drain under G.T.R. in Huntley tp., Ont.

14282. July 21.—Authorizing city of Regina, Sask., to carry its street railway across C.N.R. at Dewdney St., half-interlocking plant to be installed.

14283. July 20.—Extending to July 31, time for removal by C.P.R. of small hill at mileage 62.5, Morris tp., Ont.

14284. July 20.—Authorizing C.P.R. to close crossing at station and divert highway along Munquart River near Bath.

14285. July 18.—Authorizing C.P.R. to cross with its Smiths Falls to Bathurst double track, four highways in Lanark County, Ont.

14286. July 18.—Authorizing C.P.R. to close portion of road allowance between secs. 32-33 tp. 18, r. 14, w. 4 m., Alta.

14287. July 22.—Authorizing C.P.R. to build additional 300 ft. to spur into Victoria Park, Calgary, Alta.

14288. July 22.—Authorizing C.P.R. to build two spurs to A. G. Peuchan's premises one-half sec. 3, tp. 8, r. 4, w. 5 m.

14289 to 14298.—July 21-20.—Authorizing C. N. Alberta Ry. to cross public road between secs. 29 and 30, tp. 54, r. 2, w. 5 m. and to cross nine road allowances.

14299. July 21.—Authorizing C.N.R. to cross with its Hallboro branch, 10 roads, in Manitoba.

14300. July 21.—Approving C.N.Q.R. plans of gates to be installed at Ontario St., and Valois Ave., Montreal.

14301. July 18.—Authorizing C.N.O.R. to cross seven highways in Marlborough and Goulbourn tps.

14302. July 19.—Authorizing Niagara, St. Catharines and Toronto Ry. to operate siding from Elm St., to connect with Canada Cement Co.'s siding, Port Colborne, Ont.

14303. July 21.—Authorizing G.T.P.R. to cross temporarily with its Melville-Regina branch, C.N.R. Prince Albert Branch in s.e. ¼ sec. 36, tp. 17, r. 20, w. 2 m., Regina, Sask. Diamond to be installed and watchman and semaphore used.

14304. July 20.—Authorizing G.T.P.R. to cross with its Prince Albert branch the the C.N.R. Prince Albert branch in n.w. ¼ sec. 18, tp. 48, r. 25, w. 2 m., interlocking plant to be installed.

14305. July 20.—Authorizing G.T.P. Branch Lines Co. to cross with its Calgary branch, highway in s.w. ¼ sec. 14, tp. 24, r. 29, w. 4 m., Alta.

14306, 14307. July 20-18.—Authorizing G.T.P. Branch Lines Co. to divert road and to cross and divert road on its Prince Albert branch between mileage 49.5 and 49.8 and at mileage 101.1, Sask.

14308. July 18.—Authorizing G.T.P. Branch Lines Co., to cross with its Regina-Boundary branch, 18 highways in Saskatchewan.

14309. July 20.—Authorizing G.T.P. Branch Lines Co. to build standard no. 1 station at Mehan, on its Yorkton extension, Sask.

14310. July 18.—Authorizing G.T.P. Branch lines Co. to cross with its Regina-Boundary branch the C.P.R. Estevan branch at Frobisher, Sask., interlocking plant to be installed.

14311. July 22.—Authorizing G.T.P.R. to cross highway between s.w. and n.w. ¼ sec. 16, and n.w. ¼ sec. 9, tp. 53, r. 25, w. 4 m., mileage 4.1, North Alberta District.

14312. July 20.—Authorizing C. N. Alberta Ry. to build across north and south road allowance between secs. 27 and 28, tp. 53, r. 8, w. 5 m., Alberta.

14313. July 20.—Authorizing G.T.P. Branch Lines Co. to cross with its Regina-Boundary branch, 22 highways in Saskatchewan.

14314. July 15.—Authorizing G.T.R. to build new station and dwelling at Manilla Jct., Ont.

14315. July 21.—Authorizing G.T.R. to build three spurs near International Marine Signal Co.'s premises, Ottawa, Ont.

14316. July 20.—Extending to Nov. 1, time for Hull Electric Co. to equip electric cars with power brakes in accordance with provisions of general order 10462.

14317. July 20—Authorizing G.T.R. to build passing track at Thedford station, Ont.

14317 to 14320. July 19-20-18—Authorizing G.T.R. to build spurs to premises of Vineland Canning Co., Lincoln county, Robinson Bros. Cork Co., Kilally St., Port Colborne, and Knechtel Furniture Co., Victoria St., Hanover, Ont.

14321. July 21.—Authorizing G.T.P. Branch Lines Co. to cross with its Tofield-Calgary branch, the C.P.R. Calgary and Edmonton branch in Calgary, Alta., interlocking plant to be installed.

14322. July 20.—Authorizing G.T.P.R. to divert road in n.w. ¼ of sec. 21, tp. 36, r. 9,

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w. 3 m., at mileage 25.6, Sask.

14323 to 14326. July 20-21-18—Authorizing G.T.P. Branch Lines Co. to build over highway on its Moose Jaw Northwest branch at mileage 47.4, to divert three highways on its Prince Albert Branch at mileage 41.7, 44.9 and 43.6, divert one road in s.w. ¼ sec. 25, tp. 36, r. 9, w. 3 m., mileage 22.1, Sask., and to cross eight highways on its Calgary branch.

14327. July 21.—Authorizing town of Blind River, Ont., to extend Frances St. across C.P.R.

14328. July 18.—Authorizing town of Steelton, Ont., to build highway across Algoma Central and Hudson Bay Ry. at Connee Ave.

14329. July 18.—Authorizing C.N.O.R. to cross public road between cons. 2 and 3, Nepean tp.

14330, 14331. July 20-19.—Authorizing C.N.R. to divert highway between secs. 35, tp. 23, r. 1, and sec. 2, tp. 2, tp. 24, r. 1, w. 5 m., to divert trail to road now travelled, and to build spur line to Edmonton Lumber Co.'s yards, Strathcona, Alta.

14332. July 21.—Authorizing C.N.O.R. to cross public road in Montague tp.

14333, 14334. July 21-20.—Authorizing C.N. Alberta Ry. to cross north and south road allowances between secs. 26 and 27, tp. 53, r. 8, and between s.w. ¼ sec. 10 and s.e. ¼ sec. 9, tp. 53, r. 22, w. 5 m., Alberta.

14335, 14336. July 18.—Authorizing Algoma Eastern Ry. to build bridges over Whitefish and Spanish Rivers at mileage 66.23 and 42.80 Ont.

14337. July 20.—Authorizing Esquimalt and Naniamo Ry. to build spur to McKinnon Farm gravel pit, north Cowichan District, Vancouver Island, B.C.

14338. July 18.—Authorizing C.P.R. to build seven bridges on its Edmundston, Sherbrooke, Calgary, Cascade, Kipawa, St. Lin subdivisions.

14339. July 20.—Authorizing C.P.R. to build spur to A. McBride & Co.'s premises, Calgary, Alta.

14340. July 20.—Authorizing Georgian Bay and Seaboard Ry., (C.P.R.) to close original road allowance between cons. 6 and 7, Ops. tp. Ont.

14341. July 20.—Ordering C.P.R. to build farm crossing for G Sabourin, lot 2, con. 2, Caldwell tp. Ont.

14342. July 19.—Authorizing C.P.R. to cross with its Moose Jaw Northwesterly branch, 48 highways between mileage 135.687 and 219.46.

14343. July 20.—Approving revised location of G.T.P. Branch Lines Co., Prince Albert branch, mileage 105.04 to 109.01, Sask.

14344. July 18.—Authorizing Algoma Eastern Ry. to build bridge over trunk road, Merritt tp. mileage 17.38, Ont

14345. July 20.—Authorizing G.T.P. Branch Lines Co. to build across and divert highway at mileage 24, Yorkton Branch, Alta.

14346. July 18.—Extending to Aug. 15, time for installation of gates by C.N.Q.R. at Moreau St., Montreal.

14347. June 15.—Authorizing G.T.P. Branch Lines Co. to carry traffic over its Melville-Regina branch from Melville to Balcarres, Sask., and rescinding order 14116, June 15.

14348. July 21.—Authorizing C.N.R. to build spurs across Fleet, Mulvey and Jessia Aves., and across property of Blackwoods, Ltd., Winnipeg, Man.

14349. July 4.—Ordering C.P.R. to install within 90 days improved type of electric bell at crossing ¼ mile west of Piles Jct., Que., 20 per cent. to be paid from railway grade crossing fund.

14350. June 15.—Ordering that G.T.P.R. and C.N.R. shall each pay one half cost of maintaining interlocking plant at Oak Point Jct., Man.

14351. July 25.—Ordering that C.N.R. take certain precautions for protection at crossing of Red River bridge between Emerson and Emerson Jct., Man.

14352. May 16.—Dismissing application of Canadian Oil Companies Ltd., for order directing G.T.R., C.P.R. and C N R to establish carload rate of 56c. per 100 lbs. carload rate from Petrolia, Ont., to Winnipeg, Man., on petroleum and its products.

14353. July 24.—Relieving C N.R. from keeping a watchman and stopping its trains at Pembina St. crossing, Winnipeg.

14354. July 24.—Authorizing C N R. to open for freight traffic its line from Oak Point to Gypsumville, Man. 97 miles.

14355. July 26.—Authorizing C N O R. to cross public road in lot 44, con 1, Camden tp.

14356. July 22.—Authorizing C N O.R. to build bridge over Rouge River, St. Andrew parish.

14357. July 15.—Approving C.N.O.R. plans for station building at Belleville.

14358. July 21.—Authorizing C.N. Alberta Ry to cross public road between secs 25, tp. 54, r. 3, and sec. 30, tp. 51, r. 2, w. 5 m, Alta

14359. July 21.—Extending to Dec. 23, time for completion of spur by C P.R., New Westminster District B.C.

14360, 14361. July 25-24.—Approving Nelson and Fort Sheppard Ry and Red Mountain Ry. bylaws authorizing H. A. Jackson to prepare and issue tariffs of freight tolls.

14362. July 21.—Ordering Napierville Jct. Ry. to file plans within 30 days for station building at Delson Jct., station to be built within 90 days from date of approval.

14363. July 21.—Ordering C.P.R. to build crossing in s. w. ½ sec. 12, tap. 21, r. 1. w. 5 m., Alta.

14364. July 20.—Approving. V.V. & E. Ry. bylaw authorizing H. A. Jackson to prepare and issue tariffs of freight tolls.

14365. 14366. July 22-18.—Authorizing G.T.P. Branch Lines Co. to cross with its Prince Albert branch, three highways in Saskatchewan, and with its Calgary branch, five highways in Alberta.

14367. July 20.—Approving location and plans of G.T.P.R. station at Zenata, Sask.

14368. July 24.—Authorizing G.T.P. Branch Lines Co. to cross with its Regina-Boundary branch, six highways in Saskatchewan.

14369. July 22.—Authorizing G.T.R. to rebuild bridge carrying Patton St. over its tracks at Grimsby, Ont.

14370. July 24.—Authorizing G.T.R. to use four bridges on its Eastern Division.

14371. July 22.—Authorizing C.P.R. to build three bridges on its Northwest branch and Kingston and Pembroke Ry.

14372. July 22.—Authorizing C.P.R. to build spur in lot 26, block E, for G. H. Archibald & Co., Calgary, Alta.

14373. July 22.—Authorizing C.P.R. to build its Moosejaw Northwesterly branch across 25 highways from mileage 243.55 to 266.37, Saskatchewan and Alberta.

14374. July 25.—Authorizing C.P.R. to rebuild bridge at mileage 20.0 on its Eastern Division, Brockville subdivision.

14375. July 24.—Amending order 14088, June 26, re crossing of highways by C.P.R., Kininvie branch in Alberta.

14376, 14377. July 24-20.—Approving location of C.P.R. stations at Moore Park on McGregor-Varcoe branch, Man., and at Abbotsford, B.C.

14378. July 21.—Relieving C.P.R. from further protection of crossing between cons. 2 and 3, Lobo tp., Ont.

14379. July 22.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to divert public road allowance between cons 7 and 8, Elden tp., Ont.

14380. July 24.—Authorizing South Ontario Pacific Ry. (C.P.R.) to build its Guelph Jct. to Hamilton branch across seven highways from mileage 3.98 to 9.75, Ont.

14381. July 25.—Authorizing C.P.R. to build spur for W. Hunt, at mileage 83.54, Portal Subdivision, near Weyburn, Sask.

14382. July 24.—Approving Bedlington and Nelson Ry. bylaw authorizing H. A. Jackson to prepare and issue tariffs of freight tolls.

14383. July 27.—Removing speed limitations of 10 miles an hour on C.P.R. trains St. Antoine municipality, Riviere du Loup, Que.

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Quebec Central Ry.—In the article on the change of control of this line, in our August issue, page 731, it was stated that it was to be leased for 22 years to the C.P.R. Co., acting for itself and the Ry. The proposed lease is for 99 New York, New Haven and Hartford years. A Montreal press report of Aug. 24 states that the agreement has been executed. It is subject to the ratification of the holders of Q.C.R. securities and to legislative approval. It is said that the English directors will be replaced by a Canadian board.

During June, 10 employes were killed and 11 injured in the course of their work in connection with the construction and operation of Canadian railways. Of the fatalities, four were due to collisions, three to being struck by locomotives, two to being run over, and one to a derailment.

Lewis Gleason, travelling expert for the Galena Signal Oil Co., with headquarters at Chicago, who is well known in railway circles throughout Canada, wrote recently: "I must compliment you on your excellent publication. The Railway and Marine World grows better as it gets older, a good indication that it is prospering, as it undoubtedly deserves."

Reports as to the use of cars show that for the 11 months ended July 31, nearly 100,000 cars were used to haul grain from the Canadian Northwest to lake ports. These cars were handled as follows:—C.P.R., 59.6%; Canadian Northern Ry., 31.8%; Grand Trunk Pacific Ry., 7.3%; Great Northern Ry., U.S. Lines, 1.3%.

Railway Rolling Stock Notes.

The Intercolonial Ry. has received 15 tank cars, from the Canadian Car and Foundry Co., Montreal.

The G.T. Pacific Ry. has received two colonist cars from the Canadian Car and Foundry Co., Montreal, and four consolidation locomotives from the Montreal Locomotive Works.

The New Brunswick Coal and Ry. Co. has recently added to its equipment a combination first class smoker, baggage and postal car, which has been built at Moncton. It is 55 ft. long.

The locomotive which the International Ry. of New Brunswick recently purchased from the Intercolonial Ry., as mentioned in our last issue, is, we are advised, a freight one with a boiler pressure of 140 lbs., and cylinders 17 ins. diar. by 24 ins. stroke.

The Canadian Northern Ry., between July 15 and Aug. 15, ordered 25 first-class cars, 57 box cars, 10 second class cars and three dining cars from the Canadian Car and Foundry Co., Montreal; and 250 box cars from the Crossen Car Manufacturing Co., Cobourg, Ont.

The city of Toronto, in connection with the construction of its proposed street car lines, has purchased one Marion shovel and 40 four yard dump cars from F. H. Hopkins and Co., Montreal; and another steam shovel, some cars and six saddle tank locomotives in the United States.

The C.P.R., between July 25 and Aug. 17, ordered the following rolling stock: 83 box cars, nine stock cars, three refrigerator cars (freight), four first class cars, two second class cars, two mail and express cars, one baggage and express car. 10 D.10 locomotives, 10 D.4 locomotives, one T.2 locomotive and one tank switcher locomotive, from its Angus shops, Montreal; 14 D.4 locomotives from the Montreal Locomotive Works, and one coal car in the U.S.

The Canadian Northern Ry., between July 15 and Aug. 15, received the following additions to rolling stock:—30 flat cars, 110 box cars, five second class cars and two first class cars from the Canadian Car and Foundry Co., Montreal; seven refrigerator cars from the Crossen Car Manufacturing Co., Cobourg, Ont.; 105 box cars from the Nova Scotia Car Works, Halifax, N.S., and 10 switching locomotives from the Montreal Locomotive Works.

The C.P.R., between July 25 and Aug. 17. received the following additions to rolling stock: 372 box cars, 20 stock cars, 13 vans, 16 freight refrigerator cars, one suburban car, two tourist cars, three second class cars, 10 baggage and smoking cars, one dining car, two buffet-parlor cars and six D.10 locomotives from its Angus shops, Montreal; 352 steel frame box cars, 27 steel flat cars, from the Canadian Car and Foundry Co., Montreal, and two N.3 locomotives from the Canadian Locomotive Co., Kingston, Ont.

The G.T.R. has ordered 10 Richmond compound consolidation locomotives from the American Locomotive Co. for use on its U.S. lines. They will be built at Shenectady, N.Y. Following are the chief details:—

Cylinders	22½ and 35 by 32 ins.
Driving wheels, diar.	63 ins.
Boiler type	Extended wagon top, wide firebox
Boiler pressure	210 lbs.
Tubes, no. and diar	353 2 ins.
Tubes, length	15 ft.
Heating surface, firebox	168.2 sq. ft.
Heating surface, tubes	2,757.1 sq. ft.
Grate area	50.62 sq. ft.
Tender, type	Water bottom
Capacity, water	7,000 U.S. gals.
Capacity, coal	14 tons
Tractive power	36,000 lbs.

Two of the new parlor-buffet cars, which the C.P.R. recently built at its

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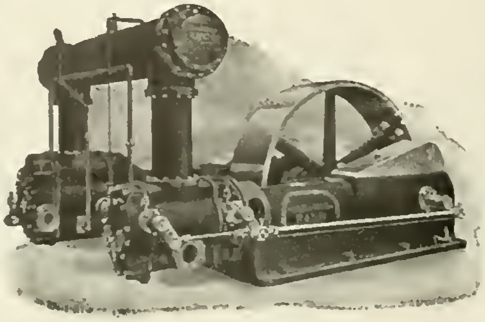

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Angus shops, and of which a floor plan was given in our last issue, have been placed in service between Montreal and Ottawa. The car is divided into two main compartments, the observation end being for smokers, the other end, which is the larger, being the general room. The buffet and toilet accommodation is located between. The interior is finished in mahogany, with arched ceiling in dull gold; the chairs are upholstered in green velvet plush, and in black leather in the smoking compartment. Lighting is by electricity from large dome lights along the centre, and individual reading lamps affixed to the walls.

Following are the chief details of the 25 Otis dump cars, which the Intercolonial Ry. has ordered from the Canadian Car and Foundry Co., Montreal, as mentioned in our last issue, and which will be built under license from the Hart-Otis Car Co., Montreal:—

Length over end sills	38 ft. 9 ins.
Length inside	36 ft. 9½ ins.
Width over all	9 ft. 11¼ ins.
Width inside	9 ft. 6 ins.
Height inside	5 ft.
Height from rail to top	9 ft. 4 13-16 ins.
Height from rail to floor	4 ft. 4 13-16 ins.
Truck centres	26 ft.
Wheel base of truck	5 ft. 6 ins.
Wheel base of car	31 ft. 6 ins.
Number of doors on each side	Six
Width of door opening	2 ft. 2 ins.
Bolsters and brake beams	Simplex
Side bearings	Sosemihl
Couplers	R. E. Janney
Air brakes	Westinghouse K.C. 1012

Following are the chief details of the 25 first class cars which the Canadian Northern Ry. is having built by the Canadian Car and Foundry Co., Montreal, as mentioned in our last issue:

Length over end sills	72 ft. 6 ins.
Width over side sills	9 ft. 10½ ins.
Width over all at eaves	10 ft. 2¾ ins.
Width between deck sills	5 ft. 6 ins.
Height top of sill to bottom plate	6 ft. 8½ ins.
Platform	Standard Coupler Co.
Body bolsters	Double cast steel
Inside finish	Mahogany
Vestibule finish	Birch
Seats	Walkover type corrugated backs.
Lighting	Commercial Acetylene Co.
Heating	Gold Duplex, Frumveller heater
Hoppers	Duner Co.
Water system	C.N.R. standard, air pressure.
Air brakes	Westinghouse P.M. 1612
Truck wheels	36 ins. steel tired, cast steel centres.
Axles	M.C.B. standard 4¼ by 8 ins.
Bolster springs	36 ins. double elliptic.
Equalizer springs	8⅛ by 10 ins.
Brakebeams	Simplex high speed
Journal boxes	McCord Malleable
Journal bearings	M.C.B. bronze
Wedges	M.C.B. Malleable
Pedestals	M.C.B. cast iron
Side bearings	Roller

The G.T.R. is building, at its Montreal shops, 20 baggage cars and 15 coaches. Of the baggage cars, five are fitted with end doors in one end only, each door divided in the middle, and made to fold again, thus making a four section door. The end door opening of these cars is 7 ft. 6 ins. wide by 6 ft. 11¼ ins. high. They are also fitted with four side doors, two of which will be 8 ft. by 6 ft. 2 ins. and two 5 ft. by 6 ft. 2 ins., one small and one large door on each side of the car. They are to be used for automobile traffic. Following are the chief dimensions:—

Baggage Cars.

Length over end sills	60 ft. 10 ins.
Length inside	60 ft.
Length over buffers	63 ft. 2½ ins.
Width over side sills	9 ft. 8 ins.
Inside width in clear	8 ft. 10½ ins.
Height over all	14 ft. 4½ ins.
Side doors	Four, 5 ft. wide
End doors	Two, 2 ft. 3 ins. wide

Coaches.

Length over end sills	67 ft. 6 ins.
Length inside	66 ft. 7 ins.
Length over buffers	75 ft. 6¼ ins.
Width over side sheathing	9 ft. 9⅝ ins.
Inside width in clear	8 ft. 9 ins.
Height over all	14 ft. 4½ ins.
Seating capacity, car body	60
Seating capacity, smoke room	9
Bolsters	Double cast steel

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R. K. Scarlett, C.P.R. passenger agent, Nelson, B.C., was married there, July 25, to Miss C. B. Barnes, of Vancouver.

Traffic Orders by the Board of Railway Commissioners.

Summaries of other orders are given on another page, under "Orders by the Board of Railway Commissioners:—

RATES FROM QUEBEC PROVINCE TO NEW ENGLAND STATES.

14209. July 14. The application of Lefebvre & Mahon, of Howick Station, Que., exporters of lumber, hay, and grain, complaining of the rate of 27c. per 100 lbs. charged on a carload of hay from St. Edouard, Que., on the Napierville Junction Ry., to Pawtucket, Rhode Island, it is hereby declared that the rate which should have been charged on the said shipment from St. Edouard to Worcester, Massachusetts, was 18c. per 100 lbs., in accordance with the tariff of the Napierville Junction Ry. C.R.C. 4 and 5, lawfully published and filed, plus the arbitrary or proportional rate of the New York, New Haven and Hartford Rd. from Worcester, Mass., to Pawtucket, R.I., stated to be 4c. per 100 lbs., making in all, a joint through rate of 22c. per 100 lbs., and that the Napierville Junction Ry. is hereby authorized to refund to the applicants the amount charged in excess of the lawful rate; and it is ordered that the Napierville Junction Ry. publish and file not later than September 1, joint through freight tariffs to points on the New York, New Haven and Hartford Rd., by such reasonable and practicable and cheapest routes as may be available, as has been done by the Quebec, Montreal and Southern Ry.

LUMBER RATES FROM B.C. TO G.T.P.R. POINTS.

14213. July 18. Re complaint of Mountain Lumber Manufacturers' Association of Calgary, Alta., that they are unable to obtain joint through rates on lumber, shingles, and other forest products in carloads, from the shipping points in the interior of British Columbia, on the C.P.R., to points on the G.T.P.R., it appearing from letters from counsel for the C.P.R. and G.T.P.R. on file with the Board that the G.T.P.R. has refused to concur in joint through rates on lumber, etc., from the points of shipment in British Columbia to points on its lines until it is able to receive the traffic from the C.P.R. at or near Calgary, Alta., it is ordered that the C.P.R. and G.T.P.R. do agree upon and publish and file a joint tariff, or joint tariffs, of tolls to all points on the G.T.P.R., by the shortest joint mileages via Camrose, Alta., Saskatoon, Sask., and Portage la Prairie, Man,; the said joint tariff, or tariffs, to apply from all the shipping points from which the tariffs on lumber, etc., apply to points east of the Rocky Mountains on the C.P.R. and Canadian Northern Ry., and to include all the articles enumerated therein. And it is also ordered that in compiling the said joint tariff, or tariffs, should any disagreement arise between the companies which the companies are unable to settle themselves, full particulars of the points in dispute shall be reported to the Board not later than Sept. 1, 1911.

WHITE PASS AND YUKON RAILWAY RATES.

14385. July 18. Re application of British Yukon Ry. Co., British Columbia Yukon Ry. Co., and the Pacific and Arctic Ry. and Navigation Co., for a rehearing, pursuant to the Order of the Governor-in-Council, dated June 16, of the Board's order dated January 18, it is ordered that the applicant companies, and the Dawson Board of Trade or other shippers affected, if they so desire, be afforded an opportunity of supplementing their case by such evidence, facts or figures as they deem proper; and that the applicant companies be relieved from filing the joint tariffs prescribed under said order, and are permitted to restore the joint tariffs disallowed by the said order, until such case can be disposed of.

ALLOWANCES FROM TRACK SCALE WEIGHTS, CARLOAD TRAFFIC.

14389. July 25. Re special freight tariffs governing the weighing of carload traffic and allowances from track-scale weights; and re application of the Canadian Manufacturers' Association, and the Mountain Lumber Manufacturers' Association of Calgary, Alta., for an order directing that the operation of the said tariffs put in force by the railway companies in Western Canada in the beginning of May, 1911, be delayed until after the applicants shall have had an opportunity of being heard, it is ordered that the special tariffs of the railway companies operating west of and including Port Arthur, Ont., showing the allowances from track-scale weights of carload traffic, as in effect immediately prior to May 1, be restored until the applicants and shippers shall have an opportunity of presenting their views to the Board, or until the matters in dispute shall have been adjusted between the parties at a conference which shall be had between the railway companies and shippers, or their representatives.

The Retirement of Sir William Whyte.

A Winnipeg press despatch of Aug. 28, says: The retirement of Sir Wm. Whyte, Vice President of the C.P.R. in control of Western lines was officially announced here to-night by Sir Thos. Shaughnessy at a dinner at the Manitoba Club, given in honor of Sir William by the President, at which about 125 of the leading citizens of Winnipeg were present.

In expressing regret at the severance of Sir William's active connection as an official of the company, Sir Thomas said that three years Sir William reached the age, when under the rugulations of the company, he should have retired, and that it was only at his (the President's) personal solicitation that he consented to remain in office for a few years longer. A short time ago Sir William had notified him that the time had arrived when he must insist on being relieved of his duties. Sir Thomas rejoiced to be able to announce that the company was not altogether losing the benefit of his experience, as he would continue his connection with the company as a director, having been elected to the board at its last meeting.

Sir William's retirement takes effect on Sept. 30. It is said that his future plans are indefinite, but that he will continue to live in Winnipeg.

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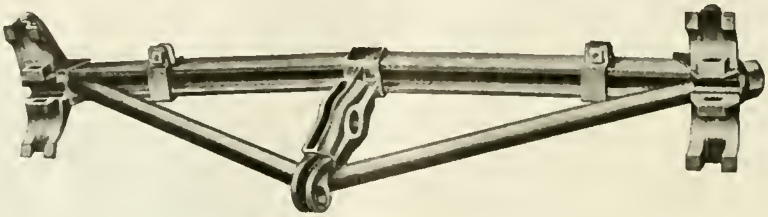

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Mainly About Transportation People.

Lord Strathcona has sent $10,000 to the Y.M.C.A. building fund at Brantford, Ont.

D. McNicoll, Vice President, C.P.R., returned to Canada, August 4, from Great Britain.

Sir Thos. G. Shaughnessy returned to Montreal, August 2, from a vacation at St. Andrews, N.B.

Jos. T. Tucker, Chairman of the Central Freight Association, died at Chicago recently, aged 76.

W. Wainwright, Second Vice President, G.T.R., returned to Canada, August, from Great Britain.

T. J. Drummond, President, Lake Superior Corporation, returned to Montreal, from England, July 31.

Sir Thos. G. Shaughnessy left Montreal, Aug. 23, on his annual trip of inspection over the C.P.R. system.

G. T. Bell, Assistant Passenger Traffic Manager, G.T.R., returned to Montreal, recently, from a European trip.

H. H. Vaughan, Assistant to the Vice President, C.P.R., has been elected President, Engineers' Club, Montreal.

J. M. Gibbon, European Advertising Representative of the C.P.R., arrived in Montreal from London, Eng., Aug. 7.

E. E. Horsey, Manager, Lake Ontario and Bay of Quinte Navigation Co., rescued a lad from drowning at Kingston, Ont., recently.

Sir Donald D. Mann, Vice President, Canadian Northern Ry., left Toronto, Aug. 22, on an inspection trip over the lines in the west.

F. J. Phelan, eldest son of T. P. Phelan, President, Canada Railway News Co., died at Toronto, Aug. 20, of typhoid fever, aged 30.

M. J. Haney, contractor, Toronto, has given a second $1,000 to the Holy Family Church, Montreal, which he attended in his youth, for a new organ.

J. H. Walsh, General Manager, Quebec Central Ry., Sherbrooke, sailed from Quebec, at the end of July, for England, to spend a short holiday, and returned towards the end of August.

A. D. Cartwright, Secretary, Board of Railway Commissioners, Ottawa, with his wife and son, spent part of the summer in Prince Edward Island.

The body of John Stuart, formerly train dispatcher, Michigan Central Rd., St. Thomas, Ont., was found in a pond at Tillsonburg, Ont., Aug. 11.

N. Rankin, heretofore in the C.P.R. publicity department, Calgary, Alta., has been appointed Secretary of the Western Canada Irrigation Association.

Mrs. P. S. Ross, of Montreal, mother of W. G. Ross, ex-Managing Director, Montreal Street Ry., died at Caledonia Springs, Ont., Aug. 18, aged 83.

A. B. Murdoch, Canadian Northern Ry. agent at Oak Point, Man., and previously of the C.P.R. audit staff, died at St. Boniface Hospital, Aug. 7.

F. Scott, Treasurer, G.T.R., and Mrs. Scott returned to Montreal, July 28, from a holiday trip to Vancouver and other points on the Pacific coast.

W. G. Ross, ex-Managing Director, Montreal St. Ry., Mrs. and the Misses Ross returned to Montreal, recently, from an extended European trip.

The engagement is announced of Miss A. F. Paul, daughter of John Paul, General Freight and Passenger Agent, Niagara, St. Catharines and Toronto Ry., to C. J. Sullivan.

E. J. Haughton, District Superintendent, Dominion Government Radio-telegraph service, Vancouver, B.C., was married to Miss M. E. Shotbolt, of Victoria, B.C., Aug. 3.

H. H. Horsey, architect, who died in Ottawa, Aug. 14, aged 83, was formerly a civil engineer, and in that capacity was engaged upon construction work on the G.T.R.

Miss H. Cantley, daughter of T. Cantley, General Manager, Nova Scotia Steel and Coal Co., died in New Glasgow, N.S., July 31, following an operation for appendicitis.

Arthur M. Grantham, formerly Purchasing Agent and Superintendent of Construction, Toronto Ry., was married, August 29, to Miss Margaret F. Wedd, of Toronto.

M. L. Hersey, Consulting Chemist, C.P.R., Montreal, is the Liberal candidate for the representation of the St. Antoine division of Montreal in the House of Commons.

Michael Connolly and W. J. Poupore, contractors, have been elected directors of the National Real Estate and Investment Co. of Canada, Ltd., which has its headquarters in Montreal.

D. B. Hanna, Third Vice President, Canadian Northern Ry., spent a short time in Winnipeg, early in August, with Sir William Mackenzie, President, whom he accompanied from Toronto.

J. Turnbull, Chief Superintendent, London and North Western Ry., of England, who is visiting Canada, is going over the C.P.R. in Vice President McNicoll's private car Metaped'a.

A. J. Earling, President, Chicago, Milwaukee and St. Paul Ry., accompanied by a number of directors, spent some time early in Aug. visiting Banff and other points on the C.P.R.

B. R. Hepburn, General Manager, Ontario & Quebec Navigation Co., is the Conservative candidate for the representation of Prince Edward County, Ont., in the House of Commons.

H. J. Fuller, President, Canadian Fairbanks Morse Co., Ltd., has been elected a director of the Eastern Townships Bank, Sherbrooke, Que., in succession to the late S. H. C. Miner.

J. H. Black, formerly Superintendent, Temiskaming and Northern Ontario Ry., took over the duties of his new position as Manager, Northern Ontario Light and Power Co., Haileybury, Ont., August 1.

U. E. Gillen, Superintendent Middle Division, G.T.R., Toronto, stated Aug. 3 that there was no truth in the report that he was about to leave the G.T.R. service to enter that of the G.T. Pacific Ry.

W. S. Laverty was presented by his colleagues in the Canadian Northern Ry. stores department, Winnipeg, with a purse of money recently, on his marriage to Miss J. Orr, of Londonderry, Ireland.

S. F. McKinnon, of Toronto, who died in London, Eng., Aug. 4, was actively engaged some years ago in the Canada National Ry. and Transport Co. project for a route from Collingwood to Toronto.

A. W. Smithers, Chairman of the Board, G.T.R., accompanied by H. Deer, Assistant Secretary of the company, arrived in Canada, Aug. 5, for the annual trip of inspection over the G.T.R. and G.T.P.R.

J. Hendry, President, Vancouver, Westminster and Yukon Ry., returned to Vancouver, recently, from a six months' tour of Europe, in which he was accompanied by Mrs. and Miss Hendry.

M. Brown was presented with a cabinet of silver by the head office staff of the British Columbia Electric Ry. recently, on the occasion of his marriage to Miss E. Wooteen, of Vancouver.

Mrs. Quick, wife of J. E. Quick, General Baggage Agent, G.T.R., submitted the designs which have been adopted by the manufacturers in Limoges, France, for the china for the new G.T.R. hotel at Ottawa.

D. Murphy, one of the Commissioners of the Temiskaming and Northern Ontario Ry., and President, Ottawa Transportation Co., has been elected a director of the Prudential Investment Co., Vancouver, B.C.

Mrs. David McNab, who died in Lethbridge, Alta., Aug. 5, aged 82, and whose funeral took place at Kingston, Ont., Aug. 10, was mother of T. McNab, Master Mechanic, Alberta Ry. and Irrigation Co., Lethbridge.

E. A. Dornan, who died at Gananoque, Ont., Aug. 12, had been station agent at Thousand Islands Jct., G.T.R., for over 30 years, and during the summers acted as District Passenger Agent, with office at Alexandria Bay, N.Y.

A. Lagault, son of a C.P.R. lineman at Smiths Falls, Ont., and D. S. Cole, Ottawa, were awarded C.P.R. scholarships in the Faculty of Applied Science at McGill University, Montreal, at the recent matriculation examination.

J. F. Stevens, formerly General Manager, Great Northern Ry., U.S., will, it is said, represent the synd'cate which is said to have taken over the National Railways of Mexico, and will probably assume the management of the lines.

The formal announcement of the conferring of the dignity of knighthood of the United Kingdom upon Wm. Whyte, Vice President C.P.R., was made in the London, Eng., Gazette, July 25, and is repeated in the Canada Gazette, of Aug. 12.

S. Fowler, a newspaper man, who died in Kingston, Ont., Aug. 20, was a son of the late John Fowler, of Cobourg, Ont., an old railway contractor, and was himself associated with the building of Brockville, Westport and Sault Ste. Marie Ry.

J. L. Doupe, Assistant Land Commissioner, C.P.R., Winnipeg, Man., read a paper on "The Development Work of a Great Railway," at the recent gathering of the National Convention of Real Estate Exchanges, at Denver, Col.

A. D. Tees, Yardmaster at the C.P.R. Angus shops, Montreal, was presented with a gold watch chain, Aug. 19, by the staff, on the occasion of his marriage to Miss Boyer. Accompanying the watch chain was a chatelaine bag for the bride.

Sir Thomas Tait, who, after his return to Canada in July, spent some time at St. Andrews, N.B., visited various parts of the province, including the Grand Lake coal area, in company with H. P. Timmerman, Industrial Commissioner, C.P.R.

J. H. Corcoran was the recipient of a presentation from the Intercolonial Ry. passenger staff at Moncton, N.B., recently, on becoming Travelling Passenger Agent for the G.T.R. in the Maritime Provinces with headquarters at Moncton, N.B.

E. M. Herr, Assoc. Am. Inst. E. E., formerly First Vice President in charge of operation of the Westinghouse Electric & Manufacturing Co., has been elected President of the same, succeeding E. F. Atkins, who declined reelection.

G. W. Vanderslice, at one time Superintendent, Manitoba Division, Northern Pacific Ry., with office at Winnipeg, and latterly Superintendent, Northern Division, Chicago Great Western Railroad, with office at St. Paul, Minn., has resigned the latter position.

C. E. A. Carr, General Manager, Quebec Ry., Light and Power Co., was recently under medical treatment at the Jeffrey Hale Hospital, Quebec. He re-

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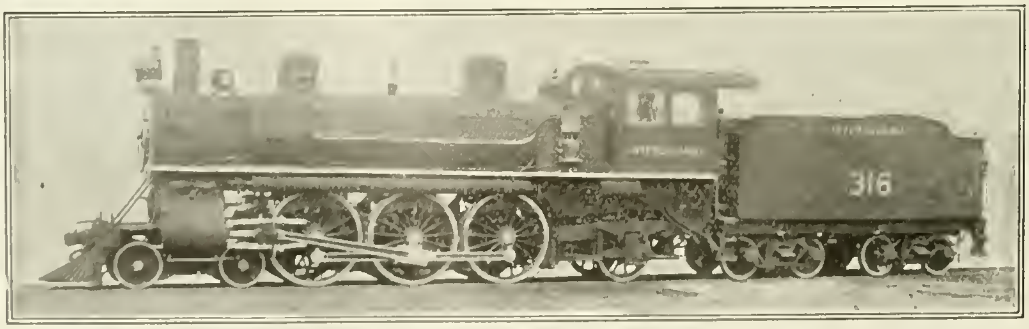

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turned to Quebec from Ste. Agathe, where he went to recuperate, towards the end of August.

The following ticket agents have joined the Canadian Ticket Agents' Association recently:—W. S. Davis, C.P.R., Oakville, Ont.; A. P. Potter, C.P.R., Tottenham, Ont.; W. J. Leonard, C.P.R., Plattsville, Ont.; G. E. Walker, G.T.R., Guelph, Ont.

Sir William Mackenzie left Toronto early in August for a trip through the west, remaining some time in Winnipeg both on the outward and homeward trips, in connection with the city's proposal to purchase the Winnipeg Electric Ry.'s properties.

Hon. R. Lemieux, heretofore Postmaster-General, has been appointed Minister of Marine and Fisheries in succession to Hon. L. P. Brodeur, appointed to succeed th late Hon. D. Girouard as a Puisne Judge of the Supreme Court of Canada.

Lieut.-Col. H. H. McLean, of the 28th New Brunswick Dragoons, and Vice President of the St. John Railway, has been granted the rank of Colonel in the Canadian Militia, in special recognition of his services in commanding the Canadian contingent at the coronation.

L. O. Armstrong, Colonization and Industrial Agent, C.P.R., started from Montreal, Aug. 3, on a lengthy trip to investigate the possibilities of developing tourist and fishing resorts in territory tributary to the C.P.R., on the north shore of Lake Superior.

John Callaghan, who has been appointed Division Engineer, G.T.P.R., at Fitzhugh, Alta., was, up to the time of his appointment, with Foley, Welch and Stewart, contractors, as Superintendent and Engineer. Prior to that he was a Division Engineer of Construction on the C.P.R.

P.H. Walsh, Superintendent, Kootenay Ry. and Navigation Co., and of the Kaslo and Slocan Ry. for the Great Northern Ry., U.S.A., and Mrs. Walsh, were the principal guests at a dinner and dance given at Kaslo, B.C., Aug. 3, in connection with their approaching removal from the town.

D. B. Hanna, Third Vice President, Canadian Northern Ry., appealed recently to the Toronto Court of Revision against the assessment of his house, Thornliebank, Castle Frank Avenue, at $55,000. The evidence showed the total cost to be $45,000 and the assessment was reduced to $42,000.

D. B. Lindsay, Secretary, Temiscouata Ry., Riviere du Loup, Que., died suddenly at Moncton, N.B., Aug. 7, aged 75. He had been connected with the railway for 22 years, and since Jan., 1901, as Secretary and General Manager, resigning the latter position, Oct., 1909, on account of ill health and advancing years.

N. S. Reeder, M. Am. Soc. M.E., Vice President of the Western Steel Car & Foundry Co., of Chicago, Ill., and formerly General Manager of the Canada Car Co., Montreal, has been elected Second Vice President of the Pressed Steel Car Co., of Pittsburgh, Pa. He will continue to make his headquarters in Chicago.

Lord Strathcona celebrated his 91st birthday in London, Eng., Aug. 6, and received numerous congratulations from various parts of the world. He subsequently joined his yacht and, with Lady Strathcona and Dr. and the Hon. Mrs. Howard, spent some time at Colonsay, his island home in the Western Hebrides.

J. C. Sheppard, who has recently been in charge of construction work on the G.T. Pacific Ry., on the Alberta-British Columbia boundary, for the contractors, has been transferred to a similar position on the Copper River-Aldermere contract. The contracts on both divisions are being carried out by Foley, Welch and Stewart.

B. B. Kelliher, Chief Engineer, G.T. Pacific Ry., was thrown out of a vehicle in which he was driving, on the route of the railway on the British Columbia-Alberta boundary, July 27, owing to the horse bolting. Mr. Kelliher escaped serious injury, but was compelled to abandon his inspection trip and to return to Winnipeg for rest and treatment.

F. G. Cromar, who has been appointed Assistant Superintendent, District 2, Lake Superior Division, C.P.R., North Bay, Ont., was born near Owen Sound, Ont., Nov. 4, 1873, and entered C.P.R. service Nov. 5, 1889, since when he has been consecutively, office boy, operator, terminal agent and general yardmaster at various points east of Fort William, latterly at North Bay, Ont.

George Eade, American Manager for Thos. Cook & Son, tourist agents, died recently in New York City after an illness of several months. He was born in London, Eng., in 1851, and was for some time in the service of the White Star Line at Liverpool. He came to America in 1886, as Manager of Thos. Cook & Son's business in the United States and Canada.

A. MacNamara, whose appointment as Assistant to Master Mechanic, G.T.P.R., Rivers, Man., was announced in our last issue, was born at Toronto, Mar. 4, 1884, and entered railway service in 1901, since when he has been in various capacities in the Master Mechanics' offices, G.T.R., Toronto and Montreal; June, 1908, to July 1, 1911, chief clerk to Master Mechanic, G.T.P.R., Rivers, Man.

E. T. Agate, C.E., M. Can. Soc. C.E., who has been appointed District Engineer for the construction of the Canadian Northern Ontario Ry., between Gowganda Jct. and Nipigon, is a graduate of Cornell University, and was connected with the C.P.R. engineering department for nine years. During the past two years has been Canadian Manager at Vancouver, B.C., for L. M. Rice & Co., railway contractors, Seattle, Wash.

M. B. Carlin, ex-General Manager of the Columbia River Lumber Co., Ltd., and now a member of the firm of Grant Smith & Co., which has a contract for building a portion of the Canadian Northern Pacific Railway on Vancouver Island, is President, and J. D. McArthur, railway contractor, Winnipeg, is a director of the Canadian Pacific Lumber Co., Ltd., which recently made an issue of £350,000 six per cent. 1st mortgage bonds in England. Accompanying the prospectus was a report on the Columbia River Lumber Co.'s property by F. W. Jones, ex-director of that company and formerly assistant to the Manager, C.P.R. Western lines.

W. B. Bulling, Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, who has been obliged to retire temporarily from active service owing to ill health, was born at Montreal, Sept. 16, 1858, and entered G.T.R. service there in 1872. He resigned in 1880 to enter the Chicago and North Western Ry. service in Chicago, where he only remained a short time, returning to the G.T.R. He was appointed chief clerk, General Freight Department, C.P.R., Montreal, in 1883; District Freight Agent in 1889; General Freight Agent, Eastern Division, in 1892, and Assistant Freight Traffic Manager, Eastern Lines, in July, 1901.

E. N. Todd, who has been appointed Division Freight Agent, Eastern Division, C.P.R., Montreal, was born at Huntington, Que., Oct. 17, 1879, and entered C.P.R. service May, 1896, as junior clerk, Foreign Freight Department, since when he has been, from June, 1899, to May, 1900, chief import clerk, same department; May, 1900, to Aug., 1901, in service with the Franco-Canadian Steamship Line; Aug., 1901, to 1904, chief correspondence clerk, Foreign Freight Department, C.P.R.; 1904 to Jan., 1909, Export and Import Freight Agent, C.P.R., Toronto; Jan., 1909, to Sept. 1, 1911, Export Freight Agent, C.P.R., Montreal.

J. A. Carroll, who has been appointed Road Foreman of Locomotives, District 1, Canadian Northern Ry., was born at Chilton, Wisc., Dec. 14, 1865, and entered railway service in 1885, since when he has been, to 1887, fireman, Wisconsin Central Ry.; 1887 to 1888, fireman, Atlantic and Pacific Ry., now part of the Sante Fe System; 1888 to 1900, locomotive engineer, same road; 1900 to 1907, Traveling Engineer, Albuquerque Division, same road; 1907 to Aug., 1908, Locomotive Foreman, C.P.R., Outremont, Que.; Aug. 1908, to Aug., 1911, District Master Mechanic, District 2, Lake Superior Division, C.P.R., White River, Ont.

J. H. Hughes, who was recently appointed Superintendent, District 2, Lake Superior Division, C.P.R., White River, Ont., was born at Georgetown, P.E.I., October 7, 1865, and entered railway service, October 1885, since when he has been, to August 7, 1886, brakeman, Intercolonial Ry.; August 7, 1886, to January, 1888, freight brakesman, C.P.R., North Bay, Ont.; January, 1888, to October 1, 1902, conductor and Rule Instructor, C.P.R.; October 1, 1902, to March, 1907, Trainmaster, District 1, Lake Superior Division, C.P.R.; March 1, 1902, to May 6, 1911, Assistant Superintendent, and latterly Acting Superintendent, same district.

W. H. Allison, who was recently appointed District Freight Agent, C.P.R., Saskatoon, Sask., was born at London, Ont., July 22, 1885, and entered C.P.R. service, August 1, 1901, since when he has been, to November, 1901, shed boy; November 1, 1901, to May 7, 1906, messenger, billing clerk, abstract clerk, rate clerk and chief clerk, successively, London, Ont.; May 7, 1906, to March 15, 1907, correspondence clerk, Freight Department, Regina, Sask.; March 15, to May 1, 1907, export clerk, General Freight Office, Winnipeg; May 1 to June 1, 1907, claims clerk, same office; June 1, 1907, to January 1, 1909, chief clerk to General Freight Agent, Winnipeg; January 1, 1909, to June 15, 1911, City and Travelling Freight Agent, Regina, Sask.

J. H. Black, whose portrait appears on the first page of this issue, was born near Smiths Falls, Ont., July 8, 1874, and entered railway service, Feb. 16, 1896, since when he has been, to Sept., 1896, feright checker, C.P.R.; Sept., 1896, to July, 1898, telegraph operator, C.P.R.; July, 1898, to Jan., 1902, agent, C.P.R. Sharbot Lake; Jan., 1902, to Nov., 1904, Auditor, Kingston and Pembroke Ry., Kingston, Ont.; Nov., 1904, to Aug. 1, 1911, General Freight and Passenger Agent, Superintendent and Traffic Manager, and Superintendent, successively, Temiskaming and Northern Ontario Ry., North Bay, Ont. He resigned the last named position, Aug. 1, to become General Manager, Northern Ontario Light and Power Co., Haileybury, Ont.

Hon. E. B. Garneau, who died in Quebec, Aug. 18, after a short illness from typhoid fever, was a director of the Richelieu and Ontario Navigation Co., and of the Quebec Ry., Light, Heat and Power Co., and was associated with other transportation interests having Quebec as the centre of their operations.

Press dispatches from Kansas City, Mo., Aug. 31, stated that A. F. Dillinger, formerly assistant chief operating officer of the Board of Railway Commis-

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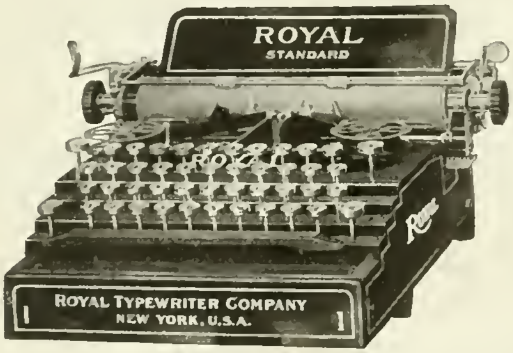

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sioners. Ottawa, had been placed under arrest there, under a warrant issued at Des Moines, Iowa. A Mrs. Rose Morgan, in whose company he was, was arrested under a similar warrant at the same time. Mrs. Dillinger, who had travelled from Ottawa, was present at the arrest. Nothing further has transpired, and Ottawa papers state "the inference is that Mr. and Mrs. Dilinger have effected a reconciliation."

W. M. Kirkpatrick, who has been appointed Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, is a son of the late Sir Geo. Kirkpatrick, at one time a director of the C.P.R. He was born at Kingston, Ont., Oct. 8, 1874, and entered C.P.R. service, Mar. 7, 1892, in the Vice-President's office, and up to July, 1899, he filled various positions in the Chief Engineer's office, Foreign Freight Department, Montreal, and General Freight Agent's office, Toronto; July, 1899, to Dec., 1902, clerk in Fourth Vice President's office, Montreal; Dec., 1902, to Apr., 1905, Assistant General Freight Agent, Pacific Division, Vancouver, B.C.; Apr., 1905, to Feb., 1907, Export Freight Agent, Montreal; Feb. to Dec., 1907, General Freight Agent, Atlantic Division, St. John, N.B.; Dec., 1907, to Apr., 1911, General Freight Agent, Through Traffic, Ontario Division, Toronto; Apr. to Aug. 21, 1911, General Freight Agent, Eastern Lines, Montreal.

A. W. Wheatley, who has been appointed General Manager, Canadian Locomotive Co., Kingston, Ont., was born at Ashford, Kent, Eng., and served an apprenticeship as machinist in the South Eastern Ry. shops there. In 1892 he went to the U.S., since when he has been, to 1894 in Northern Pacific Ry. service at St. Paul, Minn.; 1894, same service at Staples, Minn.; 1895 to 1900, Roundhouse Foreman, same place; 1900 to 1902, General Foreman, same road, Livingstone, Mont.; Dec., 1902, to June, 1903, Master Mechanic, same road, Yellowstone Division, Glendive, Mont.; June, 1903, to Mar., 1904, General Master Mechanic, same road, St. Paul, Minn.; Feb., 1905, to Mar., 1906, Shop Superintendent, Chicago, Rock Island and Pacific Ry., Moline, Ill.; Mar., 1906, to June 1, 1907, Assistant Superintendent of Motive Power, Union Pacific Rd., Omaha, Neb.; June 1 to Oct., 1907, General Inspector, American Locomotive Co., Schenectady, N.Y.; Oct., 1907, to Nov., 1910, Manager, Montreal Locomotive Works, Ltd., Montreal; Nov., 1910, to Aug., 1911, Manager, American Locomotive Co., Dunkirk, N.Y.

Charles E. Morgan, City Passenger & Ticket Agent, G.T.R., Hamilton, Ont., died there, August 20, aged 69, after having been in failing health for some time. He was born in Hamilton and lived there all his life, with the exception of a few years spent in Guelph, Ont. After leaving school he went into the banking service and then became Great Western Ry. ticket agent, with offices in Hamilton and Toronto. On the absorption of the G.W.R. by the G.T.R. he gave up his Toronto office and confined himself to the Hamilton business. He also had a number of steamship and other ticket agencies and did a large and successful business. He is survived by one son, Charles R., and two daughters, Mrs. W. F. Robinson and Mrs. W. E. Daniel. The funeral at Hamilton was largely attended by railway and steamship officials. E. de la Hooke, Secretary, representing the Canadian Ticket Agents' Association, of which Mr Morgan waws a member for many years and in which he served as a member of the executive committee as Vice President and as president. C. R. Morgan will continue his father's business and has already been appointed ticket agent of many of the most important steamship lines.

A. R. Macdonell, whose death in England on July 15 was mentioned in our last issue, was born at Williamstown, Glengarry county, Ont., Dec. 20, 1855. He commenced his railway career on the Intercolonial Ry. in the seventies, and then, in partnership with his father in 1879, took a contract on section B of the Canadian Pacific Ry. east of Winnipeg. After finishing that work, he went east to Port Arthur and took some heavy contracts on the C.P.R. Following that, in partnership with M. J. Hogan, of Montreal, he constructed the Baie des Chaleurs Ry. The next contrast he was connected with was in partnership with his father-in-law, J. Ryan, on the Soulanges canal. Following this, he took the contract for the construction of the Temiskaming and Northern Ontario Ry. from North Bay practically to Cochrane. This contract, with the exception of the National Transcontinental Ry. contracts, was the heaviest work he undertook. In 1907, in partnership with M. J. O'Brien, he took a number of contracts on the National Transcontinental Ry., amounting in all to some 400 miles, of which something over 300 had been completed at the time of his death. He went to England on the advice of his physician, who thought the change would be beneficial to his health, and he had expected to return to Canada next autumn.

H. T. Hazen, Chief Engineer, Duluth, Winnipeg and Pacific Ry., Duluth, Minn., who has also been appointed District Engineer, Canadian Northern Ontario Ry., Port Arthur easterly, was born at Truro, N.S., Mar. 14, 1870, and commenced his railway career on survey work on the Hants Central Ry., Truro, N.S., since when he has been, to 1893, roadman and Resident Engineer on location and construction, Ottawa and Gatineau Ry.; 1893 to 1894, Locating Engineer, Restigouche and Victoria Colonization Ry.; 1894, Locating Engineer, New Brunswick Trunk Line Ry.; 1894 to 1895, on topographical survey of Riviere du Lievre; 1895 to 1896, Resident Engineer, St. Lawrence and Adirondack Ry.; 1896 to 1897, Resident Engineer, Cobourg, Northumberland and Pacific Ry.; 1897 to 1898, Resident Engineer, Montreal and Ottawa short line, C.P.R.; 1898 to 1899, Resident Engineer, C.P.R. double-tracking; 1899, Assistant Engineer, Great Northern Ry. of Canada; 1899 to 1900, Assistant Engineer, Ottawa and Gatineau Ry.; 1900 to 1904, Assistant Engineer, Grand Trunk Ry.; 1904, in charge of Exploration surveys, Midway and Vernon Ry.; 1904, Superintendent and Engineer for contractor, Ragged Rapids dam on Severn River; Jan. 1, 1905, to Oct., 1909, with Canadian Northern Ry. as Division Engineer, location Parry Sound to Sudbury, Division Engineer of construction, Parry Sound to French River and Key Branch, and Engineer in charge Garneau to Quebec, St. Jerome-Montfort Branch and St. Jacques Branch; Oct., 1909, he was appointed Chief Engineer, Duluth, Winnipeg and Pacific Ry., and since July, 1911, has also been District Engineer, Canadian Northern Ontario Ry., Port Arthur easterly for about 275 miles.

◆

F. S. Darling, M. Can. Soc. C.E., formerly of the C.P.R. Engineering Department, is now Assistant of the Chief Engineer, Boston & Maine Rd., at Boston, Mass.

The Government Railways Managing Board announced at Moncton, N.B., Aug. 21, that increases of wages aggregating nearly $40,000 a year would be granted to the clerks in its employ.

Robert Gardiner, Locomotive Foreman, Grand Trunk Pacific Ry., Melville, Sask., writes:—"I have read the Railway and Marine World for the past four years and would not like to be without it."

TRANSPORTATION APPOINTMENTS.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us

Canadian Northern Ry.—J. A. Carroll, heretofore District Master Mechanic, C.P.R., White River, Ont., has been appointed Road Foreman of Locomotives, District 1, C.N.R. Headquarters, Rainy River, Ont.

H. J. Cowie, heretofore European Traffic Manager, has been appointed European Freight Agent, C.N.R., and General Freight Agent, C.N. Steamships. Offices, London, Liverpool and Bristol.

P. A. VanEss and Co., Rotterdam, Holland, have been appointed Freight Agents for the Continent of Europe.

Canadian Pacific Railway.—W. M. Kirkpatrick, heretofore General Freight Agent, has been appointed Assistant Freight Traffic Manager, with general supervision over all matters pertaining to rates and divisions, and all matters under the jurisdiction of the Board of Railway Commissioners, Trans-Continental Freight Bureau, etc., vice W. B. Bulling, who has been obliged to retire from active service temporarily owing to ill health. Office, Montreal.

H. E. Macdonell, heretofore Division Freight Agent, Eastern Division, Montreal, has been appointed General Freight Agent, Eastern Lines, in charge of the solicitation of freight traffic and of interchange with connecting lines, vice W. M. Kirkpatrick, promoted. Office, Montreal.

E. N. Todd, heretofore Export Freight Agent, has been appointed Division Freight Agent, Eastern Division, with territory, Chalk River and east; also Smiths Falls to Newport, Vt., Megantic and Quebec, Que., including branch lines, vice H. E. Macdonell, promoted. Office, Montreal.

F. G. Frieser, heretofore Assistant Foreign Freight Agent, New York City, has been appointed Export Freight Agent, vice E. N. Todd, promoted. Office, Montreal.

G. T. Rooke has been appointed Inspector of Transportation, Eastern Lines. Office, Montreal.

J. B. Smith has been appointed Assistant Inspector of Transportation, Eastern Lines. Office, Montreal.

H. A. Plow, heretofore chief clerk, Assistant Freight Traffic Manager's Office, Montreal, has been appointed District Freight Agent, with jurisdiction over territory, Chalk River, and Smiths Falls east to Buckingham, Caledonia Springs and Kempton, including the Eganville, Waltham, Maniwaki, Brockville and Prescott subdivisions, reporting to the Division Freight Agent, Montreal. Office, Ottawa, Ont.

W. H. Ivory has been appointed acting Chief Dispatcher at Havelock, Ont.

P. G. Cromar, heretofore Agent and General Yardmaster, North Bay, Ont., has been appointed Assistant Superintendent, District 1, Lake Superior Division, vice J. H. Hughes, promoted. Office, North Bay, Ont.

J. V. McNab, heretofore Resident Engineer at Moose Jaw, Sask., is reported to have been transferred to Saskatoon, Sask., vice R. C. Smith, transferred to Moose Jaw.

A. P. Stretton has been appointed Local Right of Way and Lease Agent, with jurisdiction in all local right of way and lease matters affecting the operating department in the Alberta Division. Office, Calgary.

G. Moth, heretofore in the locomotive department, Lethbridge Alta, has been appointed acting District Master Mechanic, District 1, Alberta Division, vice R. D. Smith, on leave of absence. Office, Medicine Hat, Alta.

J. W. Chesterman has been appointed Assistant Car Foreman, Revelstoke, B.C. This is a new position.

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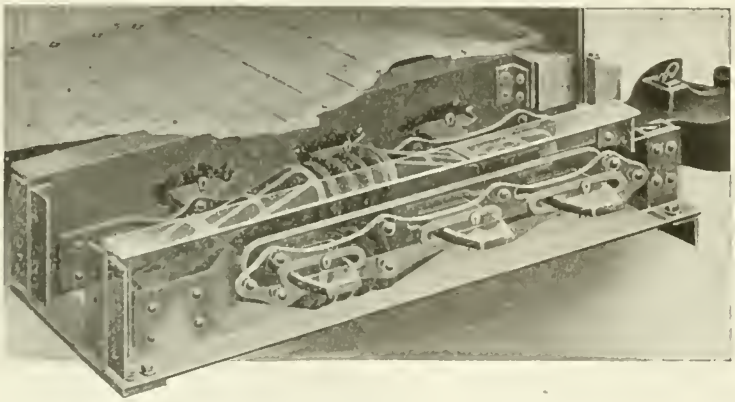

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L. D. Cole has been appointed Assistant Foreign Freight Agent at New York City, vice F. G. Frieser, transferred to Montreal. Office, 1 Broadway.

G. A. Walton, heretofore General Agent, Passenger Department, Spokane, Wash., has been appointed General Agent, Passenger Department, Chicago, Ill., vice A. B. Calder, resigned to enter private business in Winnipeg, Man.

Central Vermont Ry.—C. M. Hays, President, G.T.R. and G.T.P.R., who resigned the Presidency of the C.V.R. recently, as announced in our last issue, has been elected Chairman of the Board.

Fort Garry Union Station, Winnipeg.—J. Bannerman, heretofore in charge of Canadian Northern transfer service at Winnipeg, is reported to have been appointed station master, Fort Garry Union Station, Winnipeg.

Grand Trunk Pacific Ry.—J. Birse has been appointed Road Foreman, with territory from Westfort, Ont., to Transcona, Man., vice D. Miller, acting Road Foreman, assigned to other duties. Office, Westfort, Ont.

I. A. Macpherson has been appointed Assistant to the General Superintendent, vice R. D. Thomas. Office, Winnipeg.

F. G. Adams, heretofore Travelling Freight Agent, G.T.R., Winnipeg, Man., has been appointed Commercial Agent, G.T.P.R., Regina, Sask., vice W. E. Mann, resigned.

W. B. Cronk, formerly Superintendent, District 2, Lake Superior Division, C.P.R., White River, Ont., has been appointed Superintendent, G.T.P.R., with jurisdiction over the Melville-Regina, Regina-Boundary and Regina-Moose Lines. Office, Regina, Sask.

John Callaghan, heretofore Superintendent and Engineer for Foley, Welch and Stewart, G.T.P.R. contractors, has been appointed Division Engineer, G.T.P.R., at Fitzhugh, Alta.

The following agents have been appointed:—Redditt, Ont., L. W. Graham; Hinton, Alta., H. J. Toby.

In announcing the appointment of outside agents at Fort William, Ont., in our last issue, the name was given as R. Street Co., instead of the Ray Street Co.

Grand Trunk Ry.—J. H. Corcoran, heretofore in Intercolonial Ry. Passenger Department, has been appointed Travelling Passenger Agent. Office, Moncton, N.B.

W. Mewing, heretofore in General Freight Department, G.T.P.R., Winnipeg, has been appointed Travelling Freight Agent, G.T.R., vice F. G. Adams, appointed Commercial Agent, G.T.P.R., Regina, Sask. Office, Winnipeg.

The following agents have been appointed:—Compton, Que., R. F. Findlay; Doon, Ont., W. D. Harris; Pottersburg, Ont., T. H. Lashbrook; Copetown, Ont., E. H. Vrooman; Thorold, Ont., W. J. Meredith (acting); Seaforth, Ont., W. R. Plant. Outside agencies—Holland Landing, Ont., J. L. O'Brien; St. Marys, Ont., A. Willard; New York City, International Sleeping Car Co.

Great Northern Ry.—H. A. Noble has been appointed General Passenger Agent, vice S. J. Ellison, resigned to engage in other business. Office, St. Paul, Minn.

Intercolonial Ry.—W. P. Mills, heretofore acting Roadmaster, has been appointed Roadmaster, Cape Breton Division, vice S. Fraser, deceased. Office, Sydney, N.S.

John Savage has been appointed acting Roadmaster, Windsor and Dartmouth Branches, vice John McLellan, superannuated. Office, Windsor, N.S.

A. Astle, heretofore acting Roadmaster, has been appointed Roadmaster, Canada Eastern Division, vice A. W. Grass, resigned. Office, Fredericton, N.B.

New York Central Fast Freight Lines, Merchants' Despatch.—Carl Howe, Manager, has removed his office from Buffalo, N.Y., to 632 La Salle Street Station, Chicago, Ill., to which address all correspondence is to be sent, except that in connection with the tracing of cars. The Car Department, handling tracing of all cars, will continue at 708 Brisbane Building, Buffalo, under the supervision of F. B. Hannis, Car Accountant, to whom such communications should be addressed. The following lines are under Mr. Howe's jurisdiction:—Red Line, White Line, Blue Line, Canada Southern Line, West Shore Line, Nickel Plate Line, North Shore Despatch, Merchants Despatch-Dairy Line, Rutland-Michigan Central Line, Jersey Central-Lake Shore Despatch, Jersey Central-Michigan Central Despatch, Merchants Despatch-Pere Marquette Line.

Northern Navigation Co.—W. R. Burgin has been appointed Travelling Freight and Passenger Agent, to cover the territory west of Toronto including the G.T.R. Northern Division. Office, Sarnia, Ont.

S. Hewitt has been appointed Traveling Freight and Passenger Agent for the city of Toronto, and other special work. Office, Union Station, Toronto.

Quebec Railway, Light, Heat & Power Co.—H. G. Matthews, heretofore Secretary-Treasurer of the Marconi Wireless Telegraph Co. of Canada, has been appointed Assistant to the President of the Quebec Railway, Light, Heat & Power Co., with office at Quebec. We are advised that this appointment was made owing to the President, Rodolphe Forget, being unable to spend any time in Quebec, in consequence of his diversified interests.

Quebec, Montreal and Southern Ry.—G. F. Lavesque has been appointed Master Mechanic, vice A. C. West, resigned. Office, Sorel, Que.

Union Pacific Rd., Southern Pacific Co., Oregon Short Line Ry., Oregon-Washington Rd. and Navigation Co. G. W. Vaux, heretofore Travelling Passenger Agent, Toronto, has been appointed Canadian Passenger Agent. Office, Toronto.

White Pass and Yukon Route.—F. B. Wurzbacher has been appointed General Agent at Seattle, Wash., with jurisdiction over traffic matters in the Vancouver office, vice I. W. Dudley, resigned.

White Star-Dominion Line.—M. A. Overend, heretofore Travelling Freight Agent, Toronto, has been appointed Freight Agent for Ontario, vice G. W. Torrance, deceased. Office, Toronto.

Telegraph and Cable Matters.

Alex. E. Reoch has been appointed Secretary-Treasurer, Marconi Wireless Telegraph Co. of Canada, at Montreal, vice H. G. Matthews, resigned to enter Quebec Ry, Light, Heat and Power Co.'s service.

W. Marconi, of the Marconi Wireless Telegraph Co., arrived in Montreal, Aug. 14, by the White Star-Dominion Line s.s. Laurentic. It was reported that during the trip he carried out a number of experiments with wireless telegraph apparatus, which enabled him to keep in communication with the wireless telegraph station at Poldhu, Cornwall, throughout the entire voyage.

The Ottawa city council is planning the construction of conduits for the carrying of underground wires. Estimates recently considered cover the building of conduits for the high and low tension wires on a number of streets, for $45,000. It is stated that the work will not be undertaken until the spring, and in the meantime the objections of the C.P.R. Telegraphs and will form the subject of a conference.

The C.P.R. has opened telegraph offices at Chelsea, Hebert, Ivry and Timiskaming, Que.; Bobs, Dorion, Espanola, French, Moffat and Point au Baril, Ont.; Bredenburg, Candahar, Hume, Luseland, Salvador, Secretan and Trossachs, Sask.; and has closed its offices at Clarenceville, Eastman, Henryville, L'Ange Gardien East, Mount Johnson, Noyan Jct., Rougemont, St. Aime, Ste. Angele, St. Barnabe, St. Damase, St. Judes. St. Louis, St. Robert and Sabrevois, Que.; Hurkett and Rutter, Ont.

The bill which has been introduced into the British House of Commons to extend the Pacific Cable Act, 1901, also authorizes a submarine cable to be laid between Australia and New Zealand, as already sanctioned by the contributing Governments, and any other extensions, connections or rearrangements in, or near the Pacific Ocean, which, in the opinion of all the contributing Governments, are necessary or expedient for the improvement of the Pacific Cable Board's undertaking. The contributing Governments are those of Great Britain, Canada, Australia and New Zealand.

Among the Express Companies.

The Canadian Northern Ex. Co., which was recently fined $1,000 for contempt of court in connection with the delivery of certain papers referring to the last Manitoba elections, has withdrawn its appeal against the judgment, and has paid the fine.

E. A. Wellwood, route agent, Canadian Ex. Co., between Port Huron and Detroit, Mich., and Toronto, pleaded guilty to a series of thefts at Port Huron, Aug. 16, and was later sentenced for an indeterminate period from two to five years in Iona prison.

The Dominion Ex. Co. is objecting to the extension of the limits for delivery in Calgary, Alta., on the ground that if compelled to make free deliveries to isolated portions within the city limits, a greater expense would be involved than would be covered by the amount received for carriage of the goods.

The Canadian Ex. Co.'s return to the U.S. Interstate Commerce Commission for May 31st shows total receipts from operation, $236,710; net operating revenue, $26,487, against $184,476 total receipts from operation and $8,847 net operating revenue for May, 1910. The aggregate total receipts from operation for 11 months ended May 31 were $2,414,761; net operating revenue, $235,137, against $2,235,086 total receipts from operation and $224,652 net operating revenue for same period 1909-10. The mileage operated over for the 1910-11 period was 7,362 on steam railways, and 162 other lines, against 6,520 steam and 2,792 other lines, for the 1909-10 period.

The Wells, Fargo and Co. express service was put into operation over an additional 16,000 miles of territory, Aug. 1. Included in the lines now operated over is the Wabash Ry., divided as follows:—from Detroit, Mich., to Buffalo, N.Y., not including Buffalo, nor Niagara Falls, and Milan to Detroit, Mich., is included in District 2, E. B. Thomas, Route Agent, with headquarters at Detroit, Mich.; from State Line to Roanoke, and Attica to Covington, Ind., included in District 3, G. E. Mikesell, Route Agent, with headquarters at Huntington, Ind.; from Hammond, Ind., to Monclova. on Fort Wayne, mond, Ind. to Monclova, and Fort Wayne, Ind., to Whitehouse, O., included in District 4, F. E. Brownell, Route Agent, with headquarters at Hammond, Ind. The report that the Pacific Ex. Co. had been taken over is incorrect. This report is accounted for by the fact that Wells, Fargo and Co. had purchased some of the Pacific Ex. Co.'s material and property at certain points.

A HISTORY OF THE PAY-AS-YOU-ENTER CAR

AND ITS LESSON

The following cities are using Pay-As-You-Enter Cars: Chicago City Railway, 839 cars; Chicago Railways, 1,328; Public Service Corporation of New Jersey, 466; New York City Railway, 555; Third Avenue Railroad, New York, 550; International Railway, Buffalo, 200; Buffalo & Lake Erie Traction Co., 10; Washington Ry. & Elec. Co., Washington, D.C., 100; Capital Traction Co., Washington, D.C., 51; Municipal Traction Co., Cleveland, Ohio, 180; United Rys. Co. of St. Louis, Missouri, 310; Portland Ry., Lt. & Pwr. Co., Portland, Ore., 25; Columbus Ry. & Lt. Co., Columbus, Ohio, 10; Wichita R.R. & Lt. Co., Wichita, Kan., 14; Jacksonville Elec. Co., Jacksonville, Fla., 5; Dallas Elec. Co., Dallas, Texas, 20; Houston Elec. Co., Houston, Tex., 41; Northern Texas Trac. Co., Ft. Worth, Texas, 25; Ithaca Street Ry., Ithaca, N.Y., 2; Peoria Street Ry., Peoria, Ill., 13; Urbana & Champaign Ry., Champaign, Ill., 3; Mutual Lt. & Water Co., Brunswick, Ga., 4; Rochester Ry. Co., Rochester, N.Y., 25; Ft. Dodge, Des Moines & So. R.R. Co., 2; Muskogee Elec. Trac., Muskogee, Okla., 6; Union Traction Co., Dubuque, Ia., 4; Topeka Ry. Co., Topeka, Kas., 12; United Rys. & Elec. Co., Baltimore, Md., 32; Detroit United Ry., Detroit, Mich., 225; Cincinnati Traction Co., Ohio, 50; Montreal Street Railway, 400; British Columbia Elec. Ry., 30; Calgary Street Railway, 18; Metropolitan Street Ry., Kansas City, Mo., 50; Edmonton Radial Ry., 4; San Antonio Traction Co., San Antonio, Tex., 6; Rockford & Int. Ry., Rockford, Ill.; Cairo Street Ry. & Lt. System, 6; Des Moines City Railway, Iowa, 12; Macon Ry. & Lt. Co., Macon, Ga.; Virginia Ry. & Power Co.; Columbia Elec. St. Ry. & Lt. & Power Co., Columbia, S.C.; Aurora, Elgin & Chicago Ry., Chicago, Ill.; Wichita Falls Traction Co., Wichita Falls, Tex.; Ottawa Electric Ry. Co., Ottawa; Bloomington & Normal Ry. & Lt. Co., Bloomington, Ill.; Corsicana Transit Co., Corsicana, Tex.; Compania Electrica y de Ferrocarriles, Mexico; The Milwaukee Elec. Ry. & Lt. Co., Milwaukee, Wis.; Springfield Street Ry. Co., Springfield, Mass.; Lynchburg Traction Co., Lynchburg, Va.; Chicago & Southern Traction Co., Chicago, Ill.; Calumet & South Chicago Ry. Co., Chicago, Ill.

THE LESSON

taught by this widespread use of Pay-As-You-Enter Cars is obvious. Increased Revenue, Accident Elimination and Schedule Improvement have been demonstrated in every case. Isn't all this sufficient to show that it always pays to operate the Pay-As-You-Enter Car? Why not remodel some of your present cars?

We license manufacturers and railways to build and use the Pay-As-You-Enter Car, the Patents on which are owned by

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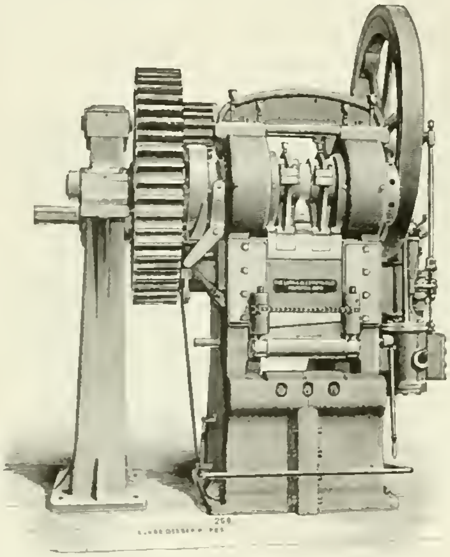

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Association's Office, 70 Bond St., Toronto.

Executive Committee.—E. P. Coleman, Manager of Railways, Dominion Power and Transmission Co.; H. M. Hopper, General Manager, St. John Ry.; J. E. Hutcheson, Superintendent, Ottawa Electric Ry.; C. B. King, Manager, London St. Ry.; D. McDonald, General Manager, Montreal St. Ry.; M. N. Todd, President, Galt, Preston and Hespeler St. Ry.

Assistant Secretary, Aubrey Acton Burrows, Secretary and Business Manager Railway and Marine World.

Official Organ, The Railway and Marine World.

The Use of Tee Rails in Street Railway Construction.

By F. G. Simmons.

(CONTINUED FROM AUGUST ISSUE.)

The author wishes to call particular attention to this New York engineer's words when he says, "There is no difficulty in laying a smooth top paving of a type suited for any vehicular traffic in connection with the use of a standard section of tee rail, and if properly designed and constructed the pavement should not wear in ruts." This is the meat in the nutshell. It can be done and that without difficulty, but it does call for co-operation between the railway and the municipal engineers.

L. W. Rundlett, Commissioner of Public Works of St. Paul, Minn., wrote the committee as follows: "Instead of answering the questions exactly as given, I would say in relation to the rail section to be used for street car traffic that, in my opinion, the tee rail best suits all conditions. In the first place, I think it is the best rail that can be put down, looking at it from the street car standpoint, and I am of the opinion that in paved streets the pavement can be so laid that it gives equally satisfactory results, as far as the city is concerned, as the grooved rails, and on unpaved streets it causes no more obstruction than the grooved rail, although it is evident that teams can be driven along the line of the grooved rail better than on the tee rail; but that is not the result desired by a city, as, at present, what we expect of the street car companies is rapid transit, and we do not wish to invite any team traffic along the tracks to obstruct them. As the tracks are laid in this city on the paved streets, I will say that we have never experienced any trouble and I have never received any complaints either from teamsters or from the public in general, and I do not think there is any particular difference whether the traffic is light or heavy. The construction of the pavement between the tracks and on the outside of same must be first class when the tee rail is used, and the same thing might be said of any rail. In regard to the height of the rail, it must be sufficient to give ample room to put in the pavement on paved streets, and the 7-in. 91-lb. standard rail which is used by the street car company at the present time is perfectly satisfactory. On streets where there is no pavement, a 4-in. rail has been found sufficient."

City Engineer Andrew Rinker, of Minneapolis, Minn., also wrote the committee to the effect that Minneapolis considered the tee rail the best for use in city streets.

Here are the responsible city engineers of two of our most prominent cities placing themselves on record as unqualifiedly in favor of tee rail, and as these cities have had many years experience with it, their opinions may be considered incontrovertible. Minneapolis in particular is today, in the opinion of the author, nearly, if not quite, the best paved city of any considerable size in the United States.

At a meeting of the Southwestern Electrical and Gas Association at El Paso, Texas, on May 7, 1908, Mark Lowd, of the Stone & Webster Engineeering Corporation, in a paper on track construction, had the following to say: "It is the intention of this article to deal briefly with tee rail construction in paved streets, this being the type of construction which the writer believes to be the best for the operating companies from the standpoint of first cost and economy of operation. In many cities the type of rail is designated by ordinance, which unfortunately in most cases specifies grooved rail. These ordinances were largely the result of a lack of attention and inexperience on the part of the railway companies in the early days of electrical traction. Emerging from the days of the horse car to the heavier electric car, the railways were confronted with the problem of securing a rail suitable for the new conditions confronting them. The old strap rail, the light tee rail, and the light girder rail were all found inadequate, it being impossible to maintain either a satisfactory rail or a well kept pavement. The manufacturers gave us the girder rail of greater height and weight, in various forms, and the grooved rail, also of greater weight. It is probable that the first good results in paved streets were obtained by the use of the girder and grooved rails, and this is the principal reason that so many cities demand the use of such rails. With the increase in weight and height of the tee rail occasioned by the needs of the steam railways for heavier rail to meet the requirements of high speed and greater weights, there came an opportunity to demonstrate that the tee rail could be used in any kind of paved street with excellent results, both in regard to car operation and maintenance of roadway. The tee rail has many advantages over either the girder or grooved types, and no disadvantages that are known to the writer. It is preferred for the following reasons:

FROM THE PRESIDENT OF THE CANADIAN STREET RAILWAY ASSOCIATION.

James Anderson, General Manager, Sandwich, Windsor and Amherstburg Railway, writes from Windsor, Ont., as follows:

"I take pleasure in saying that your paper gives more reliable and up-to-date news of the railways and railway men than any other publication of its kind. What is true of the railway side, must also be true of the marine interests, and you are deserving of the patronage of both classes."

"It is designed on better mechanical lines; there is no eccentric loading as in the case of the grooved rail.

"There is no excessive waste of metal when heavy traffic and large wheel flanges are to be considered. In many cities grooved rails weighing from 125 lb. to 150 lb. per yard have been used, where an 80 lb. or 90 lb. tee rail would have been sufficient.

"The flangeway is always ready for an increase in size of wheel flanges of the local cars, or for the interurban car with the large flanges necessary for high-speed work.

"The tee rail is not as noisy.

"Car wheel maintenance is less.

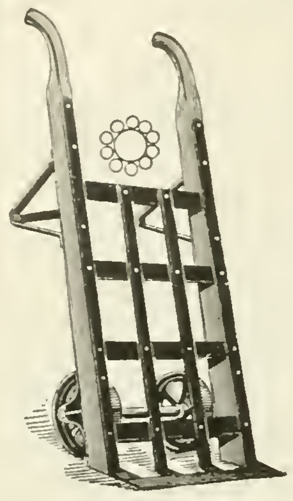
"The tee rail has a longer life, particularly at the joint, which is the vital point of any rail.

"It is more easily handled, and high-priced shop curves are unnecessary.

"A good vitrified brick or paving block makes a most satisfactory form of pavement, especially in the south and southwestern country. If asphalt or bitulithic pavement is used, do not under any circumstances permit the asphalt or bitulithic to be laid against the rail. Use a brick or stone liner against the rail. This will not only permit the tightening of a joint-bolt or the renewal of a bond without disturbing the adjoining pavement, but will also make a more durable job. The use of the special or nosed brick is unnecessary and rather unsatisfactory. The regular brick laid as shown in the accompanying cross-section of tee rail construction will give far better results. This construction has been used with great success in Milwaukee and other cities. A rich cement grout makes the most satisfactory filler for brick or stone pavement."

W. A. Heindle, Superintendent of Construction for the Tri-City Ry. Co., in the cities of Davenport, Rock Island and Moline, Ill., says: "We are limited in our Davenport work to a 7-in. tee rail, while we are compelled to use a 7-in. girder rail on the Illinois side of the river. All things considered the high tee rail will be found most suitable and serviceable provided a satisfactory form of pavement be installed. The selection of paving materials rests principally with the city authorities. While asphalt presents the neatest appearance, it is hardly suitable for track work, as it disintegrates under vibration and water. Where asphalt must be laid, however, it is advisable to lay longitudinally, three or four courses, or a toothing course of brick, adjoining the rail. Creosoted wood block is coming into extensive use, and is very satisfactory paving material, but somewhat expensive. With care the wooden block can be laid so that any swelling due to moisture will not affect the track gauge All things considered, vitrified paving brick seems to afford the best material for the purpose. The use of tee rail may require special brick for forming the flangeway. Where vehicles use the railway right-of-way, these special bricks will cut out in the course of two or three years and the pavement will become unsightly. Better workmanship can be secured by using beveled stone blocks for forming the flangeway or by using standard brick, starting the first course entirely beneath the rail head and giving the pavement the proper crown. This is satisfactory, provided the depth of wheel flange is not greater than the depth of rail head."

The city of Detroit, which was formerly a firm advocate of the girder type of rail, sent out a committee two years ago to investigate the merits of tee rail construction. This committee consisted of members of the city council and the Assistant City Engineer. They visited Grand Rapids, Milwaukee, St. Paul and Minneapolis. Upon their return they reported the result of their investigations to the city council and after reciting the subject matter obtained while on the trip, they said: "We therefore recommend that the Commissioner of Public Works grant the company permission to



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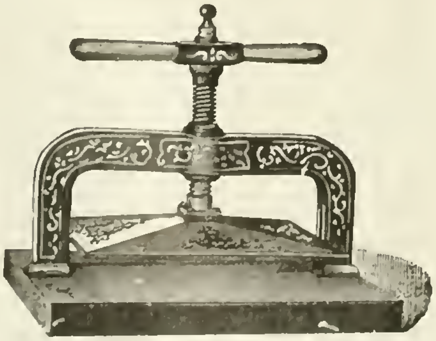

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reconstruct the tracks on Jefferson Ave. from Woodward to Beaufact Avs. on the express condition that the company use a 60-ft. 7-in. tee rail weighing from 91 to 97 lbs., using granite blocks between tracks and 18 inches outside." This recommendation was confirmed, the tee rail was laid and Detroit is now enthusiastically in the tee rail column.

In summing up the concensus of opinion over the country it seems that the chief opponents of the use of tee rail in city streets are the municipal officers and other engineers in the cities where practically no experience has been had and that practically all those officers and engineers who have had anything like a comprehensive experience with this type of construction are strongly in favor of it. Proper results are often prevented through the methods employed by the municipalities in laying the paving. I can illustrate this to you more clearly by telling you how this work has been done in Milwaukee. Under the laws now in force there the kind of paving to be used is finally determined through petition of the property holders, and it is a sad fact that they rarely select the type of pavement best suited to the conditions. The arguments of paving contractors, material supply men and others are brought to bear and the result usually obtained is political and not mechanical.

(*Continued in October issue.*)

Electric Railway Notes.

The British Columbia Electric Ry. is converting all its old cars into the multiple unit system, and is building 25 steel frame single end cars.

The Calgary Municipal St. Ry. has received two single truck pay-as-you-enter cars from the Preston Car and Coach Co., Preston, Ont.

The Port Arthur and Fort William Electric Ry. has received two double truck pay-as-you-enter cars from the Preston Car and Coach Co., Preston, Ont.

The Ottawa Electric Ry. has received four 33½ ft. electric pay-as-you-enter cars, 45 ft. long over all, mounted on 27-FE-1 trucks, from the Ottawa Car Co., Ottawa.

The Edmonton Radial Ry. has received two 30½ ft. long overall. mounted on 27-G-1 trucks, from the Ottawa Car Co., Ottawa, Ont., and two singe ended cars from the Preston Car and Coach Co., Preston, Ont.

The population of London, Ont., which it was anticipated would reach the 50,000 necessary before a vote on the question of the operation of street cars on Sundays can be taken, has been announced as only 47,968.

Press reports recently stated that D. A. Gordon had been elected President, Chatham, Wallaceburg and Lake Erie Ry., succeeding the late G. W. Kipp, but we have been officially advised that no appointment has been made, nor will it be taken up until the annual meeting in September.

J. A. Marsh, who was recently appointed Trainmaster, British Columbia Electric Ry., New Westminster, was born at Dresden, Ont., Aug. 16, 1876, and entered B.C. Electric Ry. service in 1903, since when he has been to May 1, 1911, three years as conductor on the interurban lines and five years as agent at Vancouver.

The Montreal Street Ry. applied for a writ of prohibition, Aug. 16, to prevent the board of arbitration, recently appointed under the provisions of the Lemieux Act, to investigate some differences between the employes and the company from acting. The application alleges that the Industrial Disputes Investigation Act of 1907 is unconstitutional.

H. G. Matthews, heretofore Secretary-Treasurer of the Marconi Wireless Telegraph Co. of Canada, has been appointed Assistant to the President of the Quebec Railway, Light, Heat and Power Co., with office at Quebec. We are advised that this appointment was made owing to the President, Rodolphe Forget, being unable to spend any time in Quebec in consequence of his diversified interests. Mr. Matthews, who is 33 years of age, is a native of Montreal.

E. Sterling, who was recently appointed Division Trainmaster, B.C. Electric Ry., New Westminster, was born at Thornbury, Ont., Oct. 3, 1875, and entered railway service, May, 1891, since when he has been, to Oct., 1896, operator and agent, C.P.R.; Oct., 1896, to Mar., 1897, train dispatcher, C.P.R., Smelter Jct., B.C.; Mar., 1897, to July, 1909, conductor, C.P.R.; July to Oct., 1909, acting Trainmaster, C.P.R., Nelson, B.C.; Oct., 1909, to May 1, 1911, Chief Dispatcher, B.C. Electric Ry.

Following are the chief details of the two combination passenger and baggage cars which the G.T.R. is building at its Montreal shops, for the Montreal and Southern Counties Ry.:—

Length over buffers	49 ft. 4 ins.
Outside width over sheathing	8 ft. 1½ ins.
Height outside over all	12 ft. 6½ ins.
Length inside passenger compartment	18 ft. 6 ins.
Length inside, smoing compartment	10 ft. 6½ ins.
Width inside in clear	7 ft. 4 ins.
Seating capacity, passenger compartment	28
Seating capacity, smoing compartment	16
Baggage door, one each side, width	3 ft. 6 ins.
Motorman's door, width	2 ft.
Motors, each car	Four 40 h.p.

Patrick Dubee,

Secretary, Montreal Street Railway, and Vice President, Canadian Street Raillway Association.

F. R. Glover, heretofore Assistant Manager, British Columbia Electric Ry., has been appointed General Executive Assistant. The circular announcing this appointment states: "While the directors regret that this appointment will sever Mr. Glover from active participation in the operating end of the company's business, they are glad to think that he will now have more time to devote to giving them the benefit of his experience and advice on those questions of policy which are constantly arising. They also take this opportunity of publicly acknowledging the valuable services which he has rendered to the company for so many years."

Patrick Dubee, whose portrait appears on this page, was born in Montreal, March 4, 1876, and was educated at the Christian Brothers School and at St. Patrick's Academy. He started as office boy with the Montreal St. Ry. Co., July 9, 1890, two years before the electrification of the road, and has remained in its employ ever since, occupying various positions in the Secretary, Comptroller, and Manager's office until May, 1901, when he was appointed Assistant Secretary at the time that W. G. Ross was appointed Secretary-Treasurer. In Dec., 1903, Mr. Ross having been elected Managing Director, Mr. Dubee was appointed Secretary. In 1903, when the Montreal St. Ry. Mutual Benefit Association was organized, the details in connection with the organization were left in his hands. He was subsequently elected a Director and Secretary-Treasurer of the Association and has occupied those positions continually since. This Association is recognized as the most successful of its kind in America. In 1901, when the Montreal St. Ry. Co. acquired control of the Montreal Park & Island Ry. Co., he was appointed Secretary of the latter company. In 1904, on the organization of the Suburban Tramway & Power Co., he was appointed Secretary-Treasurer, and in 1909 he was appointed Secretary-Treasurer of the Longueuil Tramways Co., all of which positions he still holds. He has taken a very active part in the Canadian Street Railway Association's proceedings since its inception in 1904, having been a member of the executive committee for several years, and this year being Vice President.

Electric Ry., Finance, Meetings, Etc.

British Columbia Electric Ry.—Gross earnings for June, $387,664; working expenses, $252,819; net operating earnings, $134,845; renewal funds, $29,770; net earnings, $105,075; approximate income from investments, $20,000; net income, $125,075, against $253,180 gross earnings; $159,095 working expenses; $94,085 net operating earnings; $17,852 renewal funds; $76,233 net earnings; $16,500 approximate income from investments; $92,733 net income for June, 1910. Aggregate gross earnings for 12 months ended June 30, $4,226,834; net earnings, $1,589,784, against $2,981,617 gross and $1,239,839 net for the same period 1909-10.

Dividend at the rate of 5% per annum has been paid on the 5% non-cumulative preferred ordinary stock, for the half year ended June 30, together with an additional dividend at the rate of 1% per annum for the same period.

Calgary Municipal St. Ry.—The official figures for the operation of the electric railway for the six months ended June 30 show:—Receipts, $153,446; working expenses, $103,275; net earnings, $50,171. Expenditure during the six months on extensions, etc., $324,693; amount authorized by bylaw for extensions, $486,604.

Earnings for July, $39,147; operating expenses, $15,187; net earnings, $23,960. After making provision for fixed charges, there remains a surplus for the month of $16,000.

Edmonton Radial Ry.—The revenue for the first six months of the year was $106,655, against $67,906 and $35,297 for the same periods of 1910 and 1909, respectively. The number of passengers carried during the first six months of this year was 2,534,358, against 1,566,816 during the same period in 1910, and 806,988 in 1909.

Halifax Electric Tramway.—Receipts for July, $23,821.28, and for week ended Aug. 7, $5,641.11, against $22,176.80 and $5,071 for same periods 1910.

London St. Ry.—Gross earnings for July, $24,066.19; expenses, $16,384.32; net earnings, $7,681.87; deductions, $2,-

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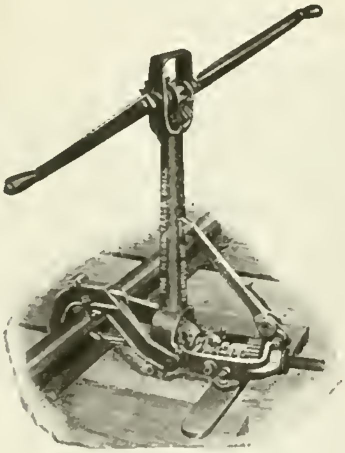

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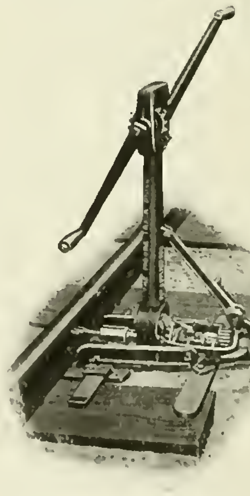

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450.65; net income, $5,231.22, against $24,248.90 gross earnings; $16,556.08 expenses; $7,692.82 net earnings; $2,441.75 deductions; $5,251.07 net income for July, 1910. Aggregate gross earnings for seven months ended July 31, $151,868.02; expenses, $110,577.33; net earnings, $41,290.69; deductions, $16,719.99; net income. $24,570.70. against $141,513.59 aggregate gross earnings; $103,154.76 expenses; $38,358.83 net earnings; $16,698.65 deductions; $21,660.18 net income for same period 1910.

Montreal St. Ry.—Passenger earnings for July, $421,666.94; miscellaneous earnings, $16,104.20; total earnings, $437,771.14; operating expenses, $231,068.27; net earnings, $206,702.87; city percentage on earnings, $51,436.56; interest on bonds and loans, $15,043.91; rental leased lines, $607.10; taxes. $5,000; total charges, $72,087.57; surplus, $134,615.30; expenses per cent. of earnings 52.78, against $383,371.70 passenger earnings; $15,475.22 miscellaneous earnings; $398,846.92 total earnings; $215,224.22 operating expenses; $183,622.70 net earnings; $39,200.82 city percentage on earnings; $14,705.50 interest on bonds and loans; $552.90 rental leased lines; $4,000 taxes; $58,459.22 total charges; $125,163.48 surplus; 53.96 expenses per cent. of earnings, for July, 1910. Aggregate total earnings for 10 months ended July 31, $3,876,711.22; operating expenses, $2,246,207.60; net earnings, $1,630,503.62; total charges, $475,972.99; surplus, $1,154,530.63; expenses per cent. of earnings, 57.94, against $3,490,646.48 aggregate total earnings; $2,021,516.05 operating expenses; $1,469,130.43 net earnings; $419,546.49 total charges; $1,049,583.94 surplus; 57.91 expenses per cent. of earnings for same period 1909-10.

Sherbrooke Ry. and Power Co.—Gross earnings for three months ended July 31, $12,711.97, against $9,579.05 for the corresponding three months of 1910. Passengers carried in July 119,449, against 85,470 in July, 1910.

Toronto Ry.—Gross earnings for June, $398,685; working expenses, maintenance, etc., $191,973; net earnings, $206,712, against $362,371 gross earnings; $180,089 working expenses, maintenance, etc.; $182,282 net earnings, for June, 1910. Aggregate gross earnings for six months ended June 30, $2,232,005; net earnings, $1,085,741, against $2,019,213 gross, and $968,742 net for same period 1910.

At a special general meeting of shareholders in Toronto, Aug. 14, the capital was increased by $4,000,000, to be disposed of as follows:—$2,000,000 to be issued to shareholders of record, Aug. 25; $1,000,000 to be divided among the shareholders as a stock dividend, and $1,000,000 to be retained in the treasury. The capital is now $12,000,000.

Toronto Suburban Ry.—A mortgage trust deed in favor of the British Empire Trust Co., securing an issue of £540,000 of 4½% first mortgage debentures. has been deposited with the Ontario Railway and Municipal Board, Toronto.

Winnipeg Electric Ry.—Gross earnings for June, $305,353; working expenses, $141,251; net earnings, $164,102, against $242,420 gross earnings; $117,128 working expenses; $125,292 net earnings for June, 1910. Aggregate gross earnings for six months ended June 30, $1,881,605; net earnings, $925,550. against $1,532,195 gross and $754,880 net for same period 1910.

The matter of the purchase of the Winnipeg Electric Ry. on the basis of $250 a share by the city of Winnipeg has been under consideration by the city council for some time. A committee was appointed, July 31, to negotiate an agreement for the transfer of the property, and to arrange for the submission of a bylaw to the taxpayers sanctioning the purchase. Sir Wm. Mackenzie, President of the company, personally attended several meetings of the committee to discuss the matter, and it was reported, Aug. 14, that the negotiations had fallen through. This, however, was denied Aug. 22.

Guelph Radial Railway Electric Locomotive.

The Guelph Radial Ry. has recently received an electric locomotive which is illustrated on this page. It is of the double truck industrial type, and is built for standard gauge track. The trucks are of the equalized pedestal type, with cast steel rigid bolsters and inside hung motors. The wheels are steel tired. with cast iron centres. The frame is built of 10-in. steel channels with cast iron bumpers. The longitudinal sills are four in number, and they are strongly braced transversely. A radial draw-bar is used at each end, and the couplers are of the M.C.B. automatic type.

The cab is centrally located, and has large side and end windows. An efficient hand brake is fitted, as well as the Westinghouse automatic air brake. The equipment throughout is most complete for a locomotive of this type. It was built by the Baldwin Locomotive Works. Following are the general dimensions:—

Motors, four, No. 101-B-2	500 volts.
Wheel base, rigid 6 ft. 0 ins.	18 ft. 0 in.
Diameter of Drivers	33 in.
Journals,	3¾ in. x 7 in.
Width,	8 ft. 0 in.
Height,	12 ft. 6 in.
Length	23 ft. 0 in.
Weight	54,000 lbs.

Electric Railway Projects, Contructions, Betterments Etc.

Alberta Electric Ry.—Press reports state that surveys are being made for the building of an electric railway from Banff to Calgary and other points in Alberta. (June, pg. 555.)

Birds Hill and Springfield Ry.—The Springfield, Man., municipal council has ratified the bylaw granting franchise for the building of an electric railway by this company. (Aug., pg. 783).

British Columbia Electric Ry.—The question of the unification of the various franchises held by the company for lines in Vancouver and vicinity, in conjunction with the plans for the enlargement of the city boundaries is still under discussion. If the idea is carried through, the company will surrender its existing franchises, which have varying terms of years to run, and will be given a new franchise with conditions covering greater Vancouver, and provided with arbitration clauses, covering terms.

A contract has been let to D. Matheson for the erection of a new freight shed, 167 by 38 ft., at the foot of Carroll St., Vancouver.

The Board of Railway Commissioners has authorized the Vancouver, Fraser River and Southern Ry. to open for traffic its line from Park Drive, Vancouver, to Eight Ave., New Westminster.

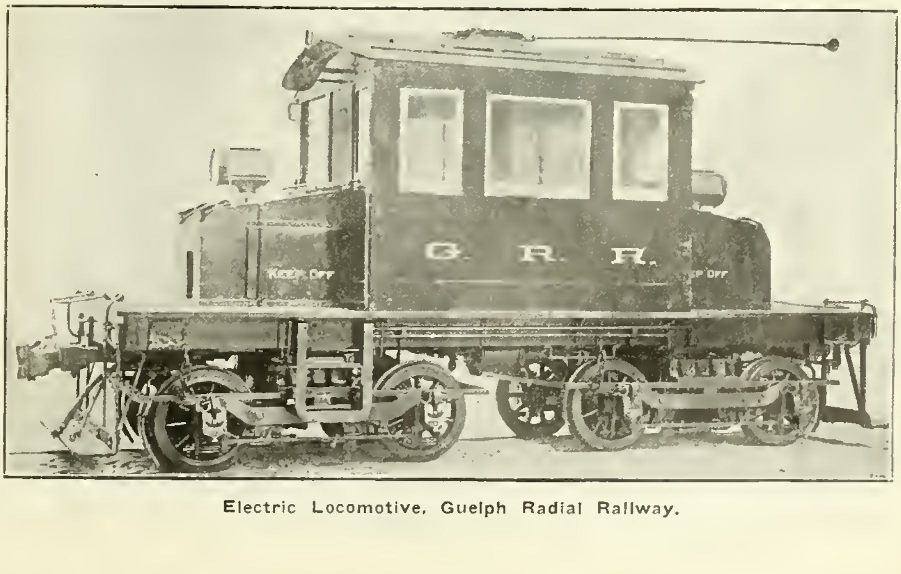
The question of the construction of lines to Blaine, at the International boundary, the Delta district, to Columbia. and to Sunnyside, are under consideration. It is stated that a decision has been reached that the New Westminster-Millside line and the Point Grey lines are to be built at once. (Aug.. pg. 783).

Calgary Municipal St. Ry.—The Shoredice Park extension is expected to be ready for operation by Aug. 27. Good progress is being made with other extensions. Propositions are under consideration for the building of extensions to South Calgary and to Manchester subdivisions; a line on Eighth Ave. will not be built at present, and a proposal to build a private line, 11 miles in length, has been withdrawn.

The City Commissioners had under consideration, Aug. 15, the recommendations of T. McCauley, Superintendent of the railway, recommending the building of a second track on certain streets, the extension of other lines, and the purchase of additional equipment and rolling stock. The estimates show $114,140 for work inside the city, $49,980 for extensions outside the city, and $156,000 for additional equipment and rolling stock.

Edmonton Radial Ry.—Strathcona Radial Ry.—An agreement has been reached between the municipal councils of Edmonton and Strathcona, Alta., by which the city of Strathcona will be absorbed into the city of Edmonton. One of the conditions of the amalgamation is that a low level traffic and railway bridge be built across the Saskatchewan River at the foot of Fourth st. by the city of Edmonton. The city of Edmonton owns the electric railway system in that city and controls that in Strathcona. The agreement, which now awaits final sanction of the citizens, lays down a basis for the operation of the existing lines in both places, and for the building of extensions. (May, pg. 453.)

Gatineau River Valley.—Press reports state that a company is being organized in Ottawa to build an electric railway from that city along the valley of the Gatineau River. The idea is to make the line serve all the summer resorts between Ottawa and Farm Point, Que.



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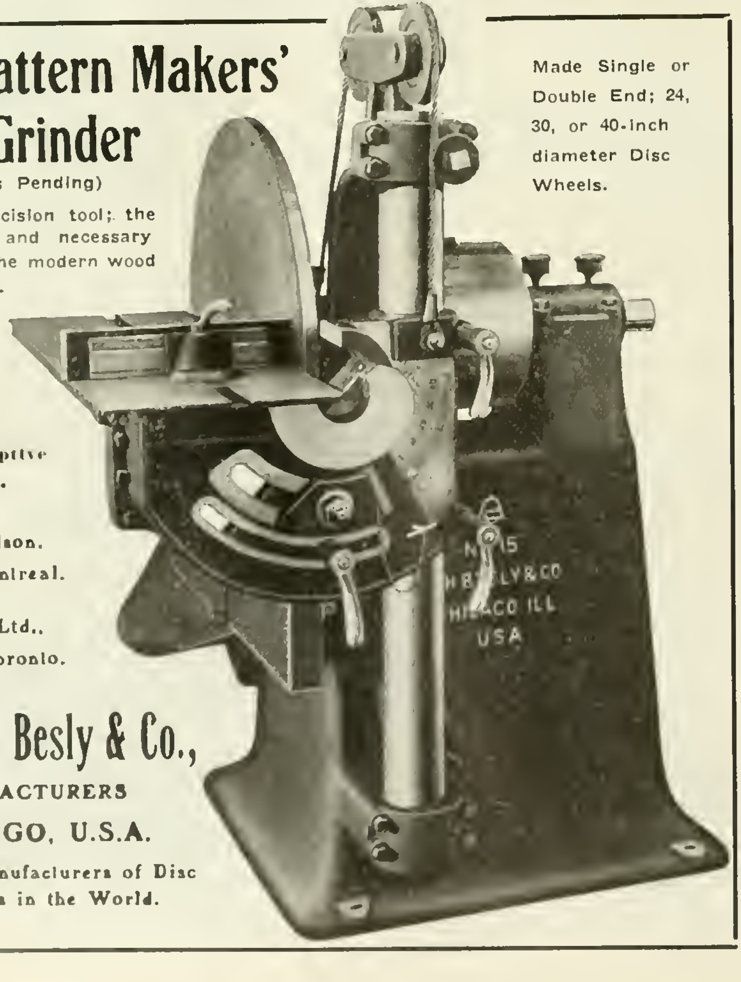

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Halifax Electric Tramway. — The Point Pleasant Park extension was opened for traffic Aug. 10. (Aug., pg. 783.)

Lake Erie and Northern Ry.—Plans and estimates for the first section of this projected railway are reported to have been completed by W. P. Kellett, Chief Engineer. This section extends from Port Dover, on Lake Erie, via Simcoe, and Waterford to Brantford, Ont. (July, pg. 683.)

Lethbridge, Alta.—In connection with the plans for paving the streets, the Lethbridge, Alta., City Council has directed its engineer to investigate the street railway systems at Calgary and Edmonton, with a view of preparing the streets for tracklaying. (Mar., pg. 257.)

London and Lake Erie Ry. and Transportation Co.—It is proposed to erect a new passenger station and an addition to the freight shed in London, and a new transformer station and freight shed in St. Thomas, Ont. An extension of the line from Port Stanley to Erie Rest, at the western extremity of the municipality, is under consideration. (June, pg. 555.)

Lunenburg Electric Ry.—The Nova Scotia Legislature has incorporated a company with this title to build an electric railway within the municipalities of Lunenburg and Chester, the provisional directors being:—F. G. Nichol, Mahone Bay, N.S.; W. Duff, F. Powers, H. H. McIntosh, F. Matheson, Lunenburg, N.S.; W. H. McDonald, J. D. Lohnes, Riverport, N.S.

Press reports stated that surveys are being made under the direction of F. G. Nichol, for an electric railway 12 miles long from Lunenburg to Riverport. (June, pg. 555.)

Moncton Tramways, Electricity and Gas Co.—We are advised that during the past few months the company has been directing its work chiefly towards the completion of the natural gas installation in Moncton, N.B., and that it is expected to have the gas in use in a month or so. Progress in connection with the building of the proposed electric railway has, therefore, been slow. As a fact, however, the company has erected poles for stringing the overhead wires over the entire route, and it is intended making a start with the track work in the course of a few weeks. Orders have been placed in the United States for the rails and it was expected that delivery of the same would be begun by Aug. 30. The company issued advertisements for men and teams for grading Aug. 15. W. G. Ritchie is resident engineer. (June, pg. 557.)

Montreal and Southern Counties Ry.—We are advised that work was started Aug. 1 on an extension of the line in St. Lambert, Que., on a private right of way, from Front St. to the Country Club, 1.25 miles. As this will be the first section of the main line through Laprairie, Huntington and Chateauguay counties, the line will be of heavy construction and laid with 80 lb. steel. It was expected to have this extension completed Aug. 30.

CITY OF TORONTO, CANADA.

Underground Subway Construction.

It is the intention of the City of Torono to call for tenders for construction of double track underground subways, approximately three miles in length, on or about September 15th.

Intending bidders please be governed accordingly.

G. R. GEARY, Mayor.

City Hall, Toronto, August 25th, 1911.

Application was made, Aug. 15, for an injunction to restrain the company from continuing to have its tracks on certain streets in St. Lambert. Judgment was delivered, Aug. 18, dismissing the action on the ground that the matter under litigation had already come up before the Board of Railway Commissioners, and that the decisions of the latter body, on questions of fact, were final. As to the competency of the commission in regard to questions of law, the matter is now pending an appeal taken before the Supreme Court.

The Montreal board of Control is considering an application from the company to extend its lines on the following streets:—McGill, St. Paul, Lagauchetiere, Cathedral, Metcalfe, Burnside, Stanley, Osborne, Mountain, Albert, Inspector and Chaboillez Square. (April, pg. 365.)

Montreal Street Ry.—The company notified the city council, Aug. 4, that it was intended to start construction of car lines on the following streets:—Plateau, St. Elizabeth, and Portugal, in Notre Dame du Grace Ward. A conference is being arranged with a view of deciding on other extensions as to which there is some difference of opinion between the council and the company. The final settlement of the differences as to the track space on Commissioner St., between the company and the Harbor Commissioners is likely to be made by the city providing space for the street railway tracks, which are now partly on the Harbor Commissioners' property. (Aug., pg. 783.)

Moose Jaw Electric Ry.—The meeting held at Moose Jaw, Sask., July 31, was a formal gathering for the purpose of closing out the affairs of the Moose Jaw Electric Ry. Co., Ltd., and transferring the assets and liabilities to a new company, with a similar title, incorporated by the Saskatchewan Legislature. The meeting of shareholders to ratify the transfer was held in Victoria, B.C., in which province the original company was incorporated.

About six miles of track has been laid, the overhead work is completed, and everything is about ready for operation. The power house is practically completed. The first section of the line was placed in operation Aug. 17. It is intended to complete seven miles of track this year. No plans, we are advised, have been arranged as to future extensions. (Aug., pg. 783.)

Morrisburg and Ottawa Electric Ry.—Following are the officers elected at the organization meeting held Aug. 3:—President, Jas. Oliver; Vice President, Alderman W. J. Campbell; Secretary-Treasurer, R. A. Bishop.

Press reports state that arrangements are being made to have surveys made at once so that some construction may be done this fall. (Aug., pg. 783.)

Nanaimo, B.C.—A letter was read from Stewart and Rogers, at the meeting of the city council, Aug. 3, refusing to agree to the amendments made by the council to the proposition for the building of an electric railway in the city. The council passed a resolution informing Stewart and Rogers that unless the amendments were agreed to the negotiations would be called off. (July, pg. 683.)

Nipissing Central Ry.—The question of the route for the extension from Cobalt to Liskeard, Ont., is said to be practically agreed upon, and a start is expected to be made with construction at an early date. (Aug., pg. 783.)

North Midland Ry.—A. E. Welch told the St. Marys, Ont., town council, Aug. 10, that arrangements had been made to build an extension of the projected line into St. Marys and Stratford, and that provided all conditions were satisfactory, construction would be started this fall. (Feb., pg. 169.)

Ottawa Electric Ry.—The company, it is said, has refused to consider the building of the proposed cemetery extension through Beechwood Ave. The route favored by the company is that via Cumming's bridge. (July, pg. 683.)

Ottawa, Smith's Falls and Kingston Ry.—At a recent meeting of directors in Ottawa arrangements are said to have been completed for the commencement of field work, and for an early start at construction. It was expected to have location work started by Aug. 30. Capital stock is being subscribed locally, and arrangements are being made for the financing of the construction in England. The survey work is in charge of — Upson, C.E., and R. W. and S. E. Farley, were reported Aug. 11, to be in charge of parties at work in the field. The centre of the survey work is at Manotic, one party working towards Ottawa and the other towards Smiths Falls. (Aug., pg. 783.)

Ontario West Shore Ry.—A correspondent of the Goderich Star says he recently went over the route for this railway and that from appearances the work is anything but progressive or promising for early completion. (June, pg. 557.)

Quebec Ry., Light and Power Co.—The President and other directors recently inspected the country in the direction of Lorette, Que., and it is stated that arrangements are being made with a view of extending the line in that direction. (Aug., pg. 783.)

Regina Municipal Ry.—A car service was started on two routes Aug. 14, and others will be started as soon as other lines are completed. Cars were started running over the lines July 25, and the formal opening of the line for traffic took place July 27, but it was not until Aug. 14 that a regular schedule was put in operation.

Construction on other lines is being pushed as fast as possible, and the city council has propositions under consideration for the extension of the lines to other parts of the city. (Aug., pg. 783.)

Toronto Civic Lines.—Assistant City Engineer Powell stated, Aug. 17, that about 10 miles of the civic street railway had been completed out of the 15 miles proposed to be laid. The question of the operation of these lines by the Toronto Ry. is under consideration.

Work was started, Aug. 10, on the line on Gerrard St. east, under the charge of E. L. Cousins, the city's railway engineer. (July, pg. 685.)

Winnipeg Electric Ry.—Extensions of lines are being built on Sargent and Ethel Avenues, and on Donald and Garry Streets, and other extensions which it is expected will be built this year are:—Selkirk and McPhillips Street joining with Logan Ave., and lines via Brant St. bridge and Notre Dame Ave. West. The question of extensions in other parts of the city was under discussion by the city council Aug. 9, and was held over for further reports by the City Engineer. (July, pg. 685.)

◆

Under the heading "Railway and Allied Associations, Clubs, etc.," on page 809, C. M. Strange is given as Secretary of the Engineers' Club of Montreal. He resigned recently and R. W. H. Smith, the former secretary, has been reappointed.

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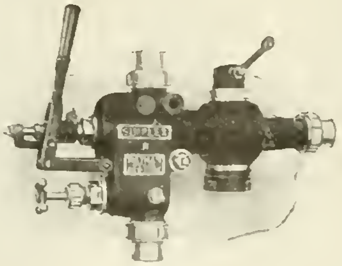

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Quebec Railway Light, Heat and Power Company's Organization.

The chart on this page shows the old organizations of the five companies which have been merged into the Quebec Railway, Light, Heat and Power Co., namely, the Canadian Electric Light Co., the Jacques Cartier Electric Co., the Quebec Railway Light and Power Co., the Quebec Gas Co., and the Frontenac Gas Co., and also the organization of the new or consolidated company. Under the re-organization there is one general manager instead of five as before, and the heads of departments have been reduced from 25 to 10. The salaries for management and superintendents formerly amounted to over $73,000 a year. At half the cost under the consolidation better salaries are paid and it is claimed that better men are obtained. There is also, of course, a large saving in directors' fees, auditing, solicitors, medical advisers, etc. This is merely one phase of the advantages of consolidation, which, sooner or later, means better service to the public and reduction in rates they have to pay.

Before the consolidation it was not unusual for the consumer to have three meters, one for electric power supplied by the Quebec Railway Light and Power Co., one for electric light supplied by the Jacques Cartier Electric Co., and one for gas supplied by either the Quebec Gas Co. or the Frontenac Gas Co. Where formerly this consumer was troubled three times a month by three different meter readers, representing three different companies, and had to keep track of three different accounts payable at three different dates, since consolidation this consumer is only visited by one meter reader, who reads all three meters on the same date, and all three accounts are rendered on the one bill, which simplifies the matter very materially. Where formerly it was not uncommon to have an accident on a transmission line, necessitating the shutting down of the individual plant until repairs could be made, thus leaving the consumer of the company in darkness, since consolidation, with these three electric light plants tied together, such a thing as a shut down and leaving any portion of the city in darkness would be almost impossible.

◆

The Quebec Public Utilities Commission and Electric Railways.

In November, 1910, the Commission ordered the Montreal Street Railway to remove the fenders and to equip all cars with automatic drop wheel guards, also to equip all cars over 30 ft. long, and weighing 25,000 lbs. and over, with air brakes, in addition to hand brakes and sanding apparatus. The order was also made applicable to all other electric railways subject to the Commission's jurisdiction, unless cause to the contrary is shown. The Quebec Railway, Light, Heat & Power Co., which was served with the order, objected on the ground that it was not a public utility, but was in control of the Quebec Railway, Light & Power Co., which had been declared subject to Dominion authority. The Commission recently decided in favor of the company's contention.

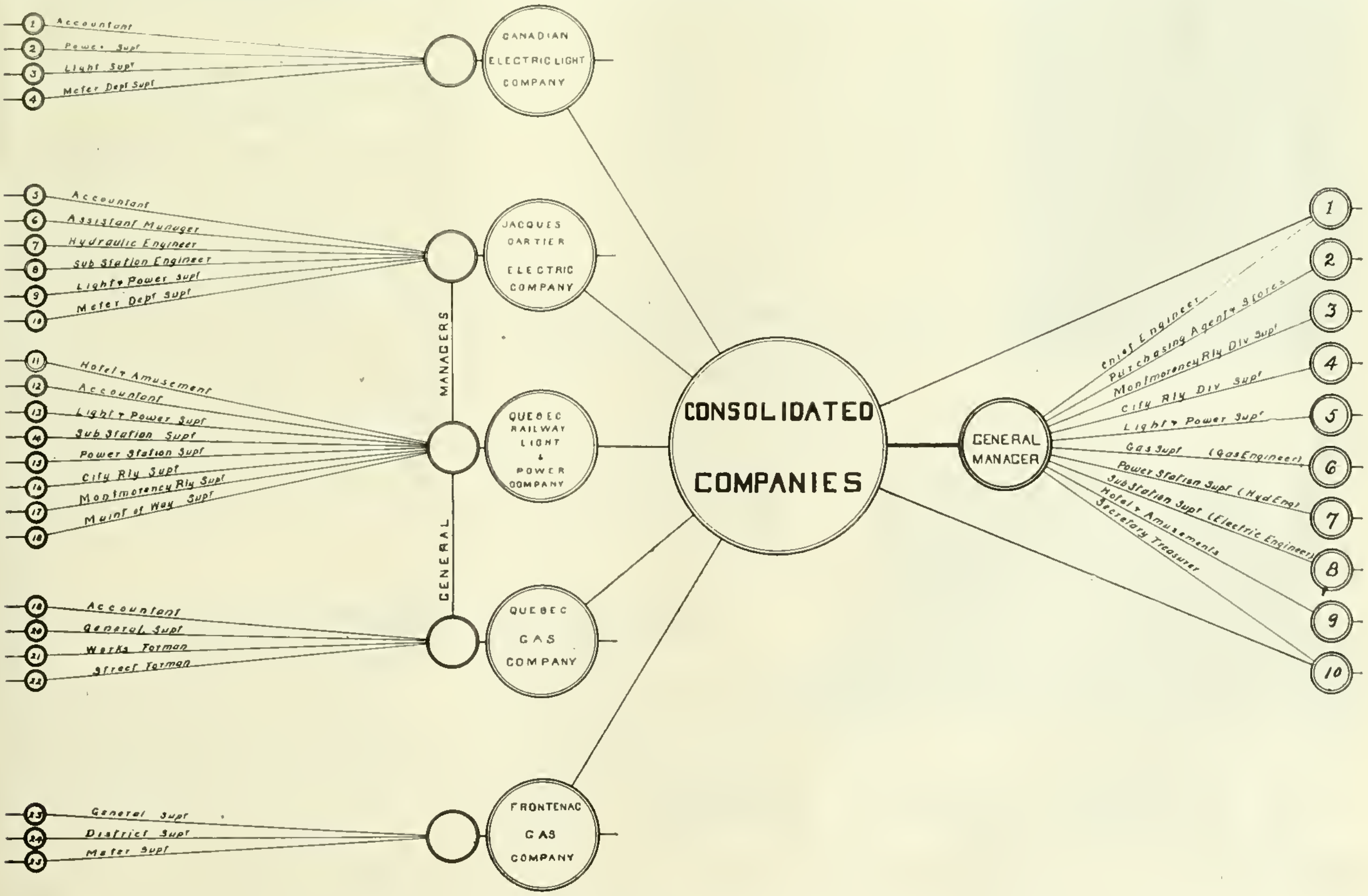
A. K. S. Hemming complained recently to the Commission that the Montreal St. Ry.'s crossing of the G.T.R.'s four tracks at Guy St., Montreal, was dangerous and that it should be removed further west, where the G.T.R. has only two tracks. He also asked that the M.S.R. service between Centre St. and Notre Dame St., along Seigneurs St., be changed, and complained that a corner of Seigneurs St. near the Montreal Woollen Mills, was dangerous, owing to the narrowness of the street, and asked that the city be ordered to widen the street. The M.S.R. Co. questioned the Commission's jurisdiction, and the Commission decided recently that as the change of crossing suggested would involve the M.S.R. crossing the G.T.R. at another point, and as the G.T.R. is subject to Dominion jurisdiction, the Commission had no authority to make such an order, and that it has no jurisdiction to order the city to widen a street.

◆

The Winnipeg Electric Ry. has added 30 new cars to its rolling stock during the present year, and a number of additional cars are being built at the company's shops, Fort Rouge, Winnipeg.

J. J. Hackney, who recently resigned the position of Manager, Guelph Radial Ry., on his appointment as Manager of Public Utilities at Port Arthur, Ont., as announced in our last issue, was, prior to leaving Guelph, presented with a gold fob and an address by the railway employes.

The Toronto Railway Co. recently transferred its found articles department from the head office building, corner of King and Church Streets, to the new Lansdowne Avenue car barn in the west part of the city. The matter was taken up by the city council, on the ground of inconvenience to the public, an alderman suggesting that legislation be obtained entrusting all found articles to the city. The Company's General Manager, R. J. Fleming, at once wrote the Mayor that it would be a pleasure to hand over to the city daily all articles found by the conductors, and suggested that the council appoint an officer to make arrangements to carry out the proposition. No doubt other managers would like to make similar arrangements with municipal authorities, as such a plan would save the companies considerable trouble and expense.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2 Power Supt
3 Light Supt
4 Meter Dept Supt
CANADIAN ELECTRIC LIGHT COMPANY
5 Accountant
6 Assistant Manager
7 Hydraulic Engineer
8 Sub Station Engineer
9 Light + Power Supt
10 Meter Dept Supt
JACQUES CARTIER ELECTRIC COMPANY
11 Hotel + Amusement
12 Accountant
13 Light + Power Supt
14 Sub Station Supt
15 Power Station Supt
16 City Rly Supt
17 Montmorency Rly Supt
18 Maint of Way Supt
QUEBEC RAILWAY LIGHT & POWER COMPANY
19 Accountant
20 General Supt
21 Works Forman
22 Street Forman
QUEBEC GAS COMPANY
23 General Supt
24 District Supt
25 Meter Supt
FRONTENAC GAS COMPANY
GENERAL MANAGERS
CONSOLIDATED COMPANIES
GENERAL MANAGER
1 Chief Engineer
2 Purchasing Agent + Stores
3 Montmorency Rly Div Supt
4 City Rly Div Supt
5 Light + Power Supt
6 Gas Supt (Gas Engineer)
7 Power Station Supt (Hyd Eng)
8 Sub Station Supt (Electric Engineer)
9 Hotel + Amusements
10 Secretary Treasurer

Quebec Railway, Light, Heat and Power Company's Organization Chart.

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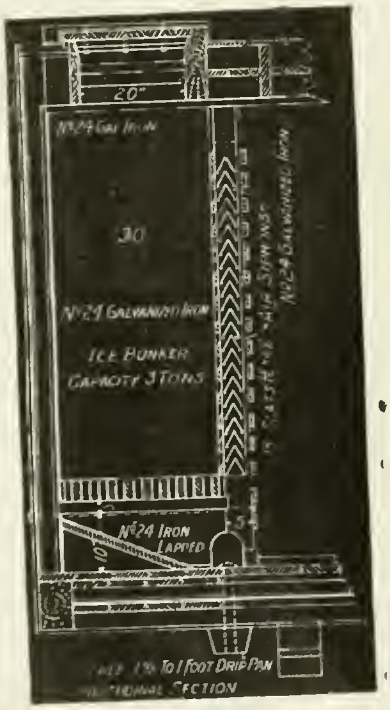

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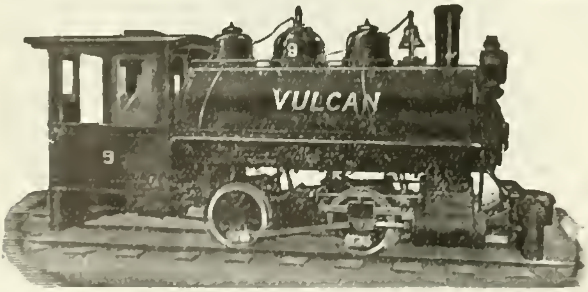

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GRAND MASTER, Capt. J. H. McMaugh, Toronto, Ont.; **GRAND SECRETARY-TREASURER**, Capt. H. O. Jackson, 376 Huron St., Toronto.

The Collision Between the s.s. General Wolfe and the s.s. Aranmore.

Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. McGough, Deputy Harbor Master, and Capt. F. X. Pouliot, of the C.G.S. Montmagny, held an investigation at Quebec, Aug. 8, into the collision which occurred off Murray Bay in the river St. Lawrence early on June 28, between the s.s. General Wolfe and the s.s. Aranmore, which resulted in the foundering of the General Wolfe and the damaging to a limited extent of the Aranmore. Following is the judgment:

Thomas Young, captain of the General Wolfe, set forth that she was a schooner rigged, single screw, steel built vessel, of 385 net tonnage and 774 gross, carrying a crew of 23, that he and the first officer were properly certificated, and that 31 passengers, many of whom were women and children, were on board when the ships collided. The General Wolfe was bound for Quebec, the final call having been made at Godbout at 8 a.m. on June 27. Throughout the evening of the 27th the weather was intermittently clear and foggy and the sea remained calm under the light southwest breeze that was blowing. The vessels having passed Cape Salmon, the captain absented himself from the bridge, and upon his return he observed a light on the starboard side of his ship, and although the chief officer, who was on watch, designated it Goose Cape light, the captain observed it more closely and concluded that it was the mast head light of a ship, whereupon he issued the order hard a starboard, and kept proceeding at full speed. At this juncture, he declares the fog was thick and low, but he nevertheless issued no signal to warn the approaching ship, and while still on his starboard helm and with engines full ahead, the ships crashed together, the Aranmore striking the General Wolfe abaft the engine room, whereupon the master of the Wolfe, seized by fright, according to his own admission, abandoned his ship, and all on board, and leaped to the deck of the Aranmore, and is consequently ignorant of what transpired on the Wolfe subsequent to the impact. Odilon Fortin, chief officer of the General Wolfe corroborated in the main the testimony given by the captain as regards the weather conditions, adhering rigidly to the statement that the fog was thick prior to and at the moment of the impact. The light, which in reality was the mast head light of the Aranmore, was construed by him to be the Goose Cape light, and when the ships struck he also ignored the first duty of an officer, and sought refuge on the Aranmore. Although unseen at the moment by him, he learned subsequently that the wheelsman had also abandoned his post, following which the General Wolfe, with a deserted bridge, still under her starboard helm and her engines going full ahead, described a complete circle and plunged into the port bow of the then receding Aranmore, fortunately inflicting but slight injury. The second officer of the General Wolfe, Fournier, was awakened by the shock, and hastening to the deck ordered the boats to be launched, and participated in the work of rescue, assisting the crew who put out from the Aranmore.

The master, John Hearn, declared that the Aranmore is an iron built vessel, registered number 499, gross tonnage 1,169, and that her crew numbered 27. She is properly equipped with navigating instruments and lifeboats, and carries passengers and freight, as well as being a subsidized mail carrier between Quebec and North Shore points. Subsequent to her departure from Quebec, being outward bound, the Aranmore encountered varying weather conditions, and although he was compelled to anchor, owing to fog on the evening of June 27, he proceeded as soon as it lifted, and for some time prior to the collision the atmosphere was perfectly clear, the various lights being discernible at a considerable distance. He was on the bridge and distinguishing the mast head light of a vessel nearly end on, he forthwith ordered the helm to port, declaring that he sounded no signals, there being no indication whatever of fog. With his helm to port he approached the other ship, and when in very close proximity, or a moment before the impact, he order full astern. The green light of the General Wolfe was then exposed to the red light of the Aranmore, and with the latter's helm still to port, the vessels came together. Immediately following the impact, Captain Hearn ordered the boats to be launched and ordered his crew to the rescue of those on board the disabled ship, which work, fortunately aided by propitious weather conditions, was performed in a thoroughly practical manner, so much so that not a single life was lost. The ill-fated General Wolfe gradually filled with water, and as she sank below the surface and finally disappeared, the Aranmore rode over the vortex prepared to render assistance if need be, but fortunately the lifeboats had already completed the work of rescue. The witnesses from the Aranmore corroborated the statements made by the captain, and positively declared the lights were clearly visible prior to the collision and that there was no indication of fog.

The Court finds that while it commends the seamanlike action of Captain Hearn in directing the work of rescue following the collision, he should, upon perceiving the erratic course of the General Wolfe, have reduced the speed of his vessel and gone full astern, and although he issued this order it was too late to prove effective, for it was almost simultaneous with the impact. In his tardiness in this respect, he was guilty of negligence, and the court therefore finds it incumbent to reprimand him, and to remind him that it is owing to his previous unblemished record and commendable action following the collision that he is not more severely dealt with. Capt. Young and First Officer Fortin, who threw to the winds what has been the proverbial duty of sea-faring men from time immemorial, to stand by their ship, are guilty of base cowardice, and their action in leaping to safety and leaving to perish if needs be those entrusted to their care, cannot be denounced too strongly. Young and Odilon Fortin are in the court's opinion unworthy to be numbered among mariners, whose bravery has ever been proverbial, and therefore they shall be struck from the list, their certificates being cancelled forever.

Floating Dry Dock for Toronto.

The Dominion Government has passed the plans for the floating dry dock to be built at Toronto by the Polson Iron Works, Ltd., and has granted aid in its construction, consisting of 3% per annum on a capital expenditure of $900,000 for 20 years. The dock when complete will be of sufficient capacity to handle the largest vessels at present operating on Lake Ontario, and will be built in three sections, which when coupled together will be 600 ft. long and 100 ft. wide. It is anticipated that two of these sections will be completed early in 1912, so that vessels can be docked there in the spring. The lifting capacity of these two sections will be 4,500 tons in all. When the third section is completed, the lifting capacity will be increased to 9,000 tons.

The dock will be equipped with the most modern machinery and the pumps will be operated by electricity. On account of being built in sections each section can be used as a separate dock and the first two sections will each be able to accommodate vessels up to 175 ft. Where larger vessels are to be accommodated the two sections will be coupled together. Dredging, piling and concreting will be done to furnish a basin with sufficient draught of water for operating the docks, and new steel sheer legs of 100 tons lifting capacity will be installed. The dock will be situated just west of the company's present property, sufficient land having been leased from the city for the purpose. This will be blasted to a depth of 28 ft. to accommodate the floating dock. In addition to the foregoing works, land has also been acquired on the east side of the works, where accommodation will be made for vessels coming to dock for repairs, providing ample accommodation for all vessels which may be waiting their turn for using the repair dock. A new boiler shop is also being added to the plant.

Vessels Removed from the Register.—During June, the following sailing vessels were removed from the Canadian register for the reasons assigned:—Alkaline, Parrsboro, N.S., 626 tons, stranded; Evelyn, Charlottetown, P.E.I., 167 tons, transferred to Barbados; J. W. Mills, Lunenburg, N.S., 76 tons, sunk in collision; Jennie May, Lunenburg, N.S., 88 tons, stranded; Maple Leaf, Lunenburg, N.S., 26 tons, transferred to Newfoundland. No steam vessels were removed from the register during the same period.

An order in council has been passed defining the limits of the public harbor of Shediac, N.B. as, all the waters inside or south of a line drawn due north astronomically from Bouleaux Point, the latter limit coinciding with the west limit of Cape Bald harbor.

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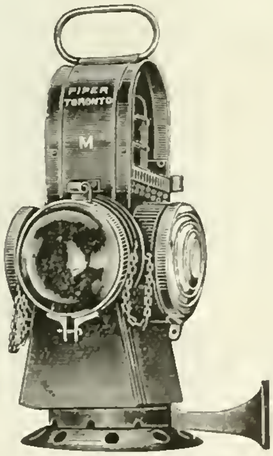

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LAURENTIC	"	14
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MEGANTIC	"	28
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LAURENTIC	"	11
TEUTONIC	"	18

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The Stranding of the s s. Morien.

Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by N. Hall, Port Warden of Halifax, and J. W. Harrison, Marine Superintendent of the Furness Withy Line, held an investigation into this matter at Halifax, N.S., July 25, the following being the judgment:

The Morien is a steamer of 490 tons register, 834 gross, steel built, employed in carrying coal from Parrsboro, N.S., to Portland, Me., carrying a crew of 19 men; mate holding certificate, second mate no certificate, engineer holding appropriate certificate. This steamer is owned by the Home Steamship Co., Capt. Burchell registered owner.

The evidence goes to show that on July 4, at about 8 p.m. the light at Digby Cut was seen and a bearing taken and another bearing taken from another point of land which was not exactly defined by the evidence of the master. The ship was then bound for Parrsboro. The weather was very thick and the ship going at full speed. At midnight, a sounding was taken and 37 fathoms obtained. This sounding was obtained by a deep sea lead, which was used at subsequent times when the soundings were taken, although there is on board a sounding machine of a make not mentioned, but by which Lord Kelvin's tubes are used. At 12.30 another sounding was taken, giving 32 fathoms. From that on till the stranding, he took no further soundings. The ship was then put at half speed and kept at half speed up to the time of the casualty. Cape d'Or and Cape Spencer were seen when the fog cleared up for about a quarter of an hour. Presumably a bearing from the sound of the foghorn at Cape d'Or was taken, but the evidence as to whether this was done or not, was not very clear. The course was changed when Cape Spencer was abeam, in such a way as to bring her to pass midway between Cape Split and the mainland. Relying on the casual observation of Cape Spencer to establish his position from the land, the master kept on navigating his vessel without taking any further precaution to ascertain whether this casual observation would be verified.

The ship stranded about 3.55, when the engines were put full speed astern and kept full speed astern for 20 minutes when the ship floated off, not with the engines, but with the flood tide. It was then found that the vessel was making water in several compartments. The course was shaped for Parrsboro, where she entered and anchored.

The evidence of the other witnesses corroborated, in part, that of the master.

The court finds that the master certainly neglected to take ordinary precautions which a careful navigator applies in the navigation of his vessel, and that he relied upon approximate observations and two soundings in the course of eight hours, and in view of the fact that the ground he was navigating was fraught with certain danger, owing to the changes of currents, and as it has been given out that eddies exist in the proximity of the Coves, the court is of the opinion that the master is in default for not taking ordinary precautions by using the lead, especially as he had on board a sounding machine whereby positive accuracy could be ascertained without stopping his vessel or losing any time.

Again, looking at it from a different point of view, the court is of opinion that owing to the thick weather experienced during the last eight hours, that it would have been preferable for the master to anchor his vessel and lose a tide rather than risk the property in his care.

In view of these conclusions the court cannot but severely censure the master

LIST OF STEAM VESSELS REGISTERED IN CANADA DURING JUNE, 1911.

Name	No.	Where and When Built.	Engines, etc.	Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
Bertha D.	126,958	Namu, B.C., 1910	Screw 6 n. h. p.	51 0	10.2	3.9	19	13	Victoria, B.C	R. Draney, Namu Harbor, B.C
Bonnington	130,555	Nakusp, B.C., 1911	Pa. 98 "	202.5	39.1	7.5	1700	955	Vancouver, B.C	C.P.R. Co., Montreal.
Bow Echo	130,375	Peterboro, Ont., 1911.	Screw 2/3 "	33.8	7.0	3.4	4	4	Peterboro, Ont.	Peterboro Canoe Co., Peterboro, Ont.
Brenda C.	130,571	Tancook, N.S , 1910.	" 1/3 "	41.4	10.3	5.3	11	11	Lunenburg, N.S.	E. Covey, M.O., Tancook, N.S.
C. L. Miller	130,574	Little Tancook, N.S., 1909.	" 2/3 "	36.6	10.2	5.4	11	10	"	L. Miller, Northwest Cove, N.S.
Castlegar	130,556	Okanagan Landing, B.C.,'11	" 27 "	94.4	19.4	8.2	104	71	Vancouver, B C	C.P.R. Co., Montreal.
Chatson	130,282	Port Robinson, Ont., 1911	" 12 "	61.0	17.6	8.8	55	34	St. Catharines, Ont	R. Ross, Port Robinson, Ont.
Cora Gertie	126,878	Deer Island, N.B., 1911		64.0	16.3	7.0	31	31	Digby, N.S.	W. G. Crocker, Freeport, N.S.
Crombie	130,557	Chase, B.C., 1911	" 6 "	89.4	18.1	7.2	162	102	Vancouver, B.C	Adams River Lumber Co., Chase, B.C.
Emperor	126,654	Collingwood, Ont., 1910	" 199 "	525 0	56.1	27.0	7031	4641	Midland. Ont	Inland Lines, Ltd., Midland, Ont.
Forman F.	130,575	Little Tancook, N.S., 1910.	" 2/3 "	42 4	10 9	6.2	15	....	Lunenburg, N.S	O. Fleet, Blandford, N.S.
Glen Isle (1)	107,789	Ottawa, Ont., 1900	" 4 "	108 0	23.6	6.6	156	95	Ottawa, Ont	Rideau Canal Supply Co., Ottawa.
G. Whiz	126,839	Hamlet, Ont., 1911	" 12 "	73.0	16.0	3.0	55	39	Toronto	N. E. Bennett, Hamlet, Ont.
Gordon-Kelly	130,269	Simcoe, Ont , 1904	Pa. 2 "	37.0	10 6	3.0	16	10	Ottawa	G. Gordon & Co., Cache Bay, Ont.
I'Llaway	130,553	Vancouver, B.C., 1911	Screw 2 "	37.0	9 3	4.5	14	9	Vancouver, B.C	W. A. Akhurst, Vancouver, B.C.
John Milton (2)	75,588	Deseronto, Ont., 1876	" 2 "	48.0	10.0	3.9	14	10	Brockville, Ont	J. H. Simpson, Brockville, Ont.
Kitkatka	126,617	Hartley Bay, B.C., 1911	" 2/3 "	30.5	9.0	3.1	7	5	Prince Rupert, B.C.	P. Bates, *et al.*, Hartley Bay, B.C.
Laurentian (3)	113,641	Beverly, Eng , 1902.	" 84 "	149.0	24 0	11.1	355	155	Quebec, Que	A. C. and G. D. Davie, Levis, Que.
Lavita	130,549	Seattle, Wash., 1908	" 1 "	37.0	11 7	7.2	11	8	Vancouver, B.C.	E. W. MacLean, Vancouver, B.C.
Lottie B. L.	130,570	Tancook, N.S., 1910	" 2/3 "	42.0	10.4	5 3	12	11	Lunenburg, N.S	A. Levy, Little Tancook, N.S.
Maggie Main	126,840	Gravenhurst, Ont., 1909	" 1 "	40.0	8.5	4.5	19	16	Toronto	D. Schell, Gravenhurst, Ont.
Mary Winnie	130,550	Vancouver, B.C., 1911	" 1 "	34.8	9.5	4.0	10	7	Vancouver, B.C.	H. M. Wood, North Arm, Burrard Inlet, B.C.
Ostaig	126,959	Muskegon, Mich., 1910.	" 1/3 "	25.0	7.2	3.3	5	3	Victoria. B.C.	A. Blackburn, Ganges Harbor, B.C.
Oceana (4)	98,845	Dumbarton, Scotland, 1891.	" 1254 "	531.0	54.8	17.9	7815	4278	Toronto	Bermuda Atlantic Steamship Co., Toronto.
Phantom	126,669	Shelburne, N.S., 1911		35.0	6.9	4 1	8	5	Shelburne, N.S.	F. D. Parker, Wolfville, N.S.
Polana	126,930	Kingston, Ont., 1911	" 54 "	107.3	23.0	12.6	296	86	Quebec Que	Minister of Agriculture, Ottawa.
Prince Albert	99,584	Hull, Eng., 1892.	" 170 "	232.0	30.0	14.1	1015	587	Prince Rupert, B.C.	Grand Trunk Pacific Development Co., Montreal
Puddle Duck	130,554	Vancouver, B.C., 1910	" 1 "	42.5	9.4	4.4	15	10	Vancouver, B C	H. de Wolfe King, Vancouver, B.C.
Reverie	130,552	Coupeville, Wash., 1909	" 1/4 "	35.5	14.2	4.8	18	15	"	E. McMillan, North Vancouver, B.C.
Sadie Evelyn	130,580	Tancook, N.S., 1911	" 2/3 "	42 0	10.3	5.6	12	....	Lunenburg, N S	H Publicover. Blandford, N.S.
Senawa Nabee	126,720	St. John, N.B., 1911	" 3 "	38.0	9.3	5.0	17	12	St. John, N.B.	Minister of Public Works, Ottawa.
Tramontana	130,449	U.S.	" 1 "	60.0	16.0	6.0	23	19	Vancouver, B.C.	Kingcome Navigation Co., Vancouver, B.C.
Veuve	130,270	Sturgeon Falls. Ont., 1908	" 1 "	38.0	12.0	3.3	22	14	Ottawa	G. Gordon & Co., Cache Bay, Ont.
Victor S.	130,579	Tancook, N.S., 1908	" 1/2 "	40.2	10.3	5.8	12	11	Lunenburg, N.S.	A. Stephens, M O., Mill Cove, N.S.
Zora (5)	13,551	U.S.	" 2 "	39.9	10.8	3.5	15	10	Vancouver, B.C.	J. M. Smith, Vancouver, B.C.

(1) Formerly, Welshman. (2) Formerly, Florence. (3) Formerly, King Edward. (4) Formerly, Scott. (5) Formerly, Taku.

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA DURING JUNE, 1911.

Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners
Agnes Pauline	126,808	Shelburne, N.S., 1911	Schr.	74.0	22.0	9.0	71	Yarmouth, N.S.	N. D'Entremont, M.O., Pubnico, N.S.
Alice M.C.	130,578	Indian Harbor, N.S., 1907	"	38.0	10.6	5 4	12	Lunenburg, N.S.	H. Covey, M.O., Indian Harbor, N.S.
Caraquet	130,339	Caraquet, N.B., 1911	"	34.0	13.5	5 6	15	Chatham, N B.	P. Doiron, Caraquet, N.B.
Denton S.	130,567	Tancook, N.S., 1908	"	36.0	10.8	5.2	11	Lunenburg, N.S.	C. Scott, Indian Harbor, N.S.
Ella M. Young	130,568	" 1910	"	42.4	10.8	5.4	12	"	M. Young, Dover, N.S.
Filmore H.	130,576	Lunenburg, N.S., 1907	"	40.2	10.6	5 6	11	"	A. Hubley, Pleasantville, N.S.
Financier	130,338	Bay du Vin, N.B., 1911	"	34.0	9.7	5.0	10	Chatham, N.B.	J. R. McMaster, Harkwicke, N.B.
Fred.	126,776	Richibucto, N.B., 1911.	"	41.0	12.3	5.2	14	Richibucto, N.B.	W. E. Forbes. Richibucto, N.B.
Ginger	130,336	Caraquet, N.B., 1911	"	38.2	14.6	6.0	19	Chatham, N.B.	L. L. Friolet, Caraquet, N.B.
Hattie L. B	126,579	Little River, N.S.. 1911	"	43.4	6.6	6 5	12	Pt. Hawkesbury, N.S.	M. LeBlanc, Little River, N.S.
Hennepin	126,578	Grand Etang, N.S., 1911	"	42.0	11.6	6.7	12	"	J. M. Cormier, Grand Etang, N.S.
Irene L.	130,577	Little Tancook, N.S., 1910.	"	39.6	10.2	5.4	11	Lunenburg, N.S.	C. Levy, Little Tancook, N.S.
L'Acadienne	130,337	Lameque, N.B., 1911.	"	37.0	13.3	5.8	18	Chatham, N.B.	J. S. Noel, Shippigan Island, N.B.
Lola B.	126,915	Spry Bay, N S., 1910.	"	32.3	11.4	5.4	10	Halifax. N.S.	C. W. Boutilier, Spry Bay, N.S.
Marguerite H.	130,672	Mahone Bay, N.S., 1911	"	74.6	23.0	9 2	75	Lunenburg, N.S	D. Heisler, M.O., Lunenburg, N.S.
Marion R	126,916	Popes Harbor, N.S., 1910	"	51.5	13.6	6.2	22	Halifax, N.S.	D. Richardson, DeBay Cove, N.S.
Muriel L.	130,573	Little Tancook, N.S., 1910.	"	44.6	11.2	7.0	15	Lunenburg, N.S.	P. Lowe, Blandford, N,S.
Otokia	130,572	Mahone Bay, N.S., 1911	"	96.6	25.0	9.8	89	"	A. Ernst, M.O., Mahone Bay, N.S.
Pauline L.	130,671	Little Tancook, N.S., 1906.	"	43.6	10.8	6.6	15	"	F. Levy, Little Tancook, N.S.
R. J. W.	130,335	Caraquet, N.B., 1911	"	47.0	14.6	6 6	26	Chatham, N.B	P. J Fiott, Caraquet, N.B.
303	126,778	Richibucto, N.B., 1911	"	30.0	11.9	5.0	10	Richibucto, N.B.	W E. Forbes, Richibucto, N.B.
Violet C.	126,917	Sambro, N.S., 1911.	"	37.9	11.4	5.0	14	Halifax, N.S.	J. H. Smith, Sambro, N.S.
Westholme No. 2	126,957	Chemainus, B.C., 1900	Barge	80.3	36.5	8.4	218	Victoria, B.C	Westholme Lumber Co., Victoria, B.C.

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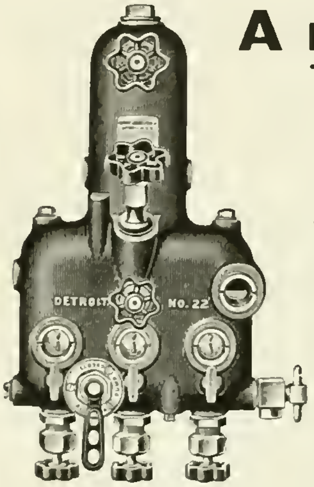

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The court exonerates the officers from all blame in this casualty.

Montreal Harbor Elevator Facilities

It was stated in Montreal, Aug. 3, that, as a result of the congested condition existing at the port, the Harbor Commissioners would shortly announce that in future no grain would be received at their elevators which was not destined for immediate shipment to trans-Atlantic ports. It was also stated that the 20 days free storage would be discontinued. D. Seath, Secretary to the Harbor Commission, is reported to have stated that Montreal was not intended to be a storage port, but was only suited as a quick transit centre.

In response to a request from Detroit for information on the point as to whether Montreal was unable to accommodate more grain, it was reported, Aug. 9, that the Commission had replied that the statement as circulated at certain lake ports to that effect was untrue, as no grain was allowed to remain unloaded longer than was necessary. On Aug. 9, it was stated that 15 vessels were waiting to discharge grain into elevators, but that there was no accommodation, the Commissioners' elevator and the G.T.R. elevator both being filled to capacity.

The Commissioners state that the fault does not lie so much with the port as with the grain dealers, who, in spite of the fact that they are well aware that every available foot of space in the elevators is occupied, continue to ship grain by thousands of bushels, without troubling about the fact that there are no storage facilities for it.

The Commissioners' new elevator will not be completed until the spring, but they have decided to enlarge it by providing for a further 850,000 bush., making the total capacity 2,600,000 bush. John S. Metcalf Co., Ltd., Montreal, are the designing and constructing engineers.

Notices to Canadian Mariners.

The Department of Marine has issued the following:—

75. July 13, 191. Ontario, Detroit River, Limekiln Crossing channel, light vessels again in position. 192. Ontario, Georgian bay, Midland bay, Tiffin, range lights established. 193. Ontario, Georgian bay, Victoria harbor, Port McNicoll, lighted beacon, buoys, sailing directions.

76. July 13, 194. Lists of Government stations for communication with shipping on the eastern coasts of Canada.

77. July 18, 195. New Brunswick, south coast, Bay of Fundy, St. John harbor, Partridge Island, lighthouse tower increased in height. 196. New Brunswick. Chaleur bay, Petit Rocher, buoy established. 197. Nova Scotia, Bay of Fundy, Hall harbor, lighthouse established. 198. Nova Scotia, Bay of Fundy, Hampton, lighthouse established.

78. July 19.—199. New Brunswick, south coast, Bay of Fundy, Musquash, intended change in character of light. 200. Nova Scotia, Bay of Fundy, Minas basin, Cobequid bay, Highland village, description of light. 201. Prince Edward Island, south coast, Northumberland strait, Egmont bay, entrance to Percival river, buoy established.

79. July 21.—202. New Brunswick, east coast, Northumberland strait, Richibucto harbor entrance, change in position of lights on south beach and north beach.

80. July 25. 203. Nova Scotia, Bay of Fundy, Lurcher shoal, lightship to be removed from her station temporarily for repairs.

81. July 26. 204. British Columbia, Vancouver island, Victoria harbor, Selkirk water, rocks off Halkett island, buoy. 205. British Columbia, Queen Charlotte islands, Graham island, Hecate strait, Skidegate inlet, Deadtree point, wireless telegraph station established.

82. July 27. 206. Quebec, Ottawa river mouth, Lake St. Louis, shoal in Dowker channel, temporary buoy. 207. Ontario, Detroit river, Ballard reef channel, bulletin board established. 208. Ontario, Lake Superior, east end, Batchawana bay, Corbeil point, name. 209. Ontario, Lake Superior, Thunder bay, Port Arthur, wireless telegraph station established.

83. July 27. 210. Quebec, Gulf of St. Lawrence, Gaspe coast, L'Anse a Beaufils, light established. 211. Quebec, Gulf of St. Lawrence, Magdalen islands, Grindstone island, wireless telegraph station established. 212. Quebec, River St. Lawrence, Portneuf-en-bas, new lighthouse. 213. Quebec, Saguenay river, Riviere du Moulin, change in front range light. 214. Quebec, River St. Lawrence, Barrett ledges, west buoy changed in position.

84. July 28. 215. Nova Scotia, Atlantic coast, Petpeswick inlet, positions of spar buoys. 216. Nova Scotia, Northumberland strait, Caribou channel, beacons.

85. July 31. 217. British Columbia, Strait of Georgia, Malaspina strait, Powell river, hydrographic notes, buoys established. 218. British Columbia, Nepean sound, Otter channel, reported rock northwestward of Campania island not found.

86. Aug. 1. 219. Nova Scotia, south coast, submarine bell buoy moored near Egg island gas and whistling buoy for experimental purposes. 220. Nova Scotia, Cape Breton island, south coast, L'Ardoise, storm signal station established. 221. Nova Scotia, Cape Breton Island, east coast, storm signal stations established. 222. Nova Scotia Cape Breton island, north coast, Bay St. Lawrence, storm signal station established. 223. Quebec, Gulf of St. Lawrence, off Fame Point, submarine bell buoy moored for experimental purposes.

87. Aug. 2. 224. Quebec, Gulf of St. Lawrence, Gaspe basin, paddy shoal lighthouse, color of pier, light to be changed. 225. Quebec, Gulf of St. Lawrence, Gaspe Basin, Jauvum shoal, lighthouse, color of pier, light to be changed.

88. Aug. 3. 226. Nova Scotia, Bay of Fundy, Brier island lightstation, intended change in characteristic of fog alarm. 227. Nova Scotia, west coast, Cape Fourchu lightstation, intended change in characeristic of fog alarm. 228. Nova Scotia, south coast, Halifax approach, Chebucto head, intended change in characteristic of fog alarm. 229. Nova Scotia, south coast, Halifax harbor, Mauger beach, intended change in characteristic of fog alarm. 230. Nova Scotia, southeast coast, Cranberry island, intended change in characteristic of fog alarm. 231. Nova Scotia, Cape Breton island, south coast, Louisburg harbor, intended change in characteristic of fog alarm. 232. Nova Scotia, Cape Breton island, east coast, Scatari island, northeast point, intended change in characteristic of fog alarm. 233. Nova Scotia, Cape Breton island, east coast, Flat point lightstation, intended change in characteristic of fog alarm. 234. Newfoundland, south coast, Cape Freels, intended change in characteristic of fog alarm. 235. Newfoundland, southeast coast, Cape Race, intended change in characteristic of fog alarm.

89. Aug. 8.—236. Ontario, Georgian bay, Byng inlet, additional buoys.

90. Aug. 10.—237. Nova Scotia, south coast, telephone cable laid from Chebucto head to Sambro island. 238. Prince Edward Island, north coast, Tracadie, change in position of range lighthouses. 239. Quebec, River St. Lawrence below Quebec, north of Patience island, gas buoy removed. 240. Quebec, River St. Lawrence below Quebec, West narrows, West Sand spit, can buoy replaced temporarily by gas buoy.

91. Aug. 11.—241. British Columbia, Vancouver island, west coast, Clayoquot sound, Fortune channel, Mosquito harbor, Plover point, light discontinued. 242. British Columbia, Vancouver island, west coats, Clayoquot sound, Village channel, lighted buoys. 243. British Columbia, Vancouver island, southeast coast, Esquimalt harbor, Constance cove, position of mooring buoy. 244. British Columbia, Strait of Georgia, Discovery passage, Cape Mudge, buoy established. 245. British Columbia, Seymour inlet, Wawatle bay, uncharted rock.

92. Aug. 12.—246. Ontario, Great Lakes and River St. Lawrence, dates to which lights will be kept in operation.

93. Aug. 14. 247. Quebec, Gulf of St. Lawrence, Cape Rosier, intended change in characteristic of fog alarm. 248. Quebec, Gulf of St. Lawrence, Cape Magdalen, intended change in characteristic of fog alarm. 249. Quebec, Lake St. John, mouth of Peribonka river, range lights established. 250. Quebec, Lake St. John, back range light on Riviere a la Pipe wharf. 251. Quebec, River St. Lawrence below Quebec, eastward of Orleans Island, gas buoys placed temporarily for dredging purposes.

Maritime Provinces and Newfoundland.

The town of Campbellton, N.B., has deposited plans and description of a wharf to be built on the Restigouche River there.

An order in council has been passed, making compulsory, the payment of pilotage dues, within the pilotage district of Shepody Basin, N.B.

The Department of Marine is receiving tenders, to Sept. 5, for four third order 10 ft. iron lanterns for lighthouses situated in the Maritime Provinces.

W. N. Reinhardt, owner of the schooner Guide, is suing the Steamship Cape Breton Co., owner of the s.s. Cape Breton, for damages due to the collision between the two vessels.

The Dominion Government s.s. Montmagny left Quebec, Aug. 15, for the Lower St. Lawrence, the Straits of Belle Isle and Labrador, with provisions and construction materials for various stations there.

Hon. E. Bowring, announced at St. John's, Nfld., at the recent celebration of the centenary of the firm of Bowring and Co., that the directors had decided to give as a centenary memorial, $10,000 a year for five years, and in addition, the regular employes were each to receive one month's wages.

The Halifax Trading and Sealing Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $85,000, and office at Halifax, N.S., with powers, among other things, to carry on a general shipping business, and to build, purchase, or otherwise acquire, and operate vessels of all kinds.

The Dominion Coal Co. has entered into a contract with Furness Withy and Co. for the carrying of coal from Sydney, N.S., for seven years. In order to carry out this agreement, Furness Withy and Co. have ordered in Middlesbrough, Eng., two specially designed vessels, with a carrying capacity of 7,600 tons each.

Tenders were received by the Public Works Department, Aug. 10, for the construction of a dry dock at St. John, N.B., and for dredging and other harbor works there, which it is proposed to

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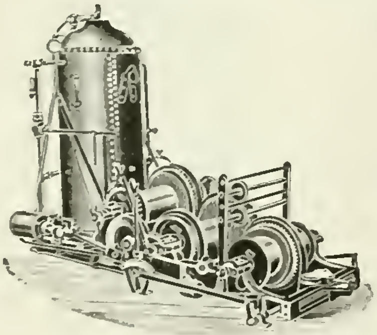

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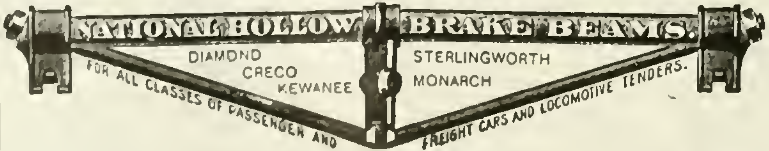

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carry out at Courtenay Bay. It is said that tenders have been received from some of the well known British firms specializing in this class of work.

The s.s. Amethyst, which was recently wrecked at Mutton Head, near Trepassey, on the southeast coast of Newfoundland, was built at Stockton-on-Tees, Eng., in 1878, and was formerly named Santiago de Cuba. She was screw driven, with engine of 120 n.h.p. Her dimensions were: length, 240.5 ft.; breadth, 32.2 ft.; depth, 16.6 ft.; tonnage, 1,495 gross, 894 register.

The Port Hood Richmond Railway Coal Co.'s s.s. John Irwin, which recently foundered at sea, under unknown circumstances, during a heavy storm, was built at Paisley, Scotland, in 1897. She was screw driven, with engine of 68 n.h.p. Her dimensions were: length, 140 ft.; breadth, 23.1 ft.; depth, 9.7 ft.; tonnage, 303 gross, 80 register. Of the crew of 11, one only was saved.

The Minister of Public Works, while in St. John, N.B., Aug. 9, is reported to have said that as soon as the transfer of the lots on the west side of the harbor from the city to the C.P.R. is completed, tenders will be called for the construction of an extensive wharf and sea wall, and possibly for the extension of the present breakwater to Partridge Island, for the protection of the harbor.

A steamboat, named Robert G. Cann, was launched at Shelburne, N.S., recently, for Hugh Cann and Son, for operation on the Canso and Mulgrave route, replacing the steamboat John L. Cann. She was subsequently towed to Yarmouth, where her machinery will be installed. Her dimensions are: length, 124 ft.; breadth, 25 ft.; depth, 9 ft. The hull has been built exceptionally strong and sheathed with galvanized iron about the water line, as she will be in operation during the winter.

The Government has received eight tenders for the building of vessels for the Canadian navy. Of the chief firms tendering, it is reported that Cammel, Laird and Co. were the lowest, and stated that its plant would be located at St. John, N.B. Swan, Hunter and Wigham Richardson, the second lowest tenderer, named Halifax, N.S., as their proposed location; the British Canadian Shipbuilding Co., of which Sir Henry M. Pellatt is the head, named Sydney, and Vickers, Limited, named Montreal.

The joint commission appointed by Canada and the U.S. recently to enquire into the feasibility and desirability of further improving the navigation of the St. John River, by the construction of storage dams and other works, has sent in an interim report, describing the work done up to the present, and stating that enough data has been secured to justify them in carrying out the study of the problems which will form the basis of their final report, which, it is expected, will be submitted in the fall.

Province of Quebec Marine.

The Montreal Harbor Commission's steam tug Sir Hugh Allan, arrived at Montreal, from Barrow-in-Furness, Eng., at the end of July, having taken 15 days on the voyage.

The Montreal Harbor Commissioners have awarded contracts for the construction of two concrete sheds, each 400 ft. long, on the Tarte pier. At first the sheds will be built one story, but provision will be made for the addition of another at any time.

A notice has been issued to all vessels to reduce their speed to a minimum when passing a point in the St. Lawrence River, at Quebec, between the Allan Line wharf and the market dock, where the National Transcontinental Ry. Commissioners have a scow at work with deep water boring apparatus.

The C.P.R. has installed a fire pump on its Atlantic service tug Cruizer. It was made in London, Eng., is operated in conjunction with the tug's boilers, and is capable of sustaining a pressure of 160 lbs. A recent test proved the capabilities of the apparatus and its usefulness in case of fire.

The Dominion Government has entered into a contract with Canadian Vickers, Limited, Montreal, for the construction of a dry dock at Montreal, to be of the floating type, and of the first class, for which a subsidy will be paid of 3½% per annum for 35 years, on an investment up to $3,000,000. The dock will be built in England and towed to Montreal.

The Montreal harbor revenue for July was $57,381.71, against $56,456.68 for July, 1910. From the commencement of navigation to July 31, the revenue was $176,380.73, against $169,296.73 for the same period 1910. There was a slight decrease in receipts from imports. Since the commencement of navigation, 372 ocean-going vessels, with a tonnage of 1,112,609, entered the harbor, against 351 vessels, with a tonnage of 1,041,721 for the same period 1910.

Ontario and the Great Lakes.

During July, there were 1,249,935 bush. of grain received at Kingston, and transhipped to Montreal by river barges.

The Northern Navigation Co.'s s.s. Hamonic was recently docked at Port Arthur, to have a propeller blade replaced.

The Department of Public Works will receive tenders to Sept. 11 for the construction of a breakwater at Thessalon, in the Algoma district.

The Department of Railways and Canals received tenders, Aug. 21, for the construction of a turning basin at Thorold, on the Welland canal.

The Department of Marine steamboat Lambton, grounded on Pancake shoal, near Whitefish Point, Aug. 6, and was subsequently released with minor damages.

The Niagara Navigation Co.'s steamboat, Chicora, was towed to Toronto by the same company's steamboat, Cayuga, Aug. 21, having broken her intermediate shaft.

The Department of Public Works has awarded contracts for dredging at Big Island to R. Weddell and Co., Trenton, and at Kingsville, to the Windsor Dredging Co., Windsor, Ont.

The Niagara, St. Catharines and Toronto Navigation Co.'s steamboat Dalhousie City, has been placed in service between Toronto and Port Dalhousie, making two trips daily.

The Ontario and Quebec Navigation Co.'s s.s. Geronia, while entering the C.P.R. wharf at Brockville, Aug. 22, collided with the ferry steamboat Bigelow, considerably damaging her upper works.

The Canadian Storage Corporation, Ltd., proposes to build storage warehouse docks at Port Arthur, each 800 ft. long, with concrete buildings, seven stories high, each costing about $400,000.

The Marine Department is placing a buoy on the Minnie Blakley shoal at Point Anne, near Belleville, where the Lake Ontario and Bay of Quinte Steamboat Co.'s steamboat Caspian recently grounded.

The ferry steamboat Sirius, operating between Cornwall, Ont., and Massena, N.Y., and owned in the latter place, capsized, Aug. 1, shortly after leaving the New York shore, seven of the passengers being drowned.

A steam tug, named John R. Stover, built for Eddy Bros., Bay City, Mich., was launched at Collingwood recently. She is built of steel throughout, her dimensions being: length, 75 ft.; breadth, 18 ft.; depth, 9 ft.

Capt. Williams, commodore of the Toronto Ferry Co.'s fleet, was removed from the steamboat Trillium, Aug. 13, on account of sudden illness. His place was taken by Capt. Jennings of the steamboat Primrose.

The Niagara, St. Catharines and Toronto Navigation Co.'s steamboat, Dalhousie City, left Collingwood, Aug. 14, for Toronto, where she arrived, Aug. 21, when she was placed on her route between Toronto and Port Dalhousie.

The Gereral Realty Corporation, Ltd., has been incorporated under the Dominion Companies Act, with a capital of $500,000 and office at Port Arthur, with power among other things to build, own, deal in and operate steam and other vessels.

The Niagara Navigation Co.'s s.s. Cayuga, which lost a blade from one of her propellors, Aug. 7, had the damage repaired at Toronto by the use of the specially designed cofferdam, which was fully described and illustrated in our June and July, 1908, issues.

SAULT STE. MARIE CANALS TRAFFIC

The following commerce passed through the Sault Ste. Marie Canals in July:

ARTICLES			CANADIAN CANAL	U. S. CANAL	TOTAL
Copper	Eastbound	Short tons	1,300	16,379	17,679
Grain	"	Bushels	2,907,776	645,976	3,553,752
Building stone	"	Short tons	1,760	30	1,790
Flour	"	Barrels	311,501	456,360	767,861
Iron ore	"	Short tons	3,698,654	1,463,169	5,161,823
Pig iron	"	"		5,081	5,081
Lumber	"	M. ft. B.M.	5,835	82,214	88,049
Silver ore	"	Short tons			
Wheat	"	Bushels	4,707,365	1,475,232	6,182,597
General merchandise	"	Short tons	6,152	16,060	22,212
Passengers	"	Number	4,626	7,017	11,643
Coal, hard	Westbound	Short tons	56,021	362,411	418,432
Coal, soft	"	"	596,698	1,613,611	2,210,309
Flour	"	Barrels			
Grain	"	Bushels		1,100	1,100
Manufactured iron	"	Short tons	39,258	24,128	63,386
Iron ore	"	"			
Salt	"	Barrels	8,397	58,169	66,566
General merchandise	"	Short tons	82,480	85,649	168,129
Passengers	"	Number	6,577	6,703	13,280
Vessel passages		Number	1,029	1,845	2,874
Registered tonnage		Net	2,928,324	3,611,996	6,540,320
Freight—Eastbound		Short tons	3,940,525	1,735,094	5,675,619
" —Westbound		"	775,657	2,094,543	2,870,200
Total freight		"	4,716,182	3,829,637	8,545,819

Short tons are tons of 2,000 pounds

DEPARTMENT OF RAILWAYS AND CANALS.

Branch Line of Railway From Guysborough to Sunny Brae Through Country Harbor Crossroads with an Extension from Country Harbor Crossroads to Deep Water of Country Harbor.

SEALED TENDERS addressed to the undersigned and endorsed "Tender for Guysborough County Harbor Line," will be received at this office until 16 o'clock, on Friday, September the 15th, 1911, for section No. 1, of the above line of railway, comprising that portion extending from Gnysborough to Country Harbor Crossroads and from the latter point to Deep Water Country Harbor.

Plans profiles specifications and forms of contract to be entered into can be seen on and after the 15th instant at the office of the Chief Engineer of the Department of Railways and Canala, Ottawa, at the office of the Chief Engineer, of the Intercolonial Railway, Moncton; and at the office of the Board of Trade of Halifax. Forms of tender may be procured from the Chief Engineer of the Department of Railways and Canals or from the Chief Engineer of the Intercolonial Railway.

Parties tendering will be required to accept the fair wages schedule prepared or to be prepared by the Department of Labor, which schedule will form part of the contract.

Contractors are requested to bear in mind that tenders will not be considered unless made strictly in accordance with the printed forms, and in the case of firms, unless there are attached the actual signature, the nature of the occupation, and place of residence of each member of the firm.

An accepted bank cheque for the sum of $100,000 made payable to the order of the Minister of Railways and Canals must accompany each tender, which sum will be forfeited if the party tendering declines enteriog into contract for the work at the rates stated in the offer submitted.

The cheque thus sent in will be returned to the respective contractors whose tenders are not accepted.

The cheque of the successful tenderer will be held as security, or part security, for the due fulfilment of the contract to be entered into.

The lowest or any tender not necessarily accepted.

By order,
L. K. JONES.
Secretary.

Department of Railways and Canals.
Ottawa, August 12th 1911.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.

The Canadian Pacific Railway Co.

DIVIDEND NOTICE.

At a meeting of the Board of Directors, held this day, the following dividends were declared:—

On the Preference Stock two per cent. for the half year ended 30th June last.

On the Common Stock two and one-half per cent. for the quarter ended 30th June last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from interest on the proceeds of land sales and from other extraneous assets.

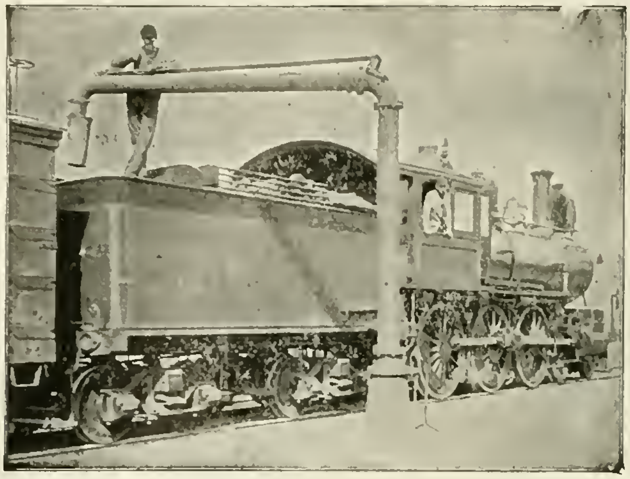
Both dividends will be paid on September 30th to shareholders of record at the closing of the books in Montreal, New York, and London, at 3 p.m. on Friday, 1st September next.

All books will be re-opened on Thursday, October 5th.

By order of the Board.
W. R. BAKER,
Secretary.

Montreal, 14th August, 1911.

During June, four employes were killed, and one injured, in the course of their work in connection with the navigation of Canadian vessels. Of the fatalities, two were due to falls from vessels and drowning, and one each to being crushed between lock gates and vessel and to a fall overboard and striking a log.



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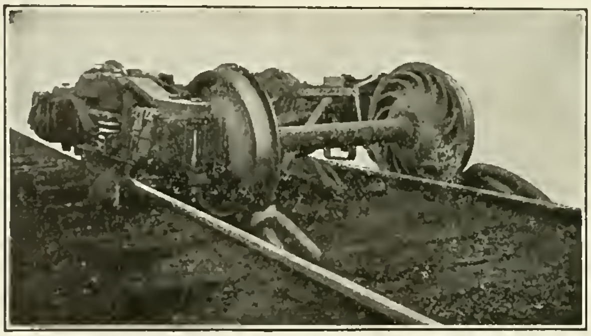

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PHILADELPHIA, Pa.

The Cornwall and Montreal Navigation Co.'s steamboat Filgate, which was burnt recently at Valleyfield, Que., has been raised and the hull taken to Cornwall, where it has been docked. It is stated that the vessel will, in all probability, be rebuilt, and be ready for further service next season.

Press reports from Windsor, state that the residents of Pelee Island have subscribed the necessary funds for the building of a steamboat to ply between the island and the main land. The proposed vessel, it is said, will be larger than any of those now on this service, which are considered too small for rough weather.

Traffic on the Canadian canals for July shows considerable falling off in the tonnage passing through. The total is 17,143,060, against 21,457,752, a decrease of 4,314,692 tons. The decrease is chiefly due to the Sault canals, where about 4,500,000 tons less of ore was handled this year than in the same month of 1910.

The Merchants Mutual Line steamboat, H. M. Pellatt, was seized, Aug. 14, at Montreal, on a claim for $10,000 for damages sustained by the U.S. yacht Cignet, in a collision in the canal, Aug. 12, for which it is alleged the H. M. Pellatt is responsible. The vessel was released on bonds furnished by G. E. Jaques and Co., agents.

The Keystone Transportation Co.'s steamboat Key West ran into the head gates of lock 21 on the Welland canal, Aug. 20, opening them and thus causing the carrying away of the gates and some damage to the vessel itself. The replacing of the gates was accomplished in very short time, and locking was resumed the following day.

The Midland Towing and Wrecking Co.'s barge Albatross foundered in Georgian Bay, near French River, Aug. 21, those on board being saved after spending the night and day drifting in small boats. The barge was in tow of the Midland tug C. C. Martin, which was also lost, together with her entire crew.

W. R. Burgin has been appointed Travelling Freight and Passenger Agent, Northern Navigation Co., to cover the territory west of Toronto, including the Northern Division of the G.T.R., with office at Sarnia, Ont. S. Hewitt has been appointed Travelling Freight and Passenger Agent for the city of Toronto, and other special work, with office at the Union Station, Toronto.

The steamboat Mary Louise, owned in Kingston, was reported to have sunk in the Rideau River, near Dog Lake, Aug. 12. She was built at Portland, Ont., in 1902, as a sailing vessel, her dimensions being: length 77.2 ft., breadth 18.6 ft., depth 4.2 ft., tonnage, 60 gross, 30 register, and she was equipped with engine of 3 n.h.p. driving a screw.

The Ontario and Quebec Navigation Co.'s s.s. Geronia, while en route from Quebec to Toronto, Aug. 9, lost one of her propellors, and had to be docked at Kingston to have it replaced. It was estimated that the company would lose about $10,000 on account of the mishap, as the vessel was booked to capacity, the route having proved exceedingly popular.

The following is a list of members of the Toronto Harbor Commission, created by the recent legislation, re-modelling the previous commission, and extending its powers. Appointed by the Dominion Government, F. S. Spence; appointed by the city, T. L. Church, R. H. Smith and L. V. Clarke; appointed by the Toronto Board of Trade, R. S. Gourlay.

Press reports recently stated that the new lake freighter Toiler, which is equipped with internal combustion engines, and of which we have given full description, was on her way across the Atlantic to take up her service on the Great Lakes. We are officially advised that she is not on her way to Canada, and it is not likely that she will come out this season.

The Reid Wrecking Co.'s steam tug Winslow was burnt at Meldrum Bay, while on its way to Georgian Bay, Aug. 21. She was built at Cleveland, O., in 1865. Her dimensions were: length 120 ft., breadth 19 ft., depth 10 ft.; tonnage 353 gross, 193 register. She was equipped with engine of 150 n.h.p. driving a screw. The loss is put at $25,000 with insurance of $20,000.

Press reports state that the Buffalo, Lockport and Rochester Transit Co.'s steamboat Olcott, operating between Toronto and Olcott Beach, N.Y., will be lengthened, during the winter, by 30 ft., making her 204 ft. over all. The increase in size will enable her to accommodate about 1,400 passengers. It is also stated that a new boiler will be installed in place of the present two small boilers.

The Ontario and Quebec Navigation Co.'s steamboat Geronia left Toronto, on her maiden trip to Quebec, Aug. 3. This route will be continued for the remainder of the season, the following ports being called at each way: Charlotte, N.Y., Brighton, Trenton, Belleville, Deseronto, Picton, Kingston, Gananoque, Prescott, Brockville, Iroquois, Morrisburg, Cornwall, Montreal and Quebec.

The Calvin Co.'s s.s. Chieftain III., which was sunk in collision with the s.s. Hero, Aug. 20, in the St. Lawrence River, near St. Antoine, was built at Garden Island, Ont., in 1906. Her dimensions were: length 142.4 ft., breadth 39.4 ft., depth 9.3 ft., tonnage, 355 gross, 147 register, and she was equipped with engine of 48 n.h.p. driving a paddle wheel. Four of the Chieftain's crew were lost.

The U.S. Lake Survey reports the levels of the Great Lakes, in feet above tidewater, for July, as follows:—Superior, 601.64; Michigan and Huron, 579.88; Erie, 571.75; Ontario, 245.54. Compared with the average July levels for the past 10 years, Superior was 1.10 ft. below; Michigan and Huron, 1.33 ft. below; Erie, 1.13 ft. below, and Ontario 1.33 ft. below. It was anticipated that during August Superior, Michigan and Huron would rise 0.1 ft., and Erie and Ontario 0.2 ft.

The Lake Shippers' Clearance Association held its annual meeting in Winnipeg, Aug. 22, when the report for the past year showed that 82,065,629 bush. of grain were loaded, against 74,440,421 for the previous year. The association was organized two years ago to facilitate the handling and shipping of grain from the head of the lakes, and has headquarters at Winnipeg, with a branch at Fort William, Ont. There was an excess of revenue over expenditure of $11,731.38. The officers for the current year are:—President, J. Fleming; Secretary, A. C. Ruttan; Treasurer, A. K. Godfrey; Directors, G. Tilt, P. N. Baird and F. W. Young.

Following a tour of inspection of the works in progress in Toronto harbor by the newly appointed Harbor Commission, and others, J. G. Sing, Government Engineer said, Aug. 15, there is no reason why vessels up to 600 ft. long should not come into the harbor, but in order to make it safe for them to do so there should be a depth of water of 28 ft. The chief work inspected was the new western channel, which has been made 400 ft. wide, with two piers of stone and re-inforced concrete, about 30 ft. wide, the longer pier being 2,500 ft. long. The work on the city dock at Ashbridge's bay has been commenced, a considerable amount of piling having been done.

The U.S. Department of Labor and Commerce issued a circular, Aug. 17, calling attention to the law forbidding Canadian vessels from carrying excursion passengers from U.S. ports to Canadian ports and back. This law provides a penalty of $200 for each passenger so carried. On Aug. 21 the Assistant Secretary of the department stated in a letter that the situation had been brought to the Department's attention through the case of the Turbinia Steamship Co.'s s.s. Turbinia, which left Charlotte, N.Y., July 9, with a party of excursionists for Presqu'Ile Bay, on the Canadian side, and return. When the vessel arrived at Presqu'Ile, the channel was blocked and she returned to Charlotte. A fine of $183,000 was imposed, which was reduced to $500, and later, after the explanation of the owners of the Turbinia, to $50. He also is reported to have stated that Canadian vessels for some years had taken large excursions parties from Charlotte to Cobourg, Ont., and other Canadian ports, and in many instances the tickets provided specifically that passengers should not go ashore at any place until the vessel returned to Charlotte. This, he said, is a distinct violation of the law.

The Department of Marine has issued a notice that all Canadian lights and fog alarms in Lake Superior will be kept in operation until Dec. 15, or later if the season of navigation will permit, with the exception of the lights at Caribou Island, Otter Island, Michipicoten Island, Gargantua, Michipicoten harbor and Corbeil point, from which stations and keepers may be removed at any time after Dec. 1. The lights and fog alarms in Lake Huron, Georgian Bay, Lake St. Clair, Lake Erie and Lake Ontario and connecting waters will also be kept in operation to Dec. 15, except southeast shoal lightship, Lake Erie, which may be moved from her station not earlier than Dec. 5, and Lonely Island light, Georgian Bay, which may be closed Dec. 5. All lights in the River St. Lawrence will be kept in operation as long as navigation is open, and all gas buoys, both on the river and the Great Lakes, will be kept at their stations as long as ice conditions will permit, and where it is necessary to remove the buoys before the close of navigation, spar markers will be laid down if possible. Light keepers are cautioned to maintain their lights until the dates specified for their respective districts and later if navigation remains open.

Hon. Rodolphe Lemieux, heretofore Postmaster General, has been appointed Minister of Marine and Fisheries, in place of Hon. L. P. Brodeur, who has been appointed a judge of the Supreme Court.

The Canadian section of the International Waterways Commission, recently created under the new treaty between Canada and the U.S., consists of Sir George Gibbons, London, Ont., Chairman; A. Geoffrion, K.C., Montreal, and A. P. Barnhill, St. John, N.B.

In referring to the proposal of Cammell, Laird and Co., naval contractors, of England, to establish dock and shipbuilding works in Canada, the Canadian Gazette of London, Eng., stated, Aug. 10:—"To this firm has fallen the high distinction of receiving from the Canadian Government the contract to build the fleet of war vessels which the Canadian authorities have decided to construct." Among the tenders recently sent in for the construction of the proposed vessels, it has been stated that Cammell, Laird and Co.'s was the lowest, but on Aug. 28 we were officially advised that the contract had not been awarded.

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Railway Exchange
CHICAGO

THE CANADIAN PACIFIC RAILWAY COMPANY.

Notice to Shareholders.

The Thirteenth Annual General Meeting of the Shareholders of this Company for the election of Directors to take the places of the retiring Directors, and for the transaction of business generally, will be held on Wednesday, the 4th day of October next, at the principal office of the Company at Montreal, at Twelve o'clock noon.

The Common Stock transfer books will be closed in Montreal, New York and London at 3 p.m. on Friday, the first day of September; the Preference Stock books will be closed in London at the same time.

All books will be reopened on Thursday, the fifth day of October.

By order of the Board.
W. R. BAKER,
Secretary.

Montreal, August 14th, 1911.

The Niagara Navigation Co.'s steamboat Chicora was taken out of service, Aug. 19, for the remainder of the season, on account of damage to her machinery. She was berthed for the winter at Toronto and an examination made, when it was found that her main shaft crank was broken and that the [illegible] bed plates had given way. It is reported that the vessel will probably be sold and that a new vessel will be purchased for next season's traffic.

JAMES THOMSON, Pres. and Mang. Director
J. G. ALLAN, Vice President.
JAMES A. THOMSON, Secretary

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Weekly Sailings Between Montreal, Quebec and Liverpool
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American
New York, Plymouth, Cherbourg, Southampton
St. Louis ..Sept. 9 | New York ..Sept. 16
St. Paul ..Sept. 23 | Philadelphia Sept. 30

Atlantic Transport
New York London Direct
Minnetonka Sept. 9 | Minnehaha .Sept. 16
Minnewaska Sept. 23 | Minneapolis Sept. 30

Red Star
London, Paris, via Dover—Antwerp
Lapland ....Sept. 9 | Kroonland ..Sept. 16
Finland ....Sept. 23 | Vaderland ..Sept. 30

White Star
New York—Queenstown—Liverpool
Cedric .....Sept. 14 | Celtic ......Sept. 28
Baltic .....Sept. 21 | Adriatic .....Oct. 5
New York, Plymouth, Cherbourg, Southampton
Olympic ...Sept. 9 | Majestic ....Sept. 16
Oceanic ....Sept. 23 | Olympic ....Sept. 30

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Manitoba, Saskatchewan and Alberta.

The Red River Navigation Co., Ltd., recently incorporated at Winnipeg, with a capital of $1,000,000, will, it is reported, commence operating on the Red River, on a large scale, in the spring of 1912.

The Hudson's Bay Co.'s Edmonton manager, on his return there recently from a trip to the Peace River and Athabasca districts, is reported to have stated that next year a full schedule would be put in force for all boats on the northern rivers and lakes, and proper connections established. It was anticipated that a trip could be arranged from Athabasca Landing to Grand Rapids, thence to Fort McMurray and continued by Lake Athabasca, and tributary streams to the Mackenzie River, and thence to the Arctic circle, about 3,600 miles.

Meetings are being arranged in Grand Forks, N.D., with a view to seeing what steps can be taken to improve the conditions on the Red River, so that navigation may be undertaken with safety, to Winnipeg. Suggestions will be made that the channel be deepened, and that, among other things, lock dams be constructed at various points. In 1884 the steamboat Grand Forks navigated the river from Grand Forks to Winnipeg, and in 1909 the same vessel repeated the trip, but the conditions were found to be unfavorable, on account of low water at various points.

At a recent meeting of the joint committee on wharfage and dockage of the Winnipeg and St. Boniface councils, Col. Ruttan, City Engineer of Winnipeg, was instructed to go to Ottawa to secure the information necessary to establish a harbor commission, and to submit plans for proposed temporary docks, etc. A bylaw is being prepared for submission to the ratepayers at an early date, for the purpose of supplying the necessary funds for the erection of temporary docks and shipping facilities.

B.C. and Pacific Coast Marine

The Progressive Towing Co., Vancouver, is applying for authority to change its name to the Progressive Steamboat Co.

During July, vessels with a registered tonnage of 153,914 entered Vancouver harbor from foreign ports, against a tonnage of 116,965 for July, 1910.

Greer, Coyle and Co.'s steamboat Aluvia, recently built at Lulu Island, has been taken over by the owners for operation on the Upper Fraser River, in the freight trade. She is 100 ft. long, by 25 ft. beam.

The C.P.R. Arrow Lake steamboat Bonnington, which was launched at Nakusp, in May, has been completed and placed on her route. She is a four-decker with accommodation for about 600 passengers.

The North Arm Steamship Co. has leased additional property on the waterfront to the west of the ferry wharf at Vancouver, for one year, and will erect passenger offices and a warehouse there, on account of increased business.

The Queen Charlotte Fishing Co., Ltd., has been incorporated under the British Columbia Companies Act, with a capital of $100,000, and office at Vancouver, to carry on a general fishing business, and with power to own and operate steam and other vessels.

The All Red Steamship Co., which operates the s.s. Selma to ports on the Powell River, is reported to be negotiating, in England, for the purchase of another vessel, to enable a daily service between Vancouver and the Powell River, instead of a tri-weekly one, as at present.

H. H. H. Lonsdale and J. P. Fell, of Vancouver, have applied to the Governor in Council for approval of construction of certain works, consisting of dredging, filling in and making of wharves on the foreshore in front of district lot 265, group 1, New Westminster District.

The steamboat Skeena, recently purchased by the North Arm Steamship Co. from Foley, Welch and Stewart, as mentioned in our last issue, is being placed in service to North Arm ports. She has passenger accommodation for about 400, and was formerly used in the passenger and freight service on the Skeena River.

A number of Puget Sound steamship companies are reported to have amalgamated under the name of the Sound Packet Lines, with the intention of operating between all Sound ports of importance, including Victoria and Vancouver. The vessels affected are given as Edith, Transport, Fidelago, Neptune and Dredger no. 2.

The G.T.P. Coast Steamship Co.'s s.s. Prince John, arrived at Victoria at the end of July, from Glasgow, Scotland, having taken 71 days on the voyage round the Horn. After a cleaning and overhauling, she will be placed on the Islands run, relieving the s.s. Prince Albert, which will take the place of the s.s. Henriette.

Judge Grant, at Vancouver, recently decided a case where an employe sued the C.P.R. for wrongful dismissal, for refusing to handle cargo from a vessel on a Sunday, by dismissing the claim, holding that the company was within its contract rights, but ordered that the employe be paid an amount deducted from his pay wrongfully.

Investigations into the causes of the wrecks of the steamships Princess May, owned by the C.P.R., and Belcarra, owned by the Sechelt Steamship Co., were opened at Vancouver, Aug. 18. The former vessel struck on the north reef of Sentinel Island, near Juneau, Alaska, Aug. 5, 1910, and the latter sank in the Agamemnon Channel, Jervis Inlet, Sept. 17, 1910.

Work is progressing on the G.T.P. Coast Steamship Co.'s wharf at Victoria. The site is at the foot of Main St., and the old Albion Ironworks and other buildings there have been removed. About 160 piles have been placed, and a considerable portion of the wharf has been built. The plans for the erection of a warehouse, had not, at the time of writing, been passed.

The auxiliary schooner Tuladi, after having been thoroughly overhauled and repaired, has been licensed to carry passengers, and has been placed on the route between Victoria and Sidney and the islands. She was built at Vancouver in 1908, and is equipped with a gasolene engine of 4 n.h.p., driving a screw. Her dimensions are: length, 49.3 ft.; breadth, 14.3 ft.; depth, 6 ft.; tonnage, 32 gross, 21 register.

The Nelson board of trade is preparing statistics of the cost of making the Columbia River navigable, on the Canadian side of the International boundary. A commission has been appointed in the State of Washington, to deal with the river on the U.S. side, and arrangements are being made with a view to joint action being taken to lay the matter before both the Dominion and Federal authorities, and to obtain funds for the carrying out of complete surveys.

Balfour, Guthrie and Co. are reported to have stated that work will be commenced shortly on the construction of their new dock at Vancouver, which will be built in connection with the C.N.R. and the Great Northern Ry. The plans, which have been deposited with the Public Works Department at Ottawa, show a dock about 750 by 100 ft., situated between the sugar refinery and Heatley Ave. Large sheds will be erected, which will be without pillars or other obstructions, and it is hoped to have the work completed by November.

The directors of the North Vancouver Ferry Co., at a recent meeting, ordered the issue of 80,000 fully paid up, non-assessable shares to the city of North Vancouver, under agreement of purchase, made in March. A discussion also took place regarding the equipment of the ferry no. 1, with a new boiler, preferably one with a pumping attachment, so that the vessel might be used as an auxiliary in case of fire. A contract for the installation of a new boiler in ferry no. 2, has been awarded to McDougal and Jenkins, North Vancouver, for $1,700.

The Union Steamship Co.'s s.s. Chelohsin, which was recently launched at Dublin, Ireland, is of the following dimensions: length between perpendiculars, 175 ft.; breadth molded, 35 ft.; depth to awning deck, 22½. She has three complete decks, with shade deck running almost from end to end, above which are located a number of state rooms, smoke room, pilot house and officers' quarters. She is fully equipped with electric light, steam heating, electric fans, and all modern appliances for the comfort and convenience of passengers. The machinery consists of triple expansion engines of about 1,500 h.p., capable of a speed of 14 knots an hour when loaded to capacity.

The C.P.R. is reported to have purchased the steam tug Colima, which has been utilized in connection with harbor works at Manzanillo, and it is stated that she will be used in connection with the steam tugs Nanoose and Czar, in the car ferry service. She was built at Philadelphia, Pa., in 1904. The hull is of steel, and she is of the following dimensions: length, 95¼ ft.; beam, molded, 22½ ft.; draught, 11¼ ft. She is equipped with fore and aft compound engines, with cylinders 16 and 32 ins. diar. by 24 ins. stroke, supplied with steam at a working pressure of 150 lbs. by boiler 12½ ft. diar. by 10¾ ft. long. The auxiliary machinery includes wrecking pumps, steam capstans, steam steering gear, electric light equipment, etc.

Atlantic and Pacific Ocean Marine.

M. A. Overend, heretofore Travelling Freight Agent, has been appointed Freight Agent for Ontario for the White Star-Dominion Line, with offices at Toronto, in place of the late G. W. Torrance.

Elder Dempster Co.'s s.s. Sobo, which has been under charter to Pickford and Black, for the past three years in the West Indies service, having completed her charter, sailed for England, Aug. 5, returning to her owners' service.

On the arrival of the Allan Line s.s. Victorian at Montreal, Aug. 11, 57 stewards were arrested for refusal to obey orders. The charges were all subsequently dismissed, it being held that the arrests had been illegal. The men all returned to their work.

The Dominion Government has presented a binocular glass to Capt. J. G. Croach of the British steamship Bardistan, in recognition of services rendered to the crew of the schooner H. J. Logan, of Parrsboro, N.S., which was abandoned at sea in Dec. 1910.

R. Jones, shore captain, White Star-Dominion Line, Montreal, for the past 10 years, died there, Aug. 4, aged 65. He had been connected with trans-Atlantic shipping for several years, having commanded vessels of the Dominion Line and Elder Dempster Co.

Referring to recent press reports that the G.T.R. was about to acquire steamships for the establishment of a trans-

Atlantic service, we are officially advised that while such a policy is likely to be decided on in the future, there is no immediate probability of an Atlantic service being acquired, nor until the completion of the G.T. Pacific Ry.

The Cunard Line s.s. Laconia, which was launched at Wallsend-on-Tyne, Eng., Aug. 3, is the first vessel to be operated on the North Atlantic service with a series of anti-rolling tanks, designed to keep vessels on an even keel during varying conditions of weather. The company also has under construction, the s.s. Aquitania, which, it is stated, will be the largest vessel in the world when completed.

The C.P.R. s.s. Empress of China struck on a sunken rock off the Japanese coast, at the end of July, and reports stated that she was in such an exposed position, and the damage so extensive that it was impossible to save her. The passengers and mails were landed safely. She was built at Barrow, Eng., in 1891, her dimensions being: Length, 455.6 ft.; breadth, 51.2 ft.; depth, moulded, 33.1 ft. Salvage operations are said to be in progress, but no information is available at the time of writing.

NOTICE TO SUB-CONTRACTORS.

Contract has been awarded for the construction of the Algoma Central & Hudson Bay Railway, from Hobon, on the Canadian Pacific Railway, to a point on the National Transcontinental Railway, a distance of approximately 101 miles, to Superior Construction Co., Limited. Sub-contractors desiring to secure sections of this work should communicate with the above contractors at Espanola, Ont.

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It is not possible to give here all the advantages to be derived from the use of carbonless ferro-titanium in iron and steel, in preference to the alloy containing carbon. We have prepared a special pamphlet on the subject, however, and it will surely pay you to write for it, if you are at all interested in the subject of titanium steel.

Your name on a postal card asking for pamphlet No. 20-N, will bring you a copy by return mail.

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Pacific Coast Branch: 432-436 Folsom Street, San Francisco.

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STANDARD STEEL PLATFORMS
Used by all Canadian Railways

The Deputy Minister of Trade and Commerce, while in St. John, N.B., in connection with the proposed service between St. John, Halifax and the West Indies, is reported to have stated that he was simply investigating the local conditions and receiving recommendations, and that he did not think any change would be made in the subsidy arrangements. The previous subsidy paid was $135,000, of which Great Britain paid one half, and as Great Britain has withdrawn from the arrangement, the Canadian Government, not feeling justified in making up the difference, would arrange the best possible service for half of the previous subsidy.

The two steamships which the C.P.R. has ordered at Glasgow, Scotland, for its trans-Pacific service, as mentioned in our last issue, will be about 15,000 tons register, 570 ft. long, and have a speed of 18 knots an hour. They will be a little larger than the Atlantic Empresses, and will have accommodation for 200 first class passengers and 6,000 tons of freight. The engines will be of about 16,000 h.p., and it is stated that oil will be used as fuel, but that coal burning equipment will be installed for emergency use. The saloon accommodation will be arranged in suites, and single and double berth cabins, and there will be increased protection of the shelter and promenade decks from wind and spray. They will cost about $2,500,000 each.

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A deputation from New Westminster waited on the Provincial Government recently to urge that a direct steamship line be inaugurated between New Westminster and Victoria, instead of, as at present, shipping freight to Vancouver by rail and thence to Victoria by vessel.

The Purchasing Agents' Guide

To the Manufacturers of and Dealers in Steam and Electric Railway, Marine, Grain Elevator, Express, Telegraph, Telephone and Contractors' Supplies, &c.

Accountants and Auditors
- W. M. Dunlop & C ....Ottawa.

Accumulators
- Tate Accumulator Co. of Can. Ltd.Toronto

Acetylene
- Commercial Acetylene Co. ....Toronto.

Aerated Waters
- E. L. Drewry ....Winnipeg.

Air Brakes and Fittings
- Allis-Chalmers-Bullock, Ltd. ....Montreal.
- Canadian Westinghouse Co. Hamilton, Ont.

Ales
- E. L. Drewry ....Winnipeg.

Alloys
- American Vanadium Co...Pittsburgh, Pa.
- Titanium Alloy Mfg. Co. ..Pittsburgh, Pa.

Angle Bars
- Steel Co. of Canada, Ltd..Hamilton, Ont.

Anti Rail Creepers
- The Holden Co., Ltd. ....Montreal.

Asbestos
- Can. H. W Johns-Manville Co., Ld. Toronto

Automobiles
- Preston Car & Coach Co. ...Preston, Ont.

Axes
- James Smart Mfg. Co, ...Brockville, Ont.

Axles
- Canadian Car & Foundry Co., ..Montreal.
- James Hutton & Co. ....Montreal.
- Nova Scotia S. & C. Co. New Glasgow, N.S.
- Jas. W. Pyke & Co. ....Montreal.
- Steel Co. of Canada, Ltd..Hamilton, Ont.

Babbit Metal
- C. H. Besly Co. ....Chicago, Ill.
- Tallman Brass & Metal Co. Hamilton, Ont.

Batteries, Storage
- T. A. Edison Co., Inc .....Orange, N.J.
- Tate Accumulator Co. of Can. Ltd. Toronto

Battery Boards
- Geo. C. Royce ....West Toronto, Ont.

Beacons
- International Marine Signal Co.....Ottawa.

Bearings, Side
- Canadian Car & Foundry Co.. ..Montreal.
- Chicago Railway Equipment Co..Chicago.

Blankets and Bedding
- The Hudson's Bay Co. ....

Blasting Powder
- Curtis's & Harvey (Canada) Ltd.Montreal.

Boiler Checks
- Nathan Manufacturing Co. ....New York.

Boilers
- Babcock & Wilcox, Ltd. ....Montreal.
- Polson Iron Works, Ltd ....Toronto.
- Robb Engineering Co., Ltd..Amherst, N.S.

Boilers, Portable
- Babcock & Wilcox, Ltd. ....Montreal.
- Polson Iron Works Ltd. ....Toronto.
- Robb Engineering Co., Ltd .Amherst. N.S

Boilers, Stationary and Marine
- Babcock & Wilcox, Ltd. ....Montreal.
- Polson Iron Works, Ltd. ....Toronto.
- Robb Engineering Co., Ltd Amherst, N.S.

Boilers, Steam
- Babcock & Wilcox, Ltd ....Montreal.
- Polson Iron Works, Ltd ....Toronto.
- Robb Engineering Co., Ltd..Amherst, N.S.

Boilers, Water Tube
- Babcock & Wilcox, Ltd. ....Montreal.
- Robb Engineering Co., Ltd..Amherst, N.S.
- Polson Iron Works, Ltd. ....Toronto.

Bolsters
- Canadian Car & Foundry Co.. ..Montreal.
- Whyte Railway Signal Co. ....Toronto.

Bolt Cutters
- London Machine Tool Co., Ltd..Hamilton.

Bolts and Nuts
- Steel Co. of Canada, Ltd..Hamilton, Ont.

Bolts, Track
- Nova Scotia S. & C. Co..New Glasgow, N.S.

Borers, Car Wheel
- John Bertram & Sons Co...Dundas, Ont.

Boring Mills
- London Machine Tool Co., Ltd..Hamilton.

Brake Beams
- Buffalo Brake Beam Co...Brantford, Ont.
- Canadian Car & Foundry Co.....Montreal
- Chicago Railway Equipment Co..Chicago.

Brake Shoes
- Am. Brake Shoe & Fdry. Co.Mahwah. N.J.
- Canada Iron Corporation, Ltd...Montreal.
- The Holden Co., Ltd. ....Montreal.

Brake Shoes, Locomotive Driver
- Am. Brake Shoe & Fdry. Co.Mahwah, N.J.
- Canada Iron Corporation, Ltd...Montreal.
- Dorner Railway Equip. Co....Chicago, Ill.
- Railway Materials Co. ....New York.

Brass
- C. H. Besly Co. ....Chicago, Ill.

Brasses, Car
- T. McAvity & Sons ....St. John, N.B.

Bridge Numbers
- Acton Burrows, Limited ....Toronto.

Bridges
- Canadian Bridge Co. ....Walkerville, Ont.
- Cleveland Bridge & E. Co. Darlington, Eng.
- Corbet Foundry Co. Ltd. Owen Sound, Ont.
- Dominion Bridge Co. ....Montreal.

Bronze
- American Vanadium Co....Pittsburgh, Pa.
- Titanium Alloy Mfg. Co....Pittsburgh, Pa.

Buckets, Coal, Ore and Concrete
- M. Beatty & Sons, Ltd. ....Welland, Ont.
- Brown Hoisting Machinery Co..Cleveland.
- Williams & Wilson, Ltd. ....Montreal.

Buildings, Steel
- Canadian Bridge Co. ....Walkerville, Ont.
- Cleveland Bridge & E. Co. Darlington, Eng.
- Dominion Bridge Co. ....Montreal.

Bumping Posts
- Dominion Equip. & Supply Co..Winnipeg
- The Holden Co., Ltd. ....Montreal.
- McCord & Co., ...Chicago, Ill.

Buoys
- International Marine Signal Co....Ottawa.

Cables, Electric and Feeder
- Canada Wire & Cable Co., Ltd. ..Toronto.
- Chapman & Walker, Ltd.........Toronto.
- E. F. Phillips Electrical Works..Montreal
- The Wire & Cable Co............Montreal

Capstans
- Dake Engine Co. .....Grand Haven, Mich.

Car Furnishings
- Guilford S. Wood ....Chicago, Ill.

Car Loaders, Box
- Mussens, Ltd. ....Montreal.

Car Movers
- F. H. Hopkins & Co. ....Montreal.
- Mussens, Ltd. ....Montreal.

Car Roofing
- Franklin Railway Supply Co.....New York.

Cars
- R. M. Burns & Co. ....Chicago, Ill.
- Crossen Car Mfg. Co. ......Cobourg, Ont.
- Canadian Car & Foundry Co.....Montreal.
- Dorner Railway Equip. Co...Chicago, Ill.
- J. T. Gardner ....Chicago, Ill.
- Hart-Otis Car Co., Ltd. ....Montreal.
- Ottawa Car Co., Ltd. .... Ottawa
- Pay-As-You-Enter Car Co. ....Montreal.
- Preston Car & Coach Co., Ltd...Preston.
- Russel Wheel & Fdry Co.....Detroit, Mich.
- Western Wheeled Scraper Co. Aurora, Ill.

Car Signal Systems
- Ohio Brass Co. ....Mansfield, Ohio.

Cars, Logging
- Russel Wheel & Fdry Co.....Detroit, Mich.

Castings
- American Vanadium Co....Pittsburgh, Pa.
- Canadian Car & Foundry Co ....Montreal.
- Crossen Car Mfg. Co. ......Cobourg, Ont.
- Lumen Bearing Co ....West Toronto, Ont.
- Russel Wheel & Fdry Co.....Detroit, Mich.
- Titanium Alloy Mfg. Co....Pittsburgh, Pa.

Castings, Brass
- Canada Iron Corporation, Ltd...Montreal.
- Canadian Bronze Co. ....Montreal..
- Corbet Fdry Co., Ltd. ..Owen Sound, Ont.
- Kerr Engine Co. ....Walkerville, Ont.
- Lumen Bearing Co. ....West Toronto, Ont.
- Tallman Brass & Metal Co.Hamilton, Ont.

Castings, Car
- Am. Brake Shoe & Fdry. Co.Mahwah, N.J.
- Canada Iron Corporation, Ltd....Montreal.
- Russel Wheel & Fdry Co.....Detroit, Mich.

Castings, Iron
- Allis-Chalmers-Bullock, Ltd. ...Montreal.
- Canada Iron Corporation, Ltd....Montreal.
- Corbet Fdry Co., Ltd. ..Owen Sound, Ont.
- Kerr Engine Co. ....Walkerville, Ont.
- Russel Wheel & Fdry Co.....Detroit, Mich.

Castings, Iron and Steel
- Am. Brake Shoe & Fdry. Co..Mahwah, N.J.

Castings, Malleable
- Galt Malleable Iron Co..........Galt, Ont.
- Pratt & Letchworth Co....Brantford, Ont.
- Taylor & Arnold, ...Montreal.

Castings, Manganese Steel
- Canadian Steel Foundries, Ltd...Montreal.
- Lumen Bearing Co. ....West Toronto, Ont.

Castings, Steel
- American Vanadium Co....Pittsburgh, Pa.
- Canada Iron Corporation, Ltd....Montreal.
- Canadian Steel Foundries, Ltd...Montreal.
- W. Kennedy & Sons, Ltd.. Owen S'd, Ont.
- Pratt & Letchworth Co....Brantford, Ont.
- Titanium Alloy Mfg. Co....Pittsburgh, Pa.

Catenary Materials
- Ohio Brass Co. ....Mansfield, Ohio.

Chains
- B. J. Coghlin & Co. ....Montreal

Circuit Breakers
- Geo. C. Royce ....West Toronto, Ont.

Closets, Car
- Duner Co. ....Chicago, Ill.

Coal
- Nova Scotia S. & C. Co..New Glasgow, N.S.

Compressors, Air
- Allis-Chalmers-Bullock Ltd......Montreal.
- Canadian Rand Co. ....Montreal.
- The Holden Co., Ltd., ...Montreal.

Concrete Mixers and Rock Crushers
- F. H. Hopkins & Co. ....Montreal.
- Mussens, Ltd. ....Montreal.

Contractors' Supplies
- American Hoist & Der. Co. St. Paul, Minn.
- F. H. Hopkins & Co. ....Montreal.
- Rice Lewis & Son ....Toronto.
- Russel Wheel & Fdry Co.....Detroit, Mich.
- Western Wheeled Scraper Co...Aurora, Ill.
- Williams & Wilson, Ltd. ....Montreal.

Conveyors, Coal and Ash
- Babcock & Wilcox, Ltd. ....Montreal.
- Williams & Wilson, Ltd ....Montreal.

Cooper
- C. H. Besley Co. ....Chicago, Ill.

Copying Presses
- James Smart Mfg. Co......Brockville, Ont.

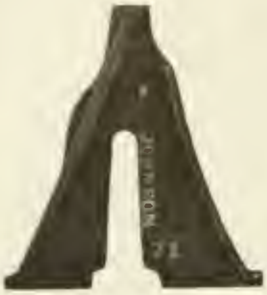
Couplers, Car and Locomotive
- Canadian Car & Foundry Co.....Montreal
- Canadian Steel Foundries, Ltd...Montreal
- McConway & Torley Co....Pittsburgh, Pa.
- Ohio Brass Co. ....Mansfield, Ohio.
- Taylor & Arnold ....Montreal.

Couplers, Steam
- Consolidated Car Heating Co. Albany, N.Y

Cranes
- Brown Hoisting Machinery Co..Cleveland.
- Northern Engineering Wks..Detroit, Mich.
- Williams & Wilson, Ltd. ....Montreal.

Cranes, Electric
- Babcock & Wilcox ....Montreal.
- Dominion Bridge Co. ....Montreal.
- Mussens, Ltd ....Montreal.
- Northern Engineering Wks.. Detroit, Mich.

Cranes, Locomotive
- American Hoist & Der. Co..St. Paul, Minn.



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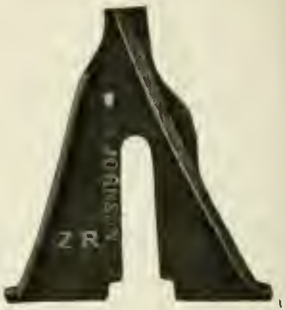

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The Holden Co., Ltd., ...Montreal.
Preston Car & Coach Co. ...Preston, Ont.
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Acton Burrows, Limited ....Toronto.
Cylinders
American Vanadium Co....Pittsburgh, Pa.
Titanium Alloy Mfg. Co....Pittsburgh, Pa.
Derricks
American Hoist & Der. Co..St. Paul, Minn.
M. Beatty & Sons, Ltd. ....Welland, Ont.
Mussens, Ltd. ....Montreal.
Derricks, Car
American Hoist & Der. Co..St. Paul, Minn.
Diaphragms, Vestibule
Guilford S. Wood ....Chicago, Ill.
Dies
Butterfield & Co. .... Rock Island, Que.
A. B. Jardine & Co. ....Hespeler, Ont.
Ditchers
American Hoist & Der. Co..St. Paul, Minn.
M. Beatty & Sons, Ltd. ....Welland, Ont.
Diving Outfits
John Date ....Montreal.
Mussens, Ltd. ....Montreal.
Doors, Steel Rolling
Mussens, Ltd. ....Montreal.
Door Signs
Acton Burrows, Limited ....Toronto.
Draft Gear
The Holden Co., Ltd., ...Montreal.
McCord & Co., ...Chicago, Ill.
Standard Coupler Co. .....New York City
T. H. Symington & Co. ....Baltimore, Md.
Draughtsmen's Supplies
John A. Hart & Co. ....Winnipeg.
Dredges
M. Beatty & Sons, Ltd. ....Welland, Ont.
Polson Iron Works, Ltd. ....Toronto.
Drills, Air
Canadian Rand Co. ....Montreal.
Drills, Radial
London Machine Tool Co., Ltd.Hamilton.
Dry Goods
The Hudson's Bay Co. ....
Dump Cars, Contractors'
Dominion Equip. & Supply Co..Winnipeg.
F. H. Hopkins & Co. ....Montreal.
Western Wheeled Scraper Co..Aurora, Ill.
Dump Cars, Hand
Meaford Wheelbarrow Co. ..Meaford, Ont.
Dynamos
Northern Electric & Mfg. Co.....Montreal.
Dynamo and Electric Castings
Am. Brake Shoe & Fdry. Co..Mahwah, N.J.
Economizers
Babcock & Wilcox ....Montreal.
Electric Apparatus
Allis-Chalmers-Bullock Ltd......Montreal.
Chapman & Walker, Ltd. ....Toronto.
Northern Electric & Mfg. Co.....Montreal.
Electric Car Route Signs
Acton Burrows, Limited ....Toronto.
Preston Car & Coach Co., Ltd....Preston.
Electric Light Plant
Allis-Chalmers-Bullock, Ltd. ....Montreal.
Elevators, Grain
John S. Metcalf Co. ....Montreal.
Enameled Iron Signs
Acton Burrows, Limited ....Toronto.
Engines, Automatic
Polson Iron Works, Ltd. ....Toronto.
Robb Engineering Co., Ltd., Amherst, N.S.
Russel Wheel & Fdry Co.....Detroit, Mich.
Engines, Corliss
Allis-Chalmers-Bullock, Ltd. ....Montreal.
Robb Engineering Co., Ltd., Amherst, N.S.
Engines, Gas
Allis-Chalmers-Bullock, Ltd. ....Montreal.
Williams & Wilson, Ltd. ....Montreal.
Engines, Gasolene
Canadian Fairbanks Co., Ltd....Montreal.
Ontario Wind Engine & Pump Co. Toronto
Engines, Hoisting
Allis-Chalmers-Bullock, Ltd. ....Montreal.
American Hoist & Der. Co..St. Paul, Minn.
M. Beatty & Sons ....Welland, Ont.
Dominion Equip. & Supply Co...Winnipeg.
Polson Iron Works, Ltd. ....Toronto.
Russel Wheel & Fdry. Co. .Detroit, Mich.
Williams & Wilson, Ltd. ....Montreal.
Engines. Stationary and Marine
Polson Iron Works, Ltd. ....Toronto.
Robb Engineering Co., Ltd., Amherst, N.S.
Engines, Stationary, Appliances
Nathan Manufacturing Co. ....New York.
Engines, Steam
Allis-Chalmers-Bullock, Ltd. ....Montreal.
Engineers, Consulting
Alfred Lovell, ...Philadelphia, Pa.
Explosives
Curtis's & Harvey (Canada) Ltd..Montreal
Express Office Signs
Acton Burrows, Limited ....Toronto.
Ferro-Vanadium
American Vanadium Co. ..Pittsburgh, Pa.
Files
Nicholson File Co. ......Port Hope, Ont.
Fire Extinguishers
Miller Chemical Engine Co...Chicago, Ill.
Flags
The Hudson's Bay Co. ....

Flour
The Hudson's Bay Co. ....
Forgings
American Vanadium Co. ..Pittsburgh, Pa.
Canadian Car & Foundry Co.....Montreal
Crossen Car Mfg. Co........Cobourg, Ont.
Nova Scotia S. & C. Co..New Glasgow, N.S.
Steel Co., of Canada, Ltd., Hamilton, Ont.
Titanium Alloy Mfg. Co....Pittsburgh, Pa.
Foundry Appliances
C. H. Besly Co. ....Chicago, Ill.
Ontario Wind Engine & Pump Co. Toronto
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Johnson Wrecking Frog Co..Cleveland, O.
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Continental Iron Works....Brooklyn, N.Y.
Furnaces, Oil
Railway Materials Co. ....New York.
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Curtis's & Harvey (Canada) Ltd..Montreal
Fuse Detonators
Curtis's & Harvey (Canada) Ltd..Montreal
Fuses, Electric
Curtis's & Harvey (Canada) Ltd..Montreal
Gaskets
The Holden Co., Ltd., ...Montreal.
McCord & Co. ....Chicago, Ill.
Gates, Crossing
The N. L. Piper Ry Supply Co....Toronto.
Whyte Railway Signal Co. ......Toronto.
Gauge Cocks
Nathan Manufacturing Co.....New York.
Ohio Brass Co. ....Mansfield, Ohio.
Gauges, Locomotive
Taylor & Arnold ....Montreal.
Gauges, Water
Detroit Lubricator Co. ....Detroit, Mich.
Nathan Manufacturing Co.....New York.
Ohio Brass Co. ....Mansfield, Ohio.
Gears
American Vanadium Co. ..Pittsburgh, Pa.
Titanium Alloy Mfg. Co....Pittsburgh, Pa.
Gears, Machine Cut
Corbet Fdry Co., Ltd. ..Owen Sound, Ont.
Generators, Electric
Dorner Railway Equip. Co....Chicago, Ill.
Northern Electric & Mfg. Co. ..Montreal.
Graders and Ditchers
Western Wheeled Scraper Co. Aurora, Ill.
Grates, Shaking
Babcock & Wilcox ....Montreal.
Polson Iron Works, Ltd. ....Toronto.
Grinders, Disc, for Wood and Metal
C. H. Besly Co. ....Chicago, Ill.
Groceries
The Hudson's Bay Co. ....
Hammers, Cast Steel
Am. Brake Shoe & Fdry Co.Mahwah, N.J.
James Smart Mfg. Co. ....Brockville, Ont.
Handcars
Canadian Fairbanks Co., Ltd....Montreal.
Crossen Car Mfg. Co. ......Cobourg, Ont.
Dominion Equip. & Supply Co..Winnipeg.
F. H. Hopkins & Co. ....Montreal.
Mussens, Ltd. ....Montreal.
Rice Lewis & Son ....Toronto.
Whyte Railway Signal Co. ......Toronto.
Hardware
The Hudson's Bay Co. ....
Rice Lewis & Son ....Toronto.
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Commercial Acetylene Co. ......Toronto.
The N. L. Piper Ry Supply Co....Toronto.
Pyle National Elec. Headlight Co. Chicago..
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Robb Engineering Co., Ltd..Amherst, N.S.
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Canadian Gold Car H'g & L'g Co.Montreal.
Consolidated Car H'ting Co...Albany, N.Y.
Safety Car Heating & L'ting Co.New York.
United States Light & Heat Co..New York.
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Dake Engine Co. .....Grand Haven, Mich.
Hoists, Electric
American Hoist & Der. Co. St. Paul, Minn.
Hoists, Pneumatic
Taylor & Arnold ....Montreal.
Hooks
Steel Co. of Canada, Ltd..Hamilton, Ont.
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Duner Co ....Chicago, Ill.
Hose, Air Brake and Steam
Guilford S. Wood ....Chicago, Ill.
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Kerr Engine Co. ....Walkerville, Ont.
Hydraulic Equipment
R. D. Wood & Co.......Philadelphia, Pa.
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Nathan Manufacturing Co.....New York.
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Alfred Lovell ....Philadephia, Pa.
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Ohio Brass Co. ....Mansfield, Ohio.
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Canadian Ry. Accident Ins. Co.....Ottawa.
Imp Guarantee & Acc. Ins. Co....Toronto.
London Guar. & Accident Co. Ltd Toronto.

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Saxby & Farmer, Ltd. ....Montreal.
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Canadian Fairbanks Co., Ltd....Montreal.
Canadian Steel Foundries, Ltd...Montreal.
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Northern Electric & Mfg. Co.....Montreal.
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Commercial Acetylene Co., ... Toronto.
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Canadian Westinghouse Co..Hamilton, Ont.
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The Hudson's Bay Co. ....
The Hiram L. Piper Co. ....Montreal.
The N. L. Piper Ry Supply Co....Toronto.
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The N. L. Piper Ry Supply Co....Toronto.
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Blau-Gas Co. of Canada, Ltd....Montreal.
International Marine Signal Co.....Ottawa.
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Safety Car Htg. & Ltg. Co....New York.
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Blau-Gas Co. of Canada, Ltd....Montreal.
Canadian Gold Car H'g & L'g Co.Montreal.
Commercial Acetylene Co. ....Toronto.
Safety Car Heating & Ltg. Co..New York.
United States Light & Heat Co..New York.
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Commercial Acetylene Co. ....Toronto.
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Walter McLeod & Co. ......Cincinnati, O.
Mussens, Ltd. ....Montreal.
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Canadian Locomotive Co....Kingston, Ont.
International Marine Signal Co.....Ottawa.
Montreal Locomotive Works .....Montreal.
Locomotives, Contractors'
Dominion Equip. & Supply Co..Winnipeg.
Locomotives, Electric
Baldwin Locomotive Works...Philadelphia.
Montreal Locomotive Works .....Montreal.
Locomotives, Logging
Baldwin Locomotive Works...Philadelphia.
Canadian Locomotive Co....Kingston, Ont.
Locomotive, Rack
Baldwin Locomotive Works...Philadelphia.
Canadian Locomotive Co....Kingston, Ont.
Montreal Locomotive Works .....Montreal.
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Baldwin Locomotive Works...Philadelphia.
Canadian Fairbanks Co. Ltd....Montreal.
Canadian Locomotive Co....Kingston, Ont.
J. T. Gardner ....Chicago, Ill.
Montreal Locomotive Works .....Montreal.
Vulcan Iron Works ......Wilkesbarre, Pa.
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M Beatty & Sons ....Welland, Ont.
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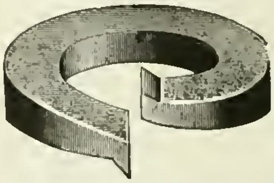

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The Hiram L. Piper Co. ....Montreal.
The N. L. Piper Ry. Supply Co....Toronto.
Saxby & Farmer, Limited ......Montreal.
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Whyte Railway Signal Co. ......Toronto.
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International Marine Signal Co.....Ottawa.
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Chicago Railway Equipment Co..Chicago.
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James Smart Mfg. Co. ....Brockville, Ont.
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McCord & Co. ....Chicago, Ill.
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F. H. Hopkins & Co. ....Montreal.
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Corbet Fdry. Co., Ltd. ..Owen Sound, Ont.
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Steel Co. of Canada Ltd....Hamilton, Ont.
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Taylor & Arnold ....Montreal.
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Flannery Bolt Co. ....Pittsburgh, Pa.
Staybolts, Locomotive
Flannery Bolt Co. ....Pittsburgh, Pa.
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Mussens, Limited ....Montreal.
Steamship Signs
Acton Burrows, Limited ....Toronto.
Steam Traps
Consolidated Car Heating Co..Albany,N.Y.
Steel
Hermann Boker & Co. ....Montreal.
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Steel, Fire Box
Taylor & Arnold ....Montreal.
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Canadian Steel Foundries, Ltd...Montreal.
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Steel Plates
Jas. W. Pyke & Co. ....Montreal.
Steel, Tool
Canadian Steel Foundries, Ltd...Montreal.
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Babcock & Wilcox ....Montreal.
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Tate Accumulator Co. of Can. Ltd. Toronto
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Jas. Smart Mfg. Co. ......Brockville, Ont.
Superheaters
Babcock & Wilcox ....Montreal.
Switchboards
Geo. C. Royce ....West Toronto, Ont.
Switches
Can. Ramapo Iron Ws. Niagara Falls, Ont.
Canadian Steel Foundries, Ltd...Montreal.
Switches, Electric
Geo. C. Royce ....West Toronto, Ont.
Switch Stands
Can Ramapo Iron Ws. Niagara Falls, Ont.
Switch Targets
Acton Burrows, Limited ....Toronto.
Tacks
Steel Co. of Canada, Ltd....Hamilton, Ont.
Tanks and Tank Fixtures
Ontario Wind Engine & Pump Co. Toronto
Polson Iron Works, Ltd. ....Toronto.
Tanks, Oil
S. F. Bowser & Co., Limited ....Toronto.
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October, 1911.

THE BULLDOZER IN THE CAR REPAIR SHOP.

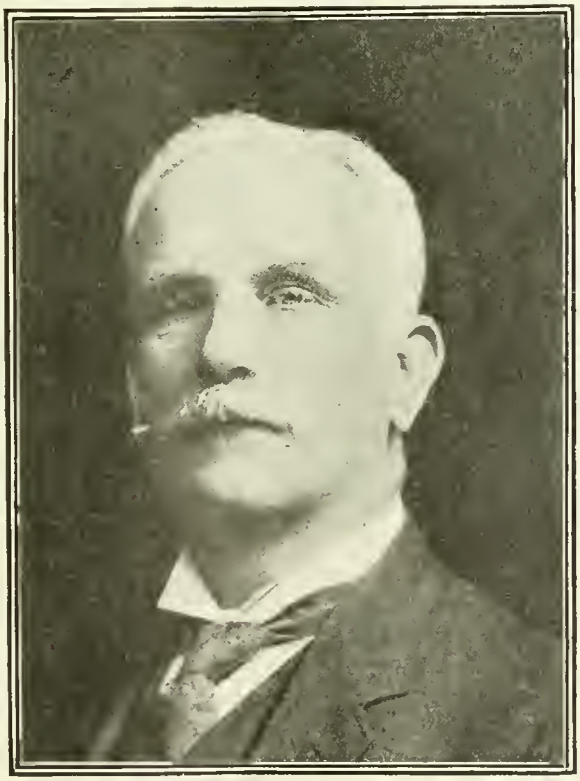
By Frederick H. Moody, B.A.Sc.

The bulldozer occupies a practically indispensable position in the railway shop, particularly in the car department, where so much bar stock must be bent into various shapes to form the car members. A few of these are the car coupler pockets, car step, brake stand, truck frame and many other parts that are of a uniform shape, or which on cars of similar types, are practically the same in size and shape. Were it not for the question of multiple production, and that all parts for the same purpose are alike, it would, of course, be more profitable to produce the shapes by the standard old-time methods on the hand forge, or possibly under the steam hammer. But where similar parts are to be produced in quantities, even though those quantities be comparatively small, it is more economical to make dies for the purpose.

Another factor must be considered in this matter; that is the matter of how many different kinds of parts are to be produced, for, if the number of different kinds were not sufficiently great, it would naturally be an unprofitable proposition to instal a bulldozer even though several entirely different pieces had to be produced in more or less large quantities. This is a question which local conditions alone can determine, and a comprehensive study of the situation must be made to decide if such an installation would be warranted.

In a repair shop, the chances of a bulldozer being used are much less than in the main construction works of a railway. In the larger repair centres, however, it has been found an economical proposition to make an installation. Such is the case with the Michigan Central Rd. in its St. Thomas shops. There all the repairs on the Canadian division of the line are handled. These shops, in charge of W. H. Flynn, Master Mechanic, are quite extensive and are equipped to handle all kinds of repairs to rolling stock. The Canada Southern division of the M.C.R. passes through a fairly productive territory, producing considerable freight and passenger traffic, but the major portion is through traffic, the through-freight from the western states to the main lines of the New York Central and Hudson River Rd. being particularly heavy. Added to this, there is a heavy through-passenger service between Chicago and New York. These heavy conditions have made necessary extensive and well-equipped shops to handle the repairs incidental to a great volume of traffic, especially as it is necessary for all the repairs of the Canadian division to be made in Canada. As a typical repair shop where good examples of work might be obtained, these shops were considered to be first class, so were selected for obtaining the necessary data on the use of a bulldozer in a general railway car repair shop.

The car shops at St. Thomas, under Neil Marple, General Foreman, are well equipped from a repair-shop standpoint, and many ingenious methods have been developed for producing work where standard equipment was lacking. Also, many devices for use with standard equipment have been produced. Prominent among these are the dies for use with the bulldozer in the blacksmith shop, of which Henry Batiste is foreman. The dies to be described in this articles are for the most part quite ingeniously designed, and, in common with most of the dies used, contain features quite different from those found in similar shops under like conditions. These features are for the most part, improvements on existing methods, and contain points which will undoubtedly appeal to the reader, especially if he is interested in car shop production.



A. H. N. Bruce, M. Can. Soc. C.E.
Chief Engineer Quebec and Saguenay Railway.

Fig. 1. shows the bulldozer used in these shops. In this view, it is shown set up with the necessary dies for producing small car-coupler pockets. The female part is attached to the ram, the arms of the coupler pocket bar stock being bent around the male section which is stationarily attached to the platen of the machine. The action of the bulldozer being familiar to all, it is unnecessary to describe its operation.

Four good examples of bulldozer work are illustrated in fig. 2, and as they are all produced in an interesting manner, the dies and successive steps of production will be described in some detail. A is the standard size of rounded-end car-coupler pockets as made for freight car use; B, a freight brake-rod stand, the lower arms of which are bent at a right angle and attached under the end of the car, the brake rod fitting down into the hole shown in the rounded section; and C and D are freight car steps, the former being straight, while the latter is offset to accommodate the different types of construction followed by builders in standard freight cars.

The production of the part A of fig. 2, will be described first. This piece needs seven strokes of the machine, the bulldozer requiring two different settings for the purpose. These operations are: bending inward the two big ends of the bar stock; trimming these lugs to size; punching the two end bolt holes adjacent to the lugs; and finally bending to a U-shape. All operations but the last are performed in one setting, with a final setting for the U-bend.

The set of dies illustrated in figs. 3 and 4, are set up in one battery on the bulldozer. The first operation, which is performed on the two ends, is that of bending the lugs to form the inwardly projecting lugs E, fig.2. The bar stock of the required section, is cut off a little longer than the finished length of the coupler to allow for trimming in the second operation. The stock, with the end heated to a working heat, is secured in the clamp A, fig. 3; this clamp is bolted to the platen of the bulldozer. The vise feature of the clamp consists of concentric cam sleeve B, which, when the attached lever is depressed, mounts on the corresponding stationary projections, clamping the stock. The stock is allowed to project a distance slightly in excess of the lug depth beyond the face of the inserted piece C, around which the lug is bent. The part D, with the projecting lug E, is attached to the ram of the bulldozer. This part D is so arranged that the nearer face of the lug F, passes down alongside the inserted piece, C, leaving an intervening space equal to the thickness of the stock. This operation bends the lug, but leaves the projecting face rough requiring trimming.

As before mentioned, the dies in fig. 4, are attached alongside those in fig. 3, making a rapid sequence of operations possible, so that the three operations may be completed in one heat. The second one of the three, is the trimming of the inwardly projecting lug. The end, still hot, is placed on top of the stationary part A, as indicated, and the lug brought back against the inserted shear knife B. The moving part C with a corresponding inserted shear blade D, on moving forward in its stroke, trims the lug, the blade D being so placed as to just pass under the blade B. This

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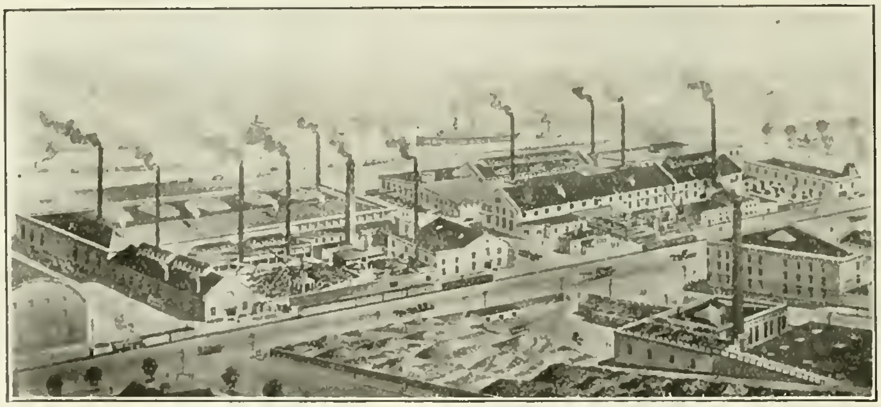

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shearing operation has a tendency to lift the front end of the stationary part A on account of the long overhang of the latter, so to avoid this, the latter is bolted down to the bulldozer platen by bolts through the bolt holes shown.

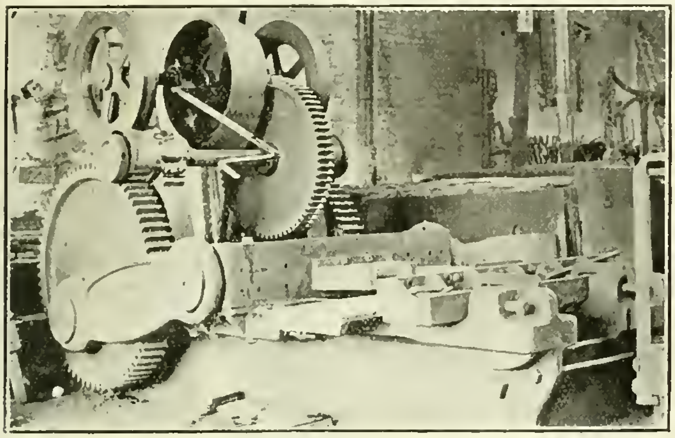
Fig. 1—Typical Bulldozer Installation with Dies attached.

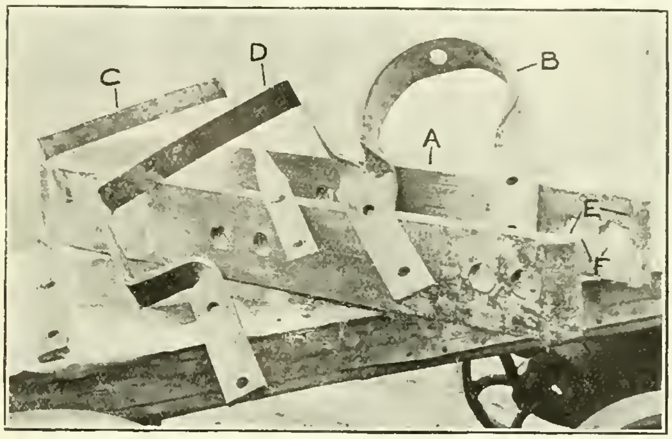

Fig. 2—Four Good Examples of Bulldozer Work.

Following this end trimming operation, the coupler has its cross bolt holes punched, the dies for the purpose being shown in fig. 4, behind those just described. Two punches E are attached, as indicated, to a head F bolted to the bulldozer ram. Corresponding dies in a die-plate G on the bolster H are secured to the stationary plate of the machine. This die plate is provided with plenty of stock around the punch holes so that there will be no tendency for that part to break under the spreading strain. Reference to fig. 2 will show that the holes to be punched, F, are close up to the inwardly projecting lug. This precludes the possibility of using the edge of the lug as a guide against the edge of the die, for if such a course were followed but little metal would be left along one side of the nearer die hole—not more than about ½ inch—in this case, which is insufficient. Some other means of locating these holes is thus required. A guide piece I, with a handle J has two holes located in it the same distance from its outer end as the holes of the coupler pocket are from the lugs. This piece then can be used as a guide, placing it in front of the stock to be punched, holding against the shoulder formed by the lug. The stock and guide can then be located in their proper position by the operator in front of the punch. The loops K serve as strippers for clearing the punches for the work after the operation. This operation completes the work on the one end, the three steps having been made successively in one heat. The other end is then heated and the three operations repeated on that end.

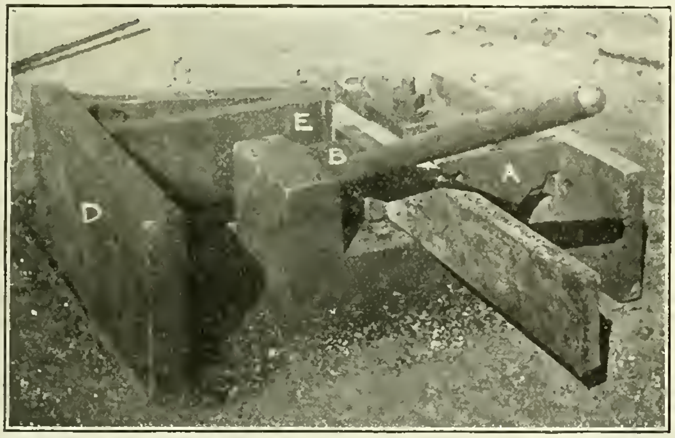

Fig. 3—First Operation of Bending the Lugs on a Car-coupler Pocket.

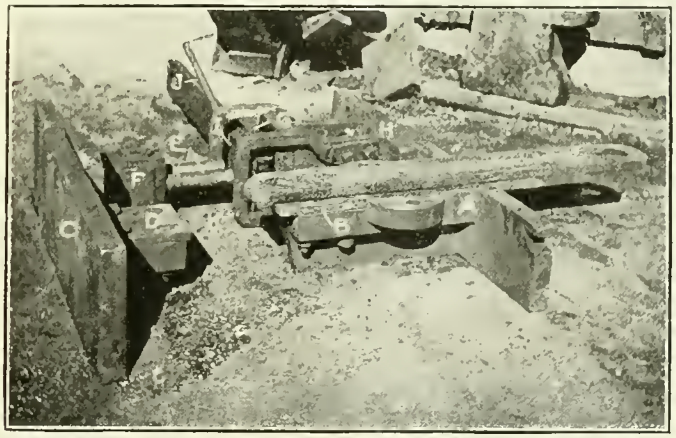

Fig. 4—Second and Third Operations of Trimming and Punching the Ends of the Car-coupler Pocket.

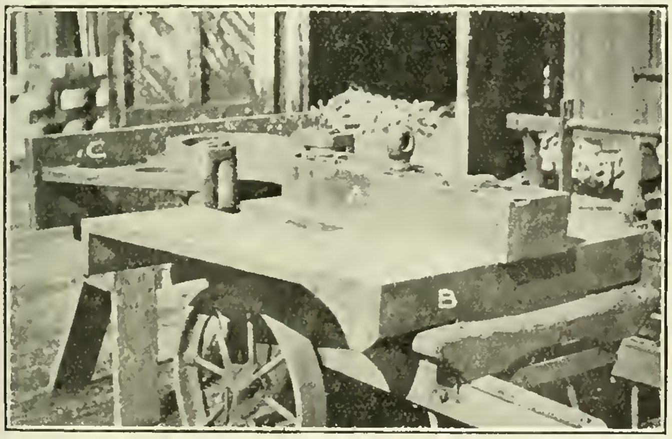

Fig. 5.—Final Operation of Bending Car-coupler Pocket to a U-shape.

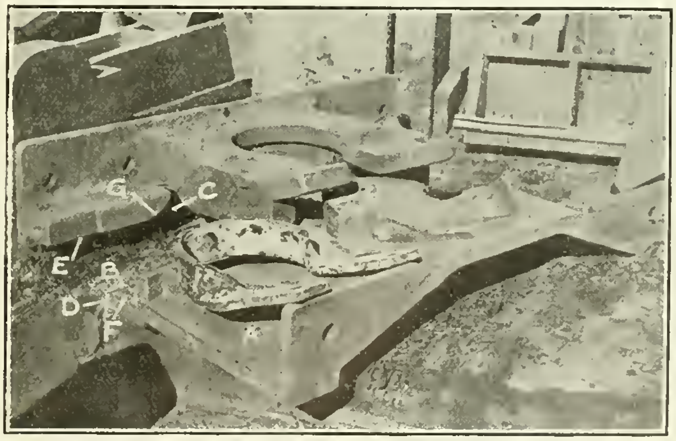

Fig. 6.—Bulldozer Dies for Brake-rod Stands.

The final operation of bending the coupler pocket to the U-shape is performed by the dies shown in fig. 5. A small hole is punched in the straight stock, midway between the lugged ends. The central portion that is to be bent, is then heated to a working heat, and placed in the bulldozer against the end of the part A of the die, a tit on this outer end fitting into a hole in the coupler strip, thereby locating centrally. This part A, has its base B, bolted sta-

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tionary to the platen of the bulldozer. The part C bolted to the bulldozer ram, has projecting roller arms D, which force the ends around the die A, the rollers being so located as to just pass over the stock as it forces up against the body of the die. This operation completes the coupler pocket, only seven strokes of the bulldozer and two die settings being necessary for its completion.

The brake rod stand shown resting on its forming punch in fig. 6, is another interesting bulldozer operation, requiring but two strokes and one setting to complete. The flat stock, cut to the required length, has the central and two end holes punched previous to the bulldozer operations. The heated stock is then located centrally by its centre hole on a dowel in the front face of the stationary member A. The strip rests on its edge on the bulldozer platen. The height of the edge is so designed that the amount the stock projects above it is equal to the stock thickness. The lower portion of the moveable jaw is cut out as at C, so that when the stock stands on its edge against the face D of the stationary die, the edge E of the moveable one folds the ends over this on to the horizontal ledge F, the curved portion G of the moveable die forming the bent section. This leaves the central portion in its original position with the ends twisted through little more than a right angle. The twisted stock is then turned upside down and placed in front of the curved face H. A corresponding form on the moveable die closing over the stock in this position bends the stock to the shape shown, only two strokes of the ram being required, changing from the lower to the upper position between strokes. To add to the complexity of the piece, the front face of the curved portion H is inclined slightly to the vertical to form the horizontal face when in position on the car.

The bending dies in figs. 7 and 8 are similar, with the exception that the former is for a plain car step, while the latter is for an offset one; samples of each are shown at A alongside each die. The same lettering applies to both. The previously punched and heated stock is placed in position in the space between blocks B and C and clamped there by the eccentric pin D bearing on the back of B. These blocks, B and C, may be changed at will for varying drops of car steps; the one pair of blocks will accommodate three different drops by changing their relative locations. Two arms E, actuated by roller projections F on plate G, which is bolted to the bulldozer ram, force the stock around the shape on the body H, which is bolted to the platen. (In the case of the offset step, the swinging arm is also shaped to give the offset). Near the rear of the stationary part, there are two U-shaped pieces I, pivoted at the lower part of the U on the projecting pins J in a slot in the body H. The outer end of the swinging arm has a wedge shaped rise at K, so that as the arms swing around into their final position when the lower point L of the rise strikes the underside of the pieces I, the latter swing upward about their centres. This raises the lower arm of the U, and as this gives an outward as well as an upward motion, the lower edge of the stock is forced out. At the same time, the face M of the swinging arm forces inward the upper part of the stock, the combined action twisting the stock through a complete right angle into the shape indicated. To keep the arm from lifting, the guiding piece N is provided, keeping the arms down while the lifting action due to the twisting, is operative.

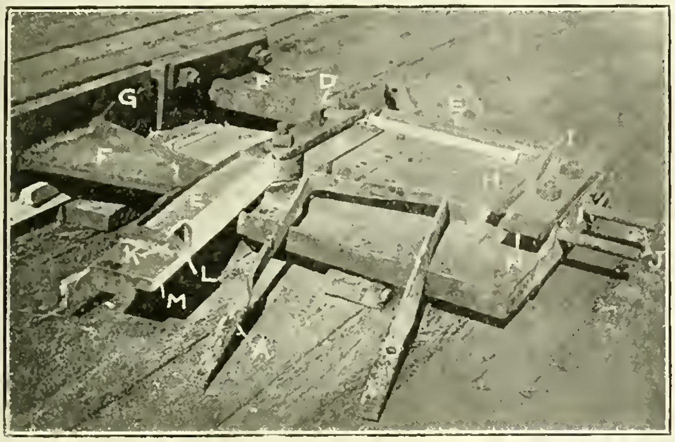

Fig. 7—Bulldozer Dies for Plain Car Step.

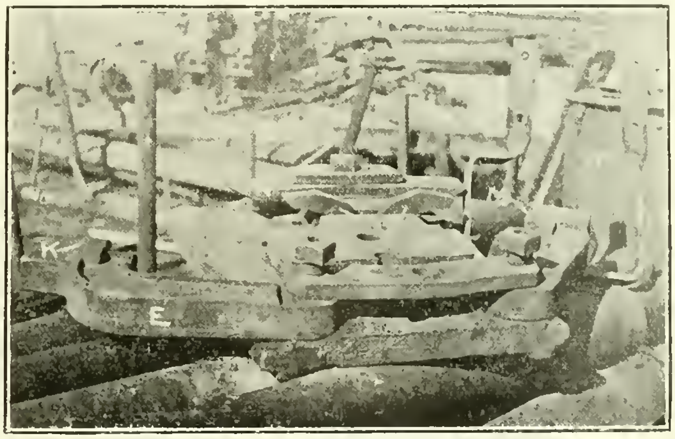

Fig. 8—Bulldozer Dies for Offset Car Step.

Method of Making Driving Wheel Brasses at the Pere Marquette St. Thomas Shops.

The customary method of making new thrust brasses for locomotive driving-wheels, is, as all railway mechanical men know, to machine a thin brass disc of the required dimensions, saw in two, rivet in position on the drivers, and finally finish off the thrust face in the lathe when the tires are being turned down. This method, while almost universally used, is very expensive and at the same time has inherent disadvantages which, in such a construction, cannot be overcome.

The method adopted by the Pere Marquette in its shops at St. Thomas, Ont.—a method used in other shops on the same road—is to cast the bearing into place in a manner similar to that of casting bearings. Fig. 1 shows the method used for that purpose. The bearing face of the driving wheel is dovetailed by taking a rough hogging cut, undercutting at the outer edge. A depth of ¾ inch is claimed to be all that is necessary, but greater depths are being regularly cast on wheels originally made for the type of brass mentioned earlier. The wheel, when thus prepared, is turned on end and placed flat on the rails over one of the locomotive pits in the erecting shop floor. The rails being approximately perfectly level, automatically level up the wheels for the pouring.

The lower part of the bearing is protected from the hot metal by a piece of asbestos paper A tied around the axle as indicated. To accommodate the different sizes of brasses to be cast, retaining rings of various diameters within the limits of the commoner sizes of brasses, have been made. These rings, indicated at B, are similar to piston rings, only

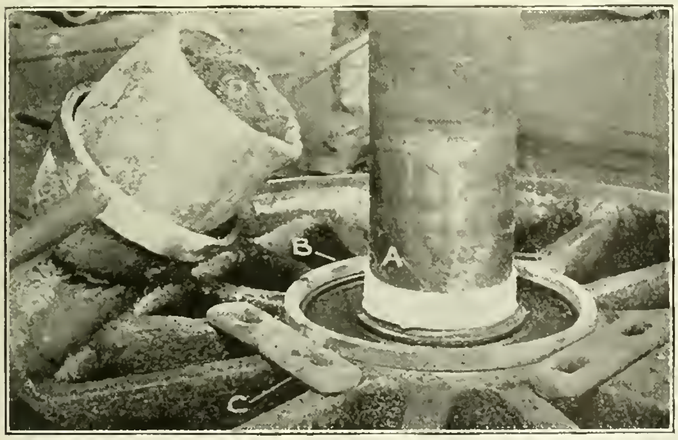

Fig. 1. Driving Wheels on End, ready for pouring.

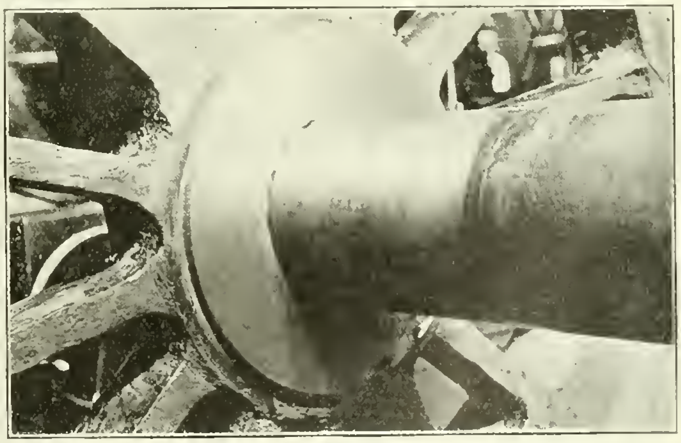

Fig 2. Finished Brasses on Driving Wheels.

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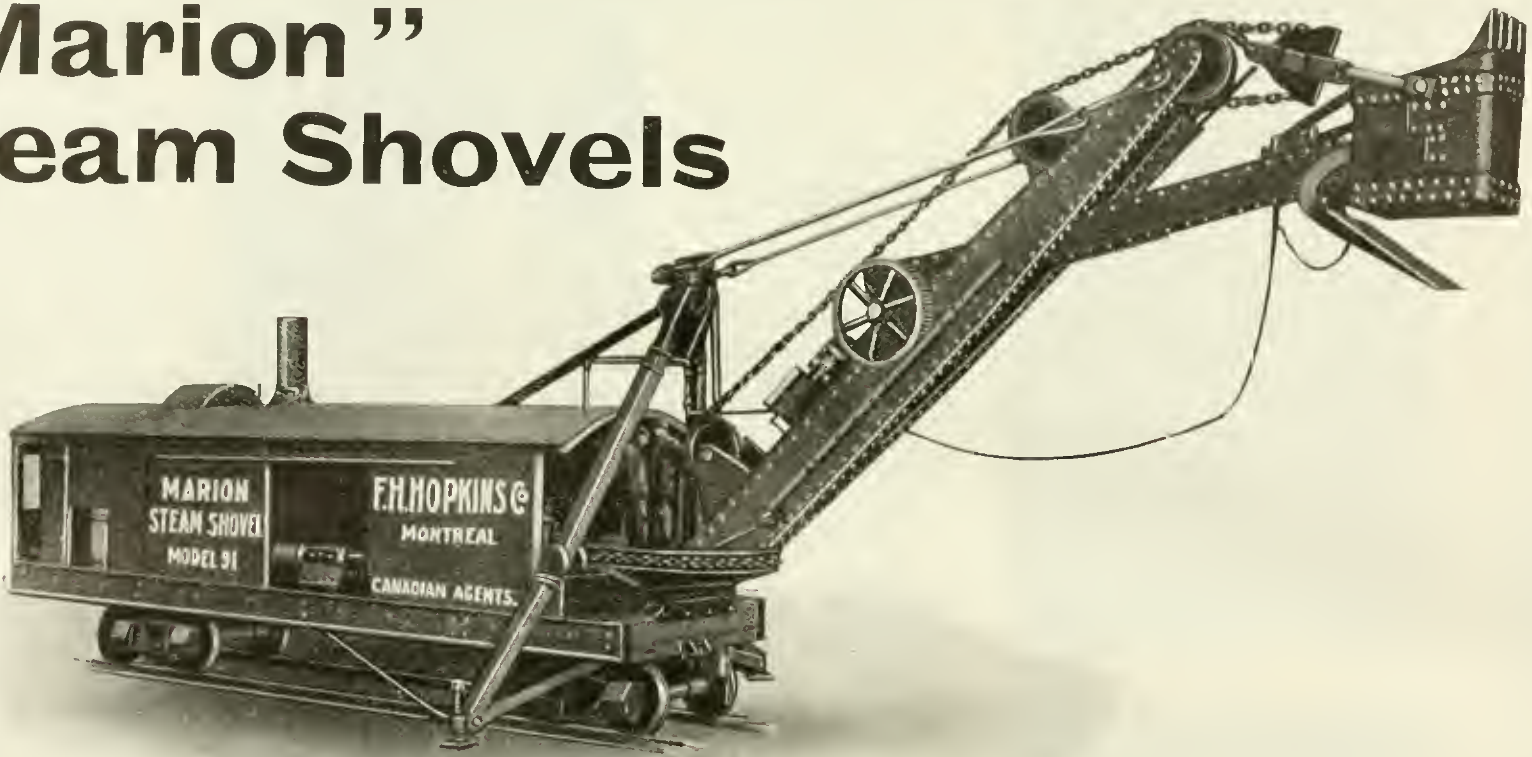
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in order that they may be easily placed in position, they are made in three sections, the different sections being held up to place by weights C. With these preparations, the wheel is ready for pouring.

Bearing brass is melted in a crucible in an open-top oil furnace. This part of the process is slow, requiring several hours to melt a crucible full; but several brasses may be cast in one heat. When melted, the crucible is carried to the wheel and the brass poured as at D. The molten brass penetrates to every crack and crevice if sufficiently fluid, these fins and spines forming retaining projections to hold the brass in place. The main grip is at the keyway; the key holding wheel to axle seldom projects all the way through, so that a projecting spur of brass acts as a dowel to hold the bearing in position.

The subsequent cooling of the brass sets up strains in the metal, which before normal temperature has been reached, are sufficient to radially break the disc of brass in one place. This, however, has a beneficial effect, as the broken brass acts the same as a spring piston ring, the brass bearing out on the dovetailed edge, securing the brass tightly in place. This crack, which for a wheel of the size shown will be from 1-16 to ⅛ inch in width, is filled with molten babbit, to fill up flush with the rest of the surface.

Following the filling of the break with babbit, the bearing surface is finished off to the required size in the lathe when the wheel tread is being turned up. The finished wheel with its brass is shown in fig. 2. The simplicity and economy of the method must be apparent to all railway mechanical men.

◆

Ashpit Mechanism, at the C.P.R. West Toronto Roundhouse.

An ashpit for accommodating the ashes removed from a locomotive after it has been taken off a run, can be made a very simple arrangement, all that is necessary being a pit into which the ashes may be scooped from the locomotive; the particular difficulty lies in the manner of disposal of all these accumulated ashes. Nearly all roads have different arrangements, and even the same road at its various roundhouses has probably a different arrangement at each, the designs being generally devised by the local authorities. In the majority of cases very satisfactory arrangements are worked out.

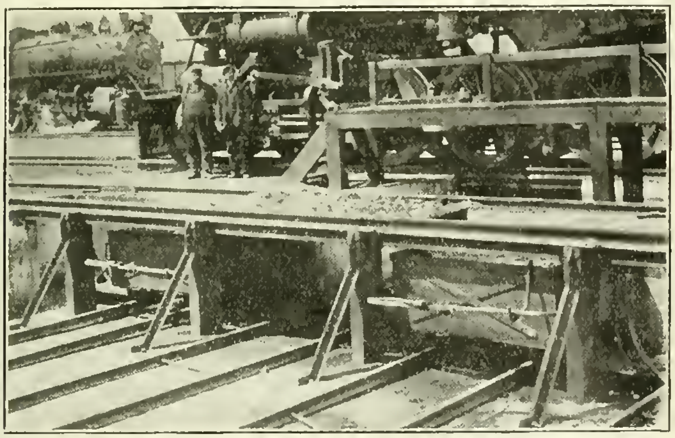


Fig. 2.—Discharging Ashes to Ash Cars.

The arrangement in use at the C.P.R. West Toronto roundhouse is a particularly simple and good design for the rapid handling of ashes where a too expensive equipment, such as deeply submerged cinder-car tracks beside the ash emptying track, is not desired. This C.P.R. mechanism is shown in the accompanying figs. 1 and 2. Two ash-removing tracks are provided as indicated in fig. 1, the locomotive in the photograph in the operation of removing ashes being on the second track over. In the immediate foreground there are three depressed narrow-gauge tracks, in a pit, the central one running to the further ash-removing track. Under the nearer ash-removing track, this central cross-track space is covered, as a protection against clogging up with ashes.

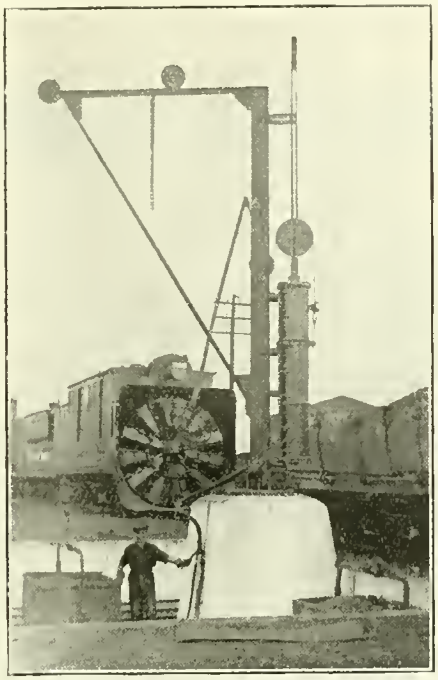


Fig. 2.—Radial Air Hoist for Raising Loaded Ash Cars.

On these narrow-gauge cross tracks are three little ash trucks of the form shown, which, when filled, are run out from under the locomotive, where they may be picked up by the radial crane shown in fig. 2, and swung up over the cinder car to the right, in the picture, and tripped. Like most improvised mechanisms around railway repair shops and roundhouses, the radial crane is operated by compressed air, acting through a cylinder vertically attached to the frame of the crane as indicated. A plunger moving vertically in the guides provided, draws the steel rope over the several sheaves, raising the bucket to a position where it may be swung around and dumped.

The pit is constructed of concrete throughout, all the locomotive rails being supported on the concrete walls, with the exception of the inner rail which is supported on I-beam sections, the rail being braced by an inverted rail to which it is rivetted.

There are four main tracks leading to the roundhouse, so that in order to provide each track with means for removing ashes, the arrangement shown is duplicated on the far side.

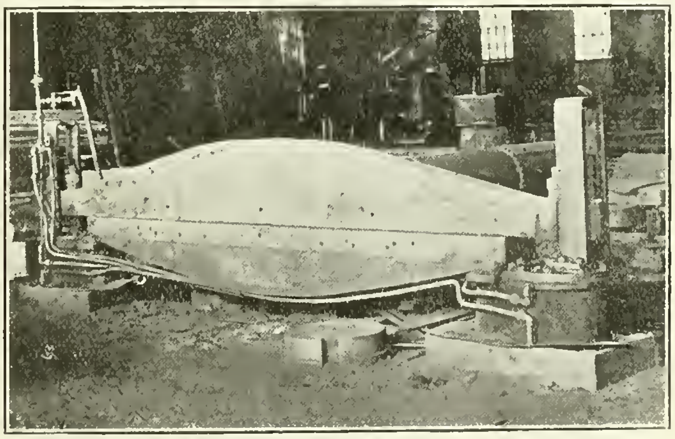
◆

Flanging Press at the Michigan Central Railroad St. Thomas Shops.

The uses to which air may be put around a railway shop are many and varied, as anyone familiar with railways knows The accompanying illustration of a flanging press as used by the M.C.R. in its shops at St. Thomas, Ont., affords one more example of its adaptability, another means of usefulness in this field.

The usual flanging press is essentially the same as the one shown, only the clamping is effected by square-threaded screws at each end bearing down on the upper clamp. This makes an effective means of clamping, the plate to be flanged being very securely held; but where it failed was in its slow action, it being necessary to slowly release the ends by their respective jack screws, then insert the plate and finally clamp down. All this took time and labor, a very important factor.

The press shown, being operated by air, is very quick-acting. The upper, or moveable jaw, instead of doing a moveable jaw, instead of having a jack-screw action, is attached by pistons to plungers in the air cylinders at each end. These two air cylinders have air connections from the same valve making their operation simultaneous. The cylinders being of ample proportions provide a good holding grip on the plate to be flanged, at the same time making it possible to quickly release when desired. This quick-action is especially essential when inserting, on account of the heat in the thin plate as it comes from the flange fire quickly dissipating. Clamping pressure and release are both obtained by air in the respective ends of the cylinders, two double valves providing for this double action.



Flanging Press Actuated by Air.

◆

Steel Passenger Cars.—The rapid change from wood to all-steel construction passenger cars is pointed out in a recent issue of the Railway Age Gazette. At the beginning of this year there were about 3,000 passenger cars of this type in service, which, out of a total of 54,600 cars of all kinds, gives a percentage of 5.3 of the total. Of the cars constructed and contemplated for this year, 62% will be all-steel construction, so that at the end of this year, fully 9.3% of all passenger cars will be of steel, while 3.5% have steel underframes. An estimate given by our contemporary places the cost of substituting all the wooden for steel cars at about $630,000,000. These figures do not seem to have been reckoned with by the principal advocates of the change.

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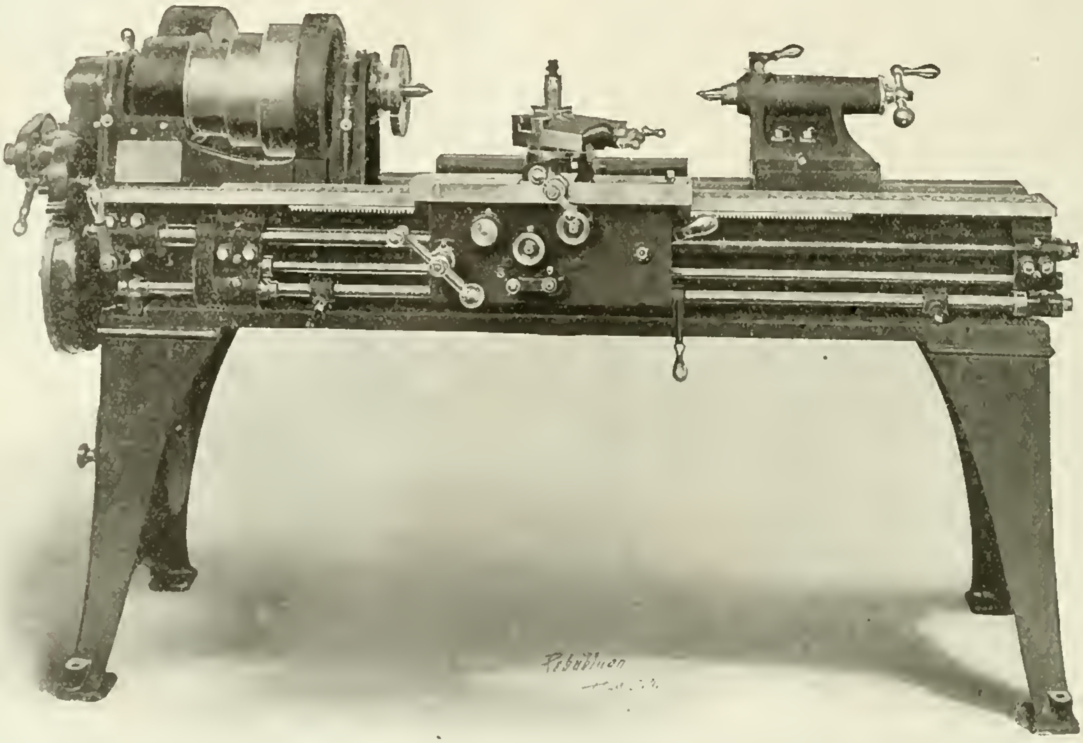

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Dumping Box Cars for the Canadian Pacific Railway.

From time to time, attempts have been made by railways, car builders, designers and inventors towards the production of a practical dumping box car that would be equally well adapted to carrying either bulk freight like grain, coal, coke, ore, etc., or general merchandise; in other words, an endeavor has been made to produce a car that would be at the same time both a box car and a gondola. Traffic conditions have created this demand, for there are many points on every railway from which nothing but commodities that must be put in box cars are shipped in but one direction, the car returning to that point empty, while the conditions in the opposite direction are probably just the reverse, the main traffic in that direction being such as to require gondolas. This means that empty box cars are travelling in the same direction as loaded gondolas, and vice versa. Such conditions exist on the C.P.R., where grain is brought east and coal is shipped west over the same line. As a general rule, the railways have been compelled to use box cars very extensively for as many kinds of commodities as possible in order to do away with a lot of the empty car haul.

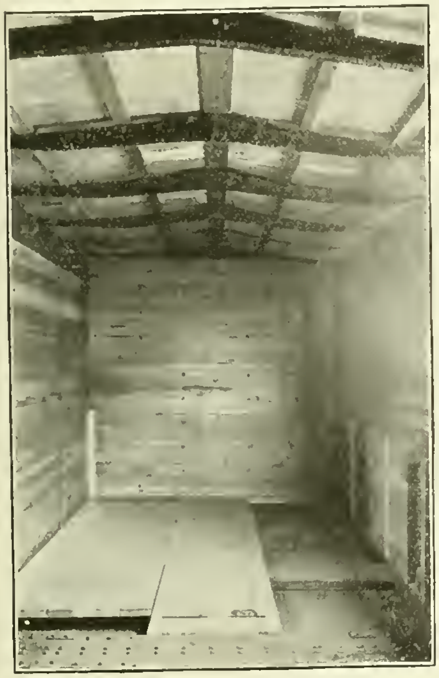

Fig. 1.—Interior View of Car with Convertible Door on One Side Open.

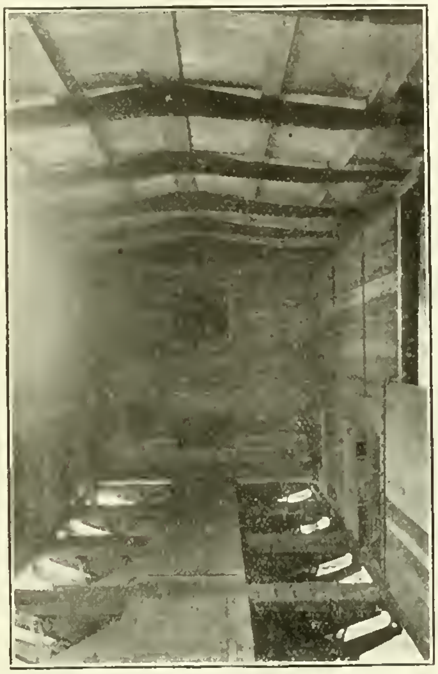

Fig. 2—Interior View of Car with both Convertible and Dumping Doors open.

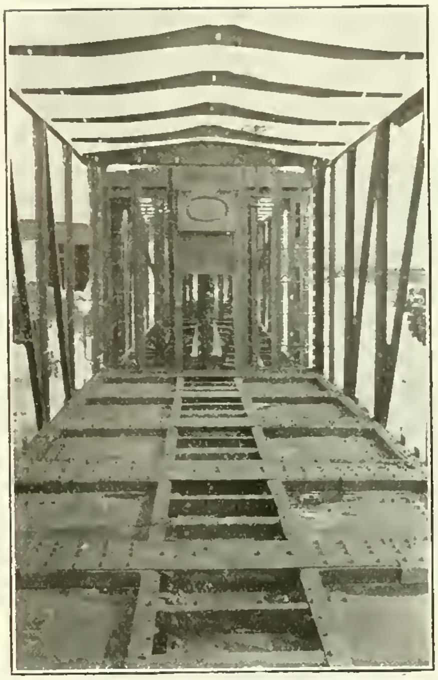

Fig. 3—Skeleton of Car before the Woodwork has been added.

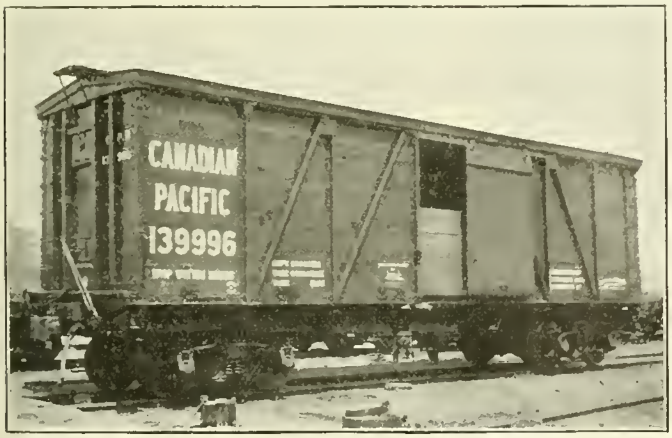

Fig. 4—Exterior View of Completed Car with Dumping Doors open and Grain Door up.

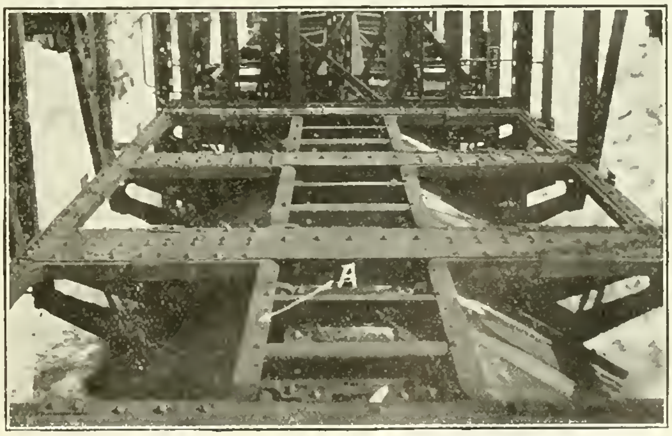

Fig. 5—Framework of Car before Woodwork has been added, showing Dumping Doors open.

The factor of unloading is another point commonly overlooked. By the use of dump cars, much of the unloading time is saved, necessitating fewer cars to carry a given volume of traffic between two points. For instance, it takes two men about 10 hours to unload 30 tons of coal from a box car on a trestle at a cost of from 8 to 10 cents a ton, whereas the same two men could unload 50 tons from a dump car of the Otis type at the same point in 10 minutes at a cost of only 1½ cents a ton.

Recently, the C.P.R. had an experimental car built of the dumping box car type, illustrations of which are shown herewith. This car was built to the design and patents of the Hart-Otis Car Co. by the Canadian Car & Foundry Co. and has a floor and underframe construction of a modified design of the Hart-Otis dump car made while the superstructure is that of the standard C.P.R. steel frame box car. The doors of this car are specially designed with a view to making them tight for carrying grain, making it possible to come east with grain and return to the west laden with coal. The car being of the dumping type gives the users all the advantage of a gondola.

The interior arrangement of the finished car is shown in figs. 1 and 2. To the left, in the former illustration, one of the wooden convertible doors is shown closed. The convertible door to the right is in its open position. It will be noticed that this door sets into a recess in the wall, leaving no space for bulk freight to accumulate. The convertible doors at the centre of the car, opposite the side doors of the car, are made large enough to extend half way across the car when lowered. They act as grain doors when raised into the position indicated to the right in fig. 2. When the car is to be used as a dump car, the convertible doors are raised; and when used for merchandise, lowered, forming a regulation box car with a solid floor. The dumping doors are of themselves a sufficient flooring; thus, if required, the end convertible doors may be dispensed with, leaving only the centre ones for grain doors. These centre doors and middle portion running lengthwise between the end convertible doors, form a runway for trucks when loading merchandise. Dispensing with the end convertible doors would mean a saving in weight of about a ton.

Figs. 3, 5, 6 and 7 give detailed views of the car construction, and fig. 4 shows an exterior view of the completed car

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with one section of the drop bottom lowered. The half-opened side door shows one of the centre convertible doors raised into position to act as a grain door. Fig. 3 is practically the same view as that in figs. 1 and 2, only no woodwork has been added. The flooring, it will be noted, is very like a flat gondola dump car.

The drop bottom construction in its dump position is clearly shown in fig. 5, and fig. 6 shows the operating gear at close range. As will be noted in fig. 5, there is an angle-iron edge, extending all around the opening, one leg projecting downward. Over this, the upturned edge of the door fits, making a tight joint. This edge of the door is indicated at B in fig. 6. The front edge of the door has no flange, so that no interference may be offered to the flow of the material in the car while dumping. When closed, this edge without a flange is protected by the hinged piece A in fig. 6, swinging up into place at the outer edge of the door, forming a tight joint at that point. This hinged piece is operated by the door closing mechanism.

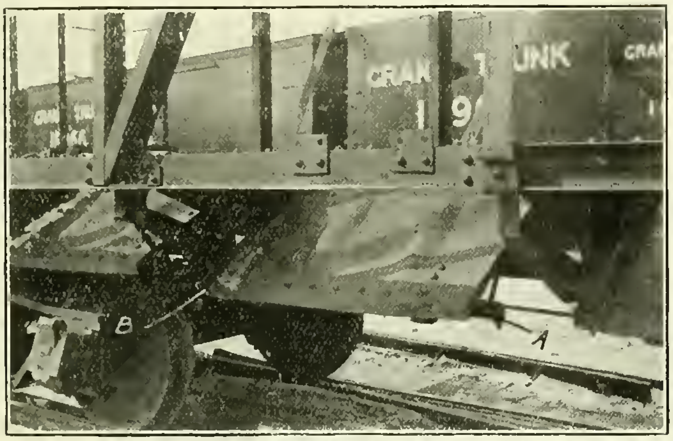


Fig. 6—Near View of Dumping Door, showing Sealing Hinge for Outer Edge.

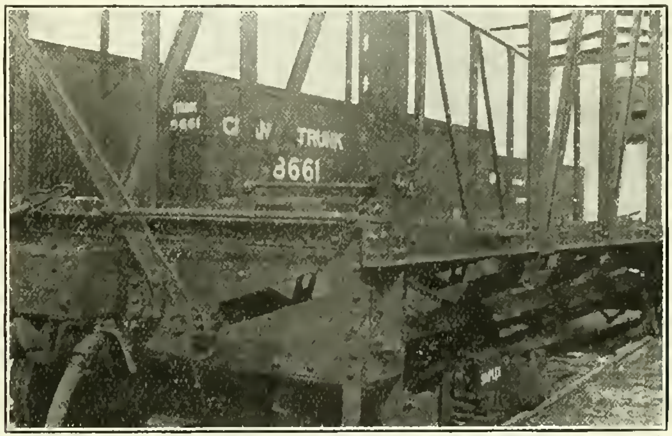


Fig 7—Near View of Operating Gear and Drop Bottom Construction.

The door closing mechanism is shown at close range in fig. 7. A shaft passing along each side of the car is confined in its motion to move along inclined ways in the cross-beams of the car. These guiding ways are clearly shown. The hinged doors rest on this shaft, and the position of the ways is so arranged that as the shaft moves outward, the doors are gradually closed. In its outer position, the shaft comes up under the hinged piece A of fig. 6, securely locking the door and making a tight joint.

In a recent test, the bottom of the car proved perfectly tight, meeting the expectations held for it. The designers and builders have every confidence for its future success.

Is It Economy to Use Soft Ties for Switches, Switching Leads and Track?

At the Roadmasters' and Maintenance of Way Association's recent annual convention at St. Louis, Mo., the committee on this subject presented the following report:—

Classification of Hard and Soft Ties.—Under the classification of soft ties we deem it proper to consider cedar, pine, gum and similar woods while under hard wood we have in use as ties, oak, beech, hickory, hard maple, ash, pecan, honey, locust, etc. Perhaps the best examples of the different classes are seen in the cedar in the soft wood and the white oak in the hard wood. There is much to be said for all the different woods in both classes but to confine our report to one line we will consider only the cedar and white oak and eliminate all consideration of tie treatment to prolong the life of the wood.

Safety the First Consideration.—The safety of the track outside of the grade is assured by three things, line, surface and gauge, while there are three elements that produce them, the ballast, ties and rail. From the ballast we get the surface, from the rail the line and from the tie the gauge, each, of course, being in a manner influenced by the other. In the main track, with heavy traffic and modern equipment, we are striking at the very foundation of the safety of our track in attempting to use soft ties, no matter what their relative cost to hardwood ties, for the reason that one train may turn over many rails in apparently sound ties.

Under safety we must think of other tracks as well as the main track, since damage to equipment is a matter of concern to us as well as loss of human life, and no side track of general use should be so constructed that engines of the heaviest class cannot use it without perfect safety. This is especially true of ladder racks and switching leads in important yards, and passing tracks along the main line where a derailment may mean a yard blocked for an indefinite time and the whole system hampered by one weak link in the chain.

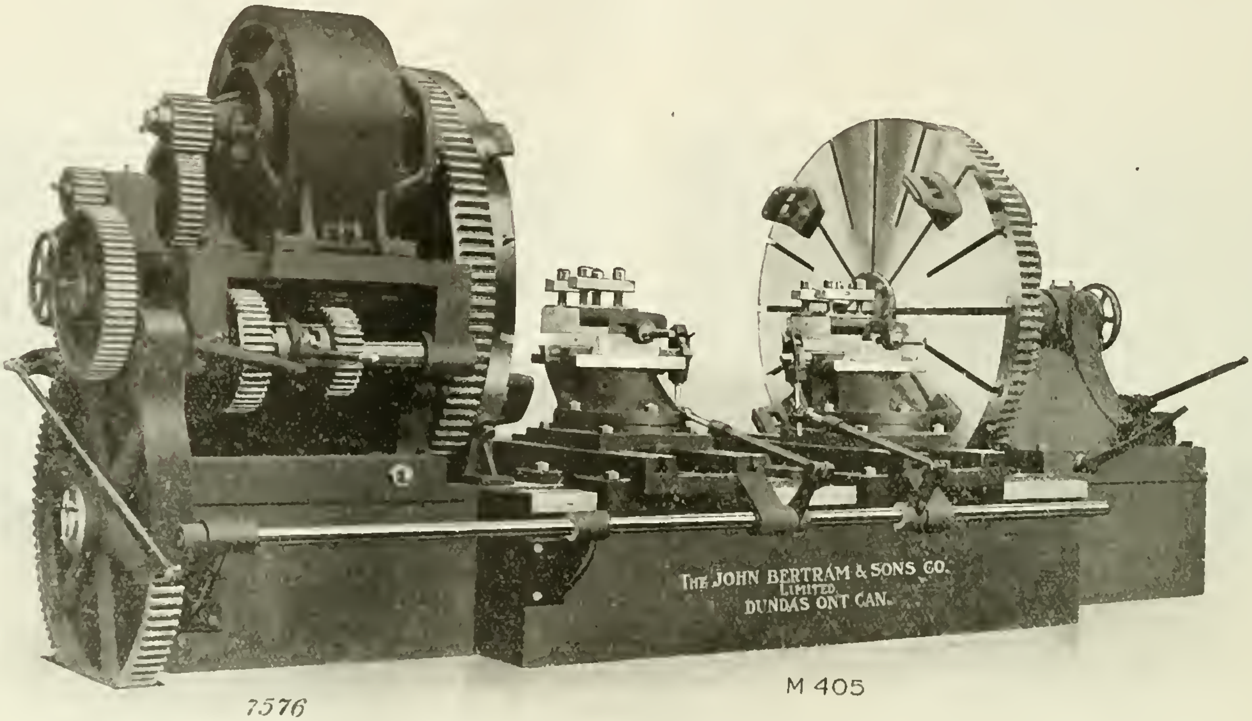
On nearly every railway freight business has reached a state of development far in advance of the track facilities of the terminal yards. We have been slow to awake to the fact that perishable freight is not the only freight that is advertised to leave a given point one night and be at a given destination the following morning. A very small delay in either yard is enough to delay the delivery, which often repeated will eventually give the business to a competing line. One railway connecting many points in the northwest advertises over a score of points where all classes of merchandise will be delivered on almost passenger schedule. The yards where this freight is loaded and unloaded must be equal to the standard set for them, or the system would fail.

Cheap Ties on Branch Lines.—We hear much of cheap ties on new branch lines, where the argument is presented that the traffic is light, and the cedar tie on account of its long life, will give all the service that is necessary for years to come, when, if the line proves profitable and new business is developed, a more permanent construction can be furnished. This argument is good if it were given to the management to foresee what each branch line will do in the coming 10 or 20 years. But railway business is at best a variable quantity and the line that sees but one local train each way a day when built, may in a year be the only outlet to coal or oil fields undreamed of when built. Your committee investigated among other cases one track 34 miles long that was built of gravel ballast, cedar ties and 65 lb. rail that answered every purpose for 13 years, when almost in a night a stone field was developed, coal was diverted from another line and merchandise runs were sent over this line on account of better grade than the old line. One hundred thousand capacity steel cars and the heaviest engines replaced the little coal train and the cedar ties were found entirely inadequate to the demand put upon them. The first means of improving conditions was to replace 1,500 cedar ties with oak ties the first year and to change out the balance as fast as they could be reached each year. The gravel ballast stood the strain as well as the light rail and after five years of heavy traffic the same rail is still in service and in good condition. At the time the cedar ties were taken out they were as sound on top as when put in, although slightly decayed from the bottom. Under the rail they were crushed from one inch to half way through and cut to pieces with spikes where they had been driven to restore the spreading gauge. At the time this line was built the soft ties cost 50c. each and oak ties were worth only 35c. each, the cedar ties being selected because they were known to be of long life and there was no apparent reason why they should not give all the services that would be demanded of them for 25 years. When built all the ties in the track were protected by light tie plates, which were the heaviest plates on the market at the time. These tie plates proved of very little benefit when the heavy traffic was put on the line.

Soft Ties for Repair Tracks.—In repair yards we have conditions that are ideal for the soft ties. Here we have nothing heavier than a switch engine and low speed on all tracks. The long life of the tie is a matter of economy both in first cost of the tie and the greater expense in renewing the tie in the hard ground where it has been packed down by the men working in the yard. We also find good use for the soft tie in empty tracks at coal mines, storage tracks and similar tracks where the traffic is light enough that we are justified in using light rail and inferior ballast.

Summary.—Local conditions and not good engineering have made the soft tie a factor in railroad construction, where it serves its time until pushed out by its hardier brother. When fast trains and heavy trains follow the converted switch engine, and freight must move on schedule time to arrive at growing terminal points, there is no place for a weak unit in the machine of railway operation and if the use of soft ties in switches, switching leads and track means the making of an inferior tie one of the links in the construction of an up-to-date railway, it is not economy and its use is not recommended.

LOCOMOTIVE AND CAR SHOP MACHINERY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Schemes of Erection Proposed for the Quebec Bridge

In our last issue we gave the schemes of erection proposed by the St. Lawrence Bridge Co., for its accepted and other designs. Following are schemes proposed by other tenderers:—

BRITISH EMPIRE BRIDGE CO., LTD.

This company tendered only on the Board's design, but proposed three different schemes of erection of the suspended span: (a) cantilevering out; (b) floating in on high falsework; and (c) floating in a special truss to be used as stage or falsework upon which the suspended span proper will be afterwards erected.

The method of erection of the cantilever and anchor arms is naturally the same for all three cases (fig. 3). The work is started by first building a high steel tower ,two legs of which will rest on the main pier, while the other two are on special concrete pedestals. These towers will be slightly higher than the top chords of the bridge. On top of the tower will be erected the two travellers to be used for the erection of the bridge itself, one to be used on the top chord of the anchor arm and the other on the top chord of the cantilever arm.

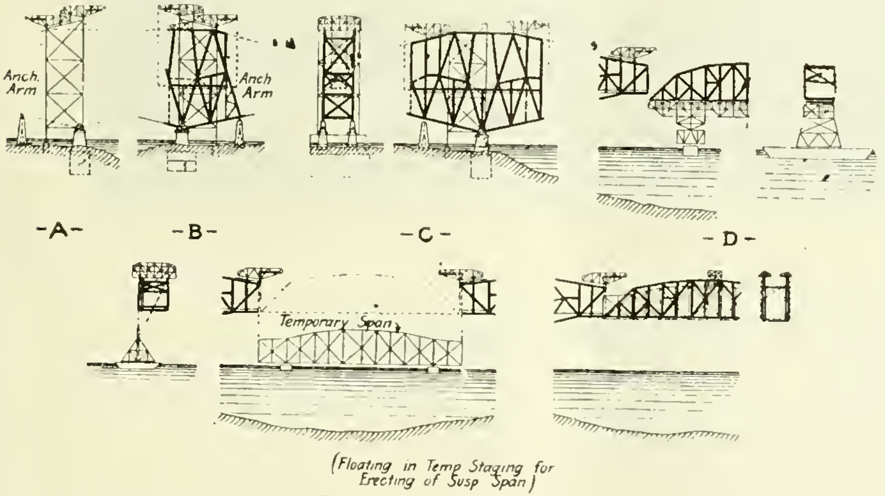


Fig. 3.—British Empire Bridge Co., Board design. (This proposal includes a scheme for erecting the suspended span on a temporary span floated in.)

A portion of the material is to be delivered by water and a portion by rail-the material delivered by water will be erected by the travellers standing on the top of the tower and the erection will be carried forward by water and far as convenient. Afterwards the material will be delivered by rail. For this purpose a trestle will be erected between the land and the portion of the steelwork already erected.

To obtain stability during erection a temporary concrete pier will be built under panel point AL10. This pier will have eyebars built into it, to which the truss may be anchored. During erection the member AU12—AL10 will be reinforced so as to act as a compression member. After the travellers have done all the erecting possible from their position on the towers, they are transferred to special tracks on the top chords from which position they proceed with the erection, panel by panel. As both the cantilever and anchor arms are erected as cantilevers the stresses during erection are the same as in the completed bridge, and all joints will be riveted up complete as the erection proceeds.

Suspended Span Cantilevered.—When the cantilever arms are completed the same top-chord travellers can proceed with the erection of the suspended span to junction at the centre. The adjustment at this point is controlled by adjustable members between the suspended span and cantilever arm.

Suspended Span Floated in.—Floating the suspended span into place permits of work on this part of the structure to be pushed ahead at the same time as the other parts of the bridge. In the case of the high floating erection, the falsework is to be erected on concrete piers at Sillery, about three miles below the bridge site. The falsework consists of a long truss supported on two towers, the foot of each tower being carried on a pontoon 225 ft. long. 45 ft. wide and 30 feet deep. The panel-points of the supporting falsework correspond to the panel-points of the suspended span, permitting the use of eyebars in the bottom chord of this span. The falsework is not transferred to the pontoons until the suspended span has been completed and everything is ready for towing to the site. It is built high enough so that at extreme low tide there is no chance of the suspended span putting any load on the supporting cables attached to the cantilever arm, during the operation of coupling up. The falsework is securely attached to the pontoons, but the span itself is supported on special bearings, preventing any side or lateral movement prevents any chance of the weight of the falsework and pontoons being taken on the structure. The pontoons are fitted with pumps and valves so that the level of the steelwork can be controlled at all times. The pontoons are held in position under the bridge by the tugs supplemented by anchors and moorings attached to winches on the adjacent shores. Navigation on the river would have to be stopped during the operation of floating in.

Stage Erection.—The third scheme for erecting the suspended span proposed by this company is by means of a special temporary span which is floated in and suspended between the two arms of the cantilever arms, and upon which the permanent span is finally erected.

In general, this supporting stage consists of two main trusses spaced 64 ft. c. to c., each main truss being made up of two independent trusses spaced 9 ft. c. to c., the two being securely braced together so that they would act as a single truss. The construction of the stage is made as light as possible, wire cables being used for all tension members, the compression members being of nickel-steel. The weight of each double truss is about 510 tons. The spacing of the vertical posts and diagonal bracing is arranged so as to give free access to joints and connections of the permanent but leaving the falsework free to descend below the span when required. This span to facilitate driving of pins, riveting, etc., and the top and bottom chord are either above or below the corresponding chords of the suspended span. The floor of the stage is as shallow as possible, so as not to interfere with the clear headway required for navigation. The floorbeams are attached to the side trusses by a knuckle bearing between the trusses, thus ensuring equal distribution of load.

In erecting the stage it is intended that each double truss will be hoisted in place separately by means of the top-chord travellers and slung from the end of the cantilever arms. To ensure stability during hoisting and until the floor system and bracing was put in place the particular form of truss used was decided upon. Until the wind bracing is put in, the trusses are guyed to the ends of the travellers overhanging from the end of the cantilever arms.

The suspended span will be built on the stage floor outside the temporary girders. When this truss is completed it will be hung in its proper place, being attached, however, to the temporary truss to prevent lateral motion or stress from wind. The floor and bracing will then be put in place, the dead load of which will be carried by the permanent structure, the temporary staging being required to carry only the dead load of two main trusses. Special adjusting devices are placed under the panel-points of the suspended-span trusses during construction, to correct whatever deflection may take place in the temporary staging under the constantly increased load.—Engineering News.

(To be Continued.)

The Use of Manganese Steel for Frogs and Crossings.

The committee on this subject, appointed by the Roadmasters and Maintenance of Way Association, presented the following report at the recent convention at St. Louis, Mo., based on the personal experience of members of the committee, and close examination of such frogs and crossings in use on the various railways in and around Chicago and other points:

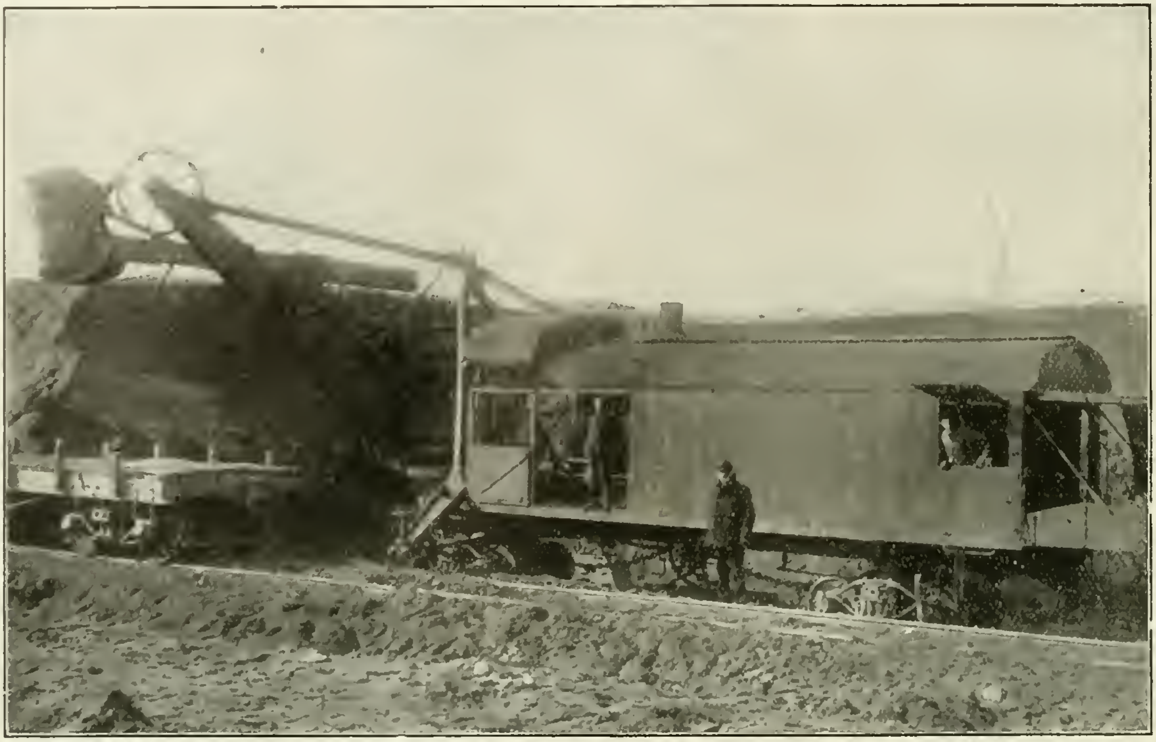
We find at points where such material has been in use for a number of years, as far as we have seen and have been able to obtain information, that manganese frogs and crossings have proven a success.

We have found that by use of such material the maintenance of frogs and crossings has been greatly reduced by eliminating cost of bolts which are ordinarily used in the Bessemer rail frogs and crossings. Another advantage is a big saving in frogs and crossing timbers which are ordinarily ruined, due to respiking and rail cutting.

One of your committee had installed two no. 10, 85 lb. manganese frogs which have been in service under the heaviest kind of traffic on switching lead since Dec. 8, 1908. One of these frogs is still in the track and will wear one more year. The other frog was removed Feb. 1, 1911, on account of toe and heel of Bessemer rail being flange worn. The manganese part of frog is still in good condition and would wear out another set of rails.

At the point where those frogs are in use the traffic is of the heaviest kind—continuous switching on this lead night and day. The longest service obtained from the ordinary Bessemer rail frog at this point was 30 days. In the time that the manganese frog has been in the track it would have worn out 26 Bessemer rail frogs, each costing about $29

ATLANTIC STEAM SHOVELS



CLASS 45-16-2½ ATLANTIC SHOVEL.

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Reduction in friction and boiler losses, with corresponding increase in pull at dipper, is the reason why the Atlantic shovel digs more at less cost than shovels of the chain type.

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while the cost of the manganese frog was about $94. In addition to this there was no cost in maintaining manganese frogs up to date. You all know there would be, with the ordinary Bessemer rail frog at least in the way of rebolting.

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From the committee's experience and personal observation they recommend that such frogs be of solid boltless construction, and in their judgment it would be great economy for any railway company to adopt their use.

Transportation Men's Birthdays in October.

Many happy returns of the day to:—

R. A. Burford, cashier, C.P.R. ticket office, New York City, born at Brooklyn, N.Y., Oct. 4, 1878.

G. E. Burns, Freight Claims Agent, Eastern Lines, C.P.R., Montreal, born at St. Thomas, Ont., Oct. 6, 1863.

T. C. Burgess, Commercial Agent, G.T.R., Minneapolis, Minn., born at New York City, Oct. 2, 1853.

F. F. Busteed, C.E., General Superintendent, British Columbia Division C.P.R. Vancouver, born at Battery Point, Que., Oct. 10, 1858.

J. M. S. Carroll, Montreal Sales Manager, Canadian Rubber Co., born at Ballarat, Australia, Oct. 22, 1874.

C. E. Cartwright, M. Can. Soc. C.E., ex-Division Engineer, C.P.R., Vancouver, B.C., born at Toronto, Ont., Oct. 13, 1864.

G. S. Cooke, Superintendent, Grand Trunk Pacific Ry., Melville, Sask., born at Montreal, Oct. 27, 1875.

L. V. Druce, Commercial Agent, G.T.R. and G.T.P.R., Vancouver, B.C., born at London, Eng., Oct. 20, 1873.

C. E. Dewey, General Freight Agent, Grand Trunk Pacific Ry., Winnipeg, Man., born at Cheshunt, Eng., Oct. 2, 1873.

J. Earls, ex-Secretary and Treasurer, Canadian Freight Association at Toronto, Ont., born in Ireland, Oct, 30, 1838.

C. E. Friend, General Auditor, Canadian Northern Ry., Winnipeg, born at Brighton, Eng., Oct. 12, 1871.

W. P. Fitzsimmons, Commissioner of Industries, G.T.R., Montreal, born at Detroit, Mich. Oct. 27, 1868.

A. H. Harris, Special Traffic Representative, C.P.R., Montreal, Que.,, born in Devonshire, Eng., Oct. 15, 1855.

G. Hodge, Superintendent, District 2, Ontario Division, C.P.R., London, Ont., born at Montreal, Oct. 2, 1874.

J. H. Hughes, Superintendent, District 2, Lake Superior Division, C.P.R., White River, Ont., born at Charlottetown, P.E.I, Oct. 7, 1865.

J. W. N. Johnstone, General Passenger Agent, Reid Newfoundland Co., St. John's Nfld., born at Campobello, N.B., Oct. 4, 1878.

S. Way Kent, Ticket Agent, C.P.R., Paris, Ont., born in Brant County, Ont., Oct. 23, 1879.

W. M. Kirkpatrick, Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, born at Kingston, Ont., Oct. 8, 1874.

W. B. Lanigan, Assistant Freight Traffic Manager, Western Lines, C.P.R. Winnipeg, born at Three Rivers, Que., Oct. 12, 1861.

J. W. Leonard, Assistant to Vice President, C.P.R., Montreal, born at Epsom, Ont., Oct. 1858.

C. F. Lunan, Assistant Commissary Agent, C.P.R., Calgary, Alta., born at Sorel, Que., Oct. 2, 1879.

W. T. Marlow, Import Freight Agent, C.P.R., Montreal, born at Limerick, Ireland, Oct., 25, 1872.

R. Marpole, General Executive Assistant, C.P.R., Vancouver, B.C., born in Montgomeryshire, Wales, Oct. 9, 1850.

F. G. Martyn, Assistant Superintendent, C.P.R., West Toronto, Ont., born at Bury, Que., Oct. 7, 1848.

H. Paton, President, Shedden Forwarding Co., Montreal, born at Johnstone, Renfrew, Scotland, Oct. 5, 1852.

D. Pottinger I.S.O., Assistant Chairman, Government Railways Managing Board, Moncton, NB., born at Pictou, N.S., Oct. 7, 1843.

N. L. Rand, ex-Master Mechanic, I.C.R., Moncton, N.B., born at Shediac, N.B., Oct. 28, 1843.

H. G. Reid, Master Mechanic, C.P.R., North Bay, Ont, born at Pembroke, Ont. Oct. 27, 1863.

W. S. Rollo, joint agent, G.T.R. and Central Vermont Ry., St. John's Que., born at Dundee, Scotland, Oct. 8, 1852.

J. K. Savage, Chief Train Dispatcher, C.P.R., Brandon, Man., born at Forreston, Ill., Oct. 5, 1876.

Sir Thomas G. Shaughnessy, K.C.V.O., President, C.P.R., Montreal, born at Milwaukee, Wis., Oct 6, 1853.

T. Duff Smith, Fuel Agent, Grand Trunk Pacific Ry., Winnipeg, Man., born at Barking, Essex, Eng., Oct. 2, 1868.

A. B. Spence, Chief Dispatcher, Reid Newfoundland Co., St. John's Nfld., born at Harbor Grace, Nfld., Oct. 21, 1882.

C. W. Spencer, ex-General Manager Mackenzie, Mann & Co., Railway Lines east of Port Arthur, Montreal, born at Kemptville, Ont., Oct. 31, 1857.

E. Sterling, Divisional Trainmaster, British Columbia Electric Ry., New Westminster, born at Thornbury, Ont., Oct. 3, 1875.

W. S. Taylor, ex-Treasurer, C.P.R., Montreal, born at Dornoch, Sutherlandshire, Scotland, Oct. 18, 1839.

E. N. Todd, Division Freight Agent, Eastern Division, C.P.R., Montreal, born at Huntington, Que., Oct. 17, 1879.

A. W. Wheatley, Manager, Canadian Locomotive Co., Ltd., Kingston, Ont., born at Ashford, Kent., Eng., Oct. 12, 1870.

L. H. Wheaton, Divisional Engineer, National Transcontinental Ry., Moncton, N.B., born at Sackville, N.B., Oct. 5, 1866.

G. B. Wyllie, Travelling Passenger Agent, Illinois Central Rd., Buffalo, N.Y. born at Toronto, Ont., Oct. 15, 1851.

◆

Railway Lands Patented.—Letters patent were issued during July, covering Dominion railway lands to the C.P.R. on account of grants, 1,324.36, on account of stations and grounds, 124.09 acres.

Lifting a G.T.R. Locomotive out of the Welland Canal.

In an accident at Port Colborne, Ont., July 21, Grand Trunk locomotive 638 dropped 33 ft. into 19 ft. of water in the Welland Canal and turned a complete somersault. The tender was broken loose, which proved a great advantage. It was not found practical to take the locomotive out where it went in, and as the canal was blocked and immediate removal was necessary, a powerful dredge was employed, pulling one end at a time, and the locomotive was dragged clear of the new canal and left 40 ft. from shore in 18 ft. of water. Tenders were asked for taking the locomotive out, and ranged from $6,000 to $8,000. As these were considered very excessive, it was decided to do the work with the company's own forces.

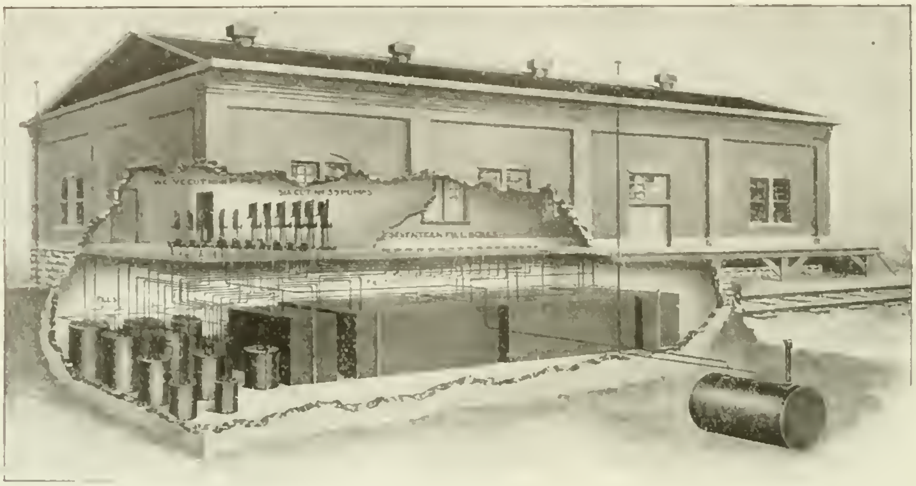
Lifting a G.T.R. Locomotive out of the Welland Canal.

Two of the company's 100 ton derricks and a supply of two-inch wire and cables and heavy clevises were secured and on Aug. 7 the locomotive was moved close up to the stone wall of the canal. It was felt certain that this wall was not strong enough to stand the lifting of the locomotive with one derrick, so, in order to prevent any possibility of an accident, two were used, placed 30 ft. apart, parallel with the canal, and far enough back so that the outrigging rested on the wall. As the blocks would not reach far enough to raise the locomotive at one lift, it had to be anchored half way up. This was done by cables from the boom, and the blocks lowered for the second lift, after which it was landed on the track on August 8, without a hitch of any kind.

The whole work was most successfully carried out under the charge of Thos. Rodgers, car foreman, Hamilton, the diver employed being Williams, of Port Colborne. It is said that the total expense of raising the locomotive was only about $1,700, of which some $700 was paid the diver.

◆

Calgary Elevator.—The John S. Metcalf Co., Limited, Montreal and Chicago, is drawing plans for additional machinery installation for the Globe Elevator Co., Calgary, Alta., to consist of 10,000 bush. shipping leg, 2,000 bush. scale, shipping spout and appurtenances. This machinery is to go in the 250,000 bush. elevator built for the company two years ago by the John S. Metcalf Co., the business having already outgrown the elevator.



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Telephone Train Dispatching.

By A. Dwight Smith.

[This, the second of a series of articles, by Mr. Smith, deals with dispatchers' and way station equipment.]

One can now occasionally walk into a dispatcher's office where the telephone is installed and see the dispatcher with his feet on the desk, his train order book in his lap, and the long green telephone cord from his chest transmitter and head receiver connecting him officially to business, while formerly when using the telegraph for the movement of trains, the same man was working at a nerve-straining rate. Perhaps it is needless to say that the dispatchers like the telephone; anything which will make the operator down the line answer his call quickly, with no work for the dispatcher, is certainly to be appreciated at the dispatcher's end of the line.

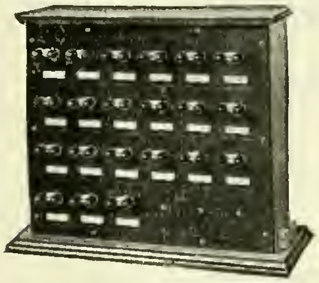


Fig. 1.—Dispatcher's Calling Key Cabinet.

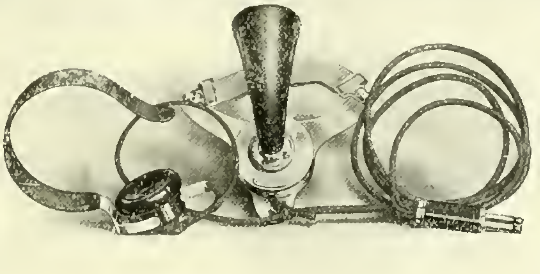


Fig. 4.—Dispatcher's Telephone Set.

Generally, when the telephone is installed, it is given over to the dispatcher and way station operator to become familiar with, before being officially cut over for train order work. It is interesting to see how the dispatcher starts in using the apparatus upon his own responsibility. The dispatcher will be calling a station on his Morse wire for five minutes without getting a glimmer of a response; then he will go over to his telephone sending key cabinet and ring the office up on that; the bell is always answered at once and the things the dispatcher says in telling the man to go over and answer his Morse usually need expurgating.

Practically all dispatchers start in hostile to the innovation of telephone train dispatching. They are used to the telegraph from years of association. They take to it grudgingly, but inside of a month are swearing by the telephone, and if anything happens to put the line out temporarily, they are hot after the telephone inspector until the trouble is removed. This does not happen in one or two cases, but has happened everywhere, and will until all the dispatchers in the country have the luck to be reformed to the good natured way of handling trains.

A circuit for handling trains should be under the control of one man. This is accomplished in the use of the telephone, and the dispatcher has absolute control. He does all the calling, and if a way station wishes to talk to another way station, he can only reach him with the dispatcher's permission who does the calling. Formerly, it was not a rare occasion for two operators to want to use the wire at the same time and start fighting for it; they would sometimes leave the key open for a few minutes in hopes that the other man might leave the wire. In railway message work, the circuit as above designed, with special signalling apparatus, will allow one way station to call another as readily as a dispatcher can summon an operator.

In standard telephone train dispatching lines, there is what is known as the "sending key cabinet" equipped with the required number of individual sending keys (one allotted to each station) and placed before the dispatcher. These keys are noiseless and are mounted in a highly polished oak cabinet as shown in fig. 1, and with their black japanned faces and white designation strips give this part of the equipment a very attractive appearance. Any individual key can be removed from the cabinet without disturbing any other or breaking the circuit.

If the dispatcher wishes to call a given station, he selects the key in his cabinet allotted to this office, gives it a quarter turn and lets go. This sets a train of gears in motion by means of a small spring motor, which operates through a local battery a main line relay, which in turn, because of a certain operation of the sending key, sends out on the line a predetermined number of direct current impulses which operate the selector at the station required, the contact of this station is closed and the bell rung. This can can be completed in from a fraction of a second to four seconds, regardless of the distance, but according to the number given to the selector at the way station (this selector will be described more fully in a later article).

Fig. 2 is a diagrammatic sketch of the apparatus located at the dispatcher's office. A battery (of dry cells usually) is installed here, whose voltage may run from 50 to 300 volts. This is for sending the signalling impulses out on the line and the voltage depends on the length of the line and the number of way stations on it.

The contacts of the sending keys are not designed to carry heavy current, so this battery is connected to the line through the contacts of specially designed telegraph relays. Three retardation or "choke" coils are also employed in series with the telephone line, and across these condensers of 6-microfarads capacity are placed. These are for the purpose of absorbing the noise of the signalling impulses and permit calling the way station and a conversation to be carried on at the same time. If some means were not provided for taking care of the thump due to the high voltage sending battery, this would be impossible. As it is, it is absorbed by the coils and condensers. The 250-ohm resistance across the line on the back contact of the relay absorbs the condenser discharge.

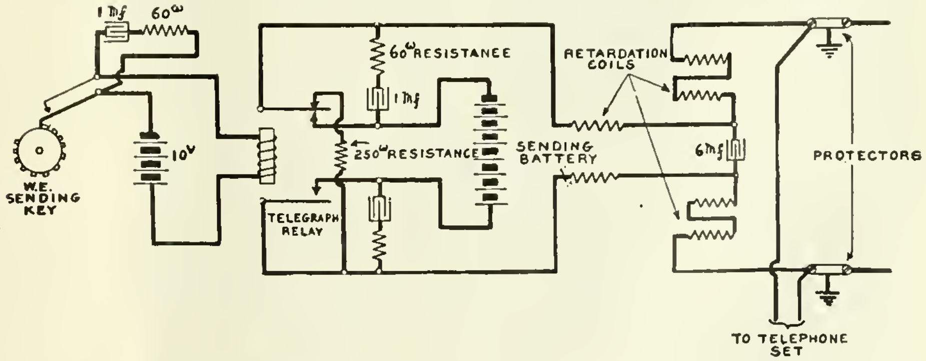


Fig. 2.—Wiring Diagram of Dispatcher's Apparatus for Signalling Stations.

The condensers and resistances around the telegraph relay contacts are for eliminating sparking and greatly increase the life of the relay. A similar arrangement is used on the sending keys.

The circuit above described, with a few unimportant modifications, is what is used on practically all standard individual call systems.

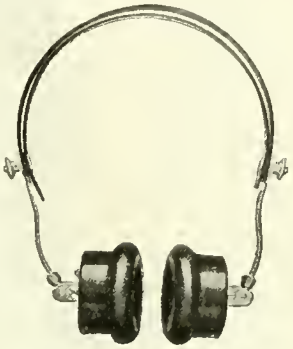


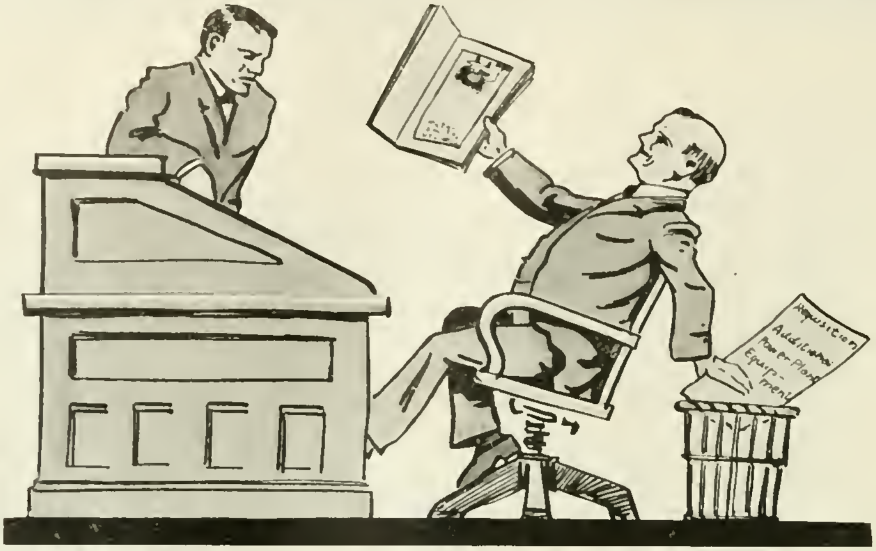
Fig. 3.—Dispatcher's Double Head Receiver.

The dispatcher is supplied with similar telephone equipment to that used by the switchboard operators at central office exchanges, consisting of a chest transmitter and head receiver (either double or single, figs. 3 and 4), and connected to the line by means of the six or eight foot telephone cord and plug. This gives him ample room to move around and manipulate his train sheet. He is supposed to be connected in on the circuit all the time he is working his trick, so apparatus light and easy to wear is provided. A key is also wired in the transmitter circuit so that the dispatcher's transmitter can be cut off the line when he is listening, or does not want the way station operator to hear any conversation that might be going on in the office. Fig. 5 shows the wiring of the dispatcher's equipment.

In addition to this, if a division is equipped with more than one telephone circuit, whether it is to be used for train dispatching or not, by means of a key switching device he is able to shift from one line to the other using the same telephone equipment.

We have now covered the function of the dispatcher's apparatus. At the way station the equipment is equally interesting. There are a great many types of telephones developed to meet conditions that arise on different roads, but the apparatus manufactured today has been so standardized that it takes care of them in most cases.

It is quite a problem in telephone engineering to have a pair of wires 250 miles or longer and have 50 way stations distributed along this distance, and to be able to call these stations selectively and at the same time permit them to listen in simultaneously; yet it has been



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done. You can go to any standard installation now in service and listen at any place you may select. If you can persuade the dispatcher to call all stations and keep them in on the circuit, you can have offhand a pretty severe test of the transmission efficiency of the circuit, and you will not notice any loss in transmission, but will be able to hear the operator at the end of the line as well as the station next to you. You can have the dispatcher call a way station while you are listening, but beyond being able to distinguish the signals faintly, you would not be aware of it. You can hear the buzz of the "answer back" signal at the station called when the bell rings, and then you hear the operator come in and answer perhaps 200 miles away, but sounding as if he were in the next room.

How is it done? Very simply, as far as actual apparatus is concerned, and simplicity obtained after long years of skilful and careful designing and experimenting. To explain this, we will have to refer to transmission values, and it might be well to explain the units used.

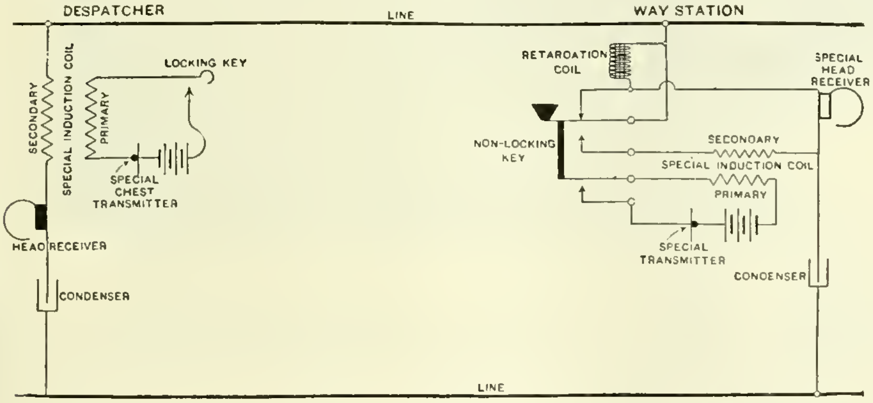

Fig. 5.—Diagram of Dispatcher's and Way Station Telephone Apparatus.

In giving the value of a certain quality and volume of transmission, it is said to be equal to a certain number of miles of cable. This means that a number of miles stated is such that when standard telephone instruments are used for this distance over no. 19 gauge telephone cable of 0.06 microfarad capacity per mile, the value of transmission would be the same. It is considered that the commercial limit of good transmission is 30 miles of cable. This value can be equated in terms of any other kind of circuit: one mile of cable loss is equivalent to a loss sustained in 16 miles of no. 9 B. & S. copper, and this is generally the standard size of wire used on dispatching circuits.

It will be seen that the line may be 480 miles long before the so-called commercial limit is reached. This is considerably longer than any of the circuits now in use, there being but few over 250 miles in length. There is, however, a surplus of transmission available which can be taken advantage of in arranging circuits to permit a number of operators to listen in at the same time. The loss caused by the selector bridges is almost negligible, the impedence to talking frequency of the Northern Electric Selector being about 50,000 ohms.

For the benefit of those who are not familiar with the term "impedence," it may be stated that in this case it means the opposition which the bridged apparatus offers to high frequency altering voice currents, and it is obtained by the use of iron in the bridged apparatus. This, represented in loss value when 40 selectors are across the line, is equivalent to about one mile of cable.

In the first few installations of telephone train dispatching, the talking circuit was the standard local battery circuit, which is schematically shown in fig. 6. It will be seen that during a conversation the condenser, receiver and secondary of the induction coil are in series across the line. The resistance of the receiver is 70 ohms and of the induction coil 20 ohms—a 2 microfarad condenser used in series. The total impedence of this circuit to talking frequency is about 600 ohms, about 300 of which are active for receiving purposes. It is obvious, therefore that when a number of sets are bridged across the line at the one time, the joint impedence is very low and the transmission correspondingly difficult between widely separated stations.

The first step toward overcoming this difficulty was to raise the impedence of the bridge by using a different induction coil wound with a low primary winding and a high resistance secondary. This improved matters somewhat as higher resistance bridges produced more even distribution and gave a better outgoing transmission from way stations. Although the dispatcher's voice current was undoubtedly better distributed by the use of this later method, still, due to the fact that the bulk of the impedence was in the secondary of the coils, the receiver having a resistance of only 70 ohms, the transmission gained was very slight.

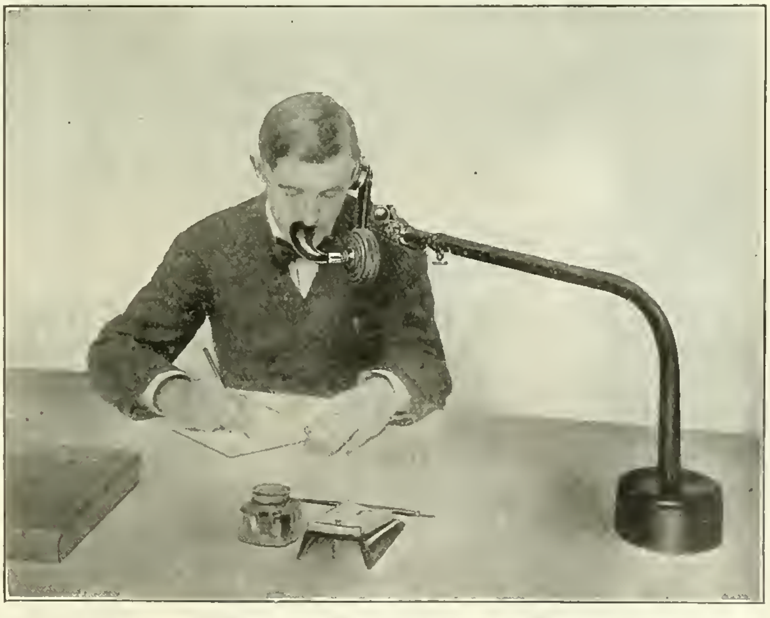

Fig. 7.—Van Aiken Transmitter Arm.

The next method was to maintain the high impedence in the bridge and place as much of this as possible in the receiver. In doing this, however, the high impedence receiver in series with the secondary of induction coil reduced the outgoing transmission to a great extent. It was then decided that the best results, both for receiving and transmitting, would be attained by the installing of a switching arrangement at the way station, so that when the switch was in one position, it offered the best conditions for receiving, and when in the other, the best conditions for transmission.

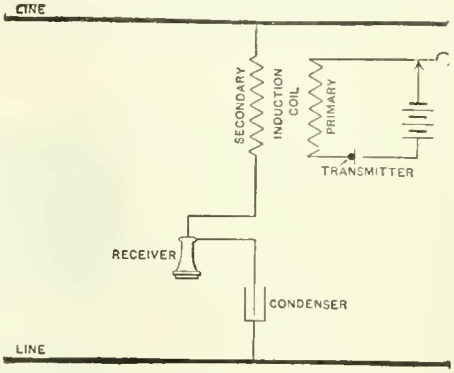

Fig. 6.—Wiring Diagram of Original Method.

By referring to fig. 5, it will be seen that there is a non-locking switch device located at the way station and in its normal position. The bridge across the line consists of a 700-ohm receiver and 1-M.F. condenser. The impedence of this receiver, is about 2,500 ohms, and as the total impedence of the bridge is all in the receiver, it is effective for receiving purposes. When the way station operator wishes to talk, he depresses the switch apparatus, which in some cases is in the form of a non-locking key on his table, and in other cases a foot switch resting on the floor. This operation closes his transmitter battery and connects the secondary of his induction coil to the line. The voice currents have a path directly across the line in series with the condenser. In addition to this operation, there is also a retardation coil shunted in series with the receiver. This retardation coil has about 6000-ohms impedence and is placed in series with the receiver, in order that the dispatcher may break in if it is necessary for him to interrupt the operator while talking.

By referring back to fig. 5, it will be noticed that the dispatcher's circuit is somewhat different from that used at the

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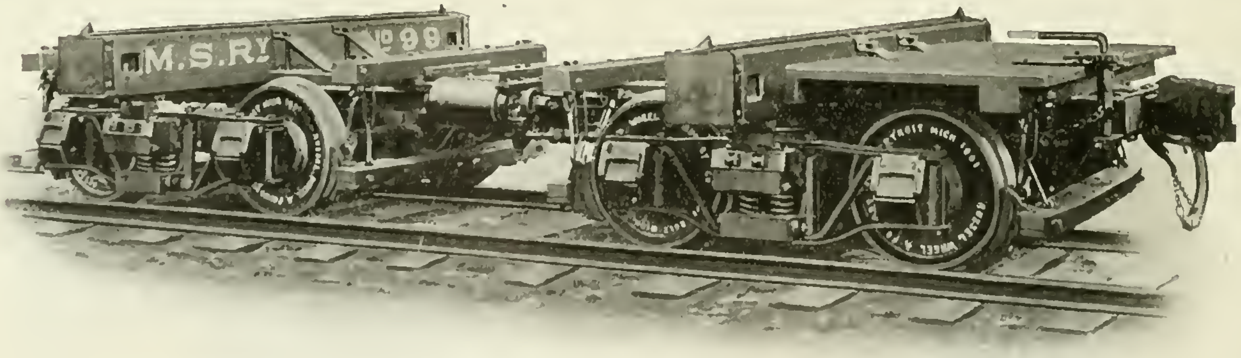

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way stations. He must be on the line at all times, and the transmission and receiving of his set must be as good as possible, without resorting to the non-locking push button for talking and listening, as his time is too fully occupied to permit him to use this device. A 70-ohm receiver is used in series with the secondary of the same type induction coil and a 1-microfarad condenser, the impedence of this bridge being 650 ohms, and is the lowest bridge on the line. This arrangement also permits good transmitting.

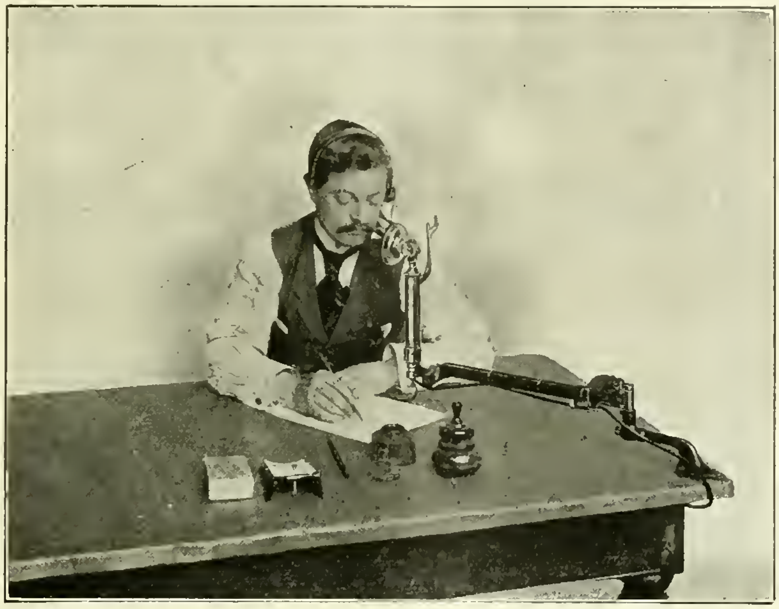


Fig. 8.—Northern Electric Flexiphone Arm for Way Stations.

It may be well here to attempt to describe some of the standard types of telephones used at the way stations, as stated conditions change with each installation and different superintendents of telegraphs have different ideas as to the best apparatus to be used.

In Canada the Canadian Pacific Ry. has adopted the telephone for the movement of trains to the greatest extent, and has approximately 4,500 miles of track operated by telephone. In 85% of its installations it uses the Van Aiken arm. This transmitter was invented by S. L. Van Aiken, of the New York Central Lines, and is so arranged that the transmitter and receiver are fixed on the arm, and the operator upon placing his ear to the receiver has his mouth in line with the transmitter. This arrangement permits the operator to have free use of both hands (fig. 7). The transmitter arm is arranged with an adjustable mouthpiece on transmitter, and adjustable receiver to allow for the different positions it might be placed in. There is a commutator arrangement on this arm so that when the arm is moved to talking position, certain springs cut it in for use. When shoved away from the operator, it is cut off the line entirely.

A foot switch (fig. 11) is generally used to close the transmitter battery. This is used to prevent waste of battery and all unnecessary noise entering in on the line, and also carries out the above stated high efficiency transmission scheme.

On a few of the C.P.R. western circuits, what is known as a flexiphone transmitter arm is used. To cite one instance. There is a line from Moose Jaw to Broadview, dispatcher located at Moose Jaw, a distance of 130 miles, with 18 way stations equipped. This set, fig. 8, consists of a desk stand stem attached to the arm which can be raised or lowered so that it can be used seated or standing, and in addition can be rotated in a horizontal plane.

The Northern Electric no. 1020 type arm, fig. 9, is another transmitter arm which is very simple, and is equipped with a head receiver, thus giving the operator free use of both hands to copy his train orders.

A key operated by hand is usually provided to close or open the transmitter battery, and if this is not desired a foot switch can be used. This type of arm is installed by the Grand Trunk Railway on two circuits on its Northern division, viz., North Parkdale to Burlington Jct., dispatcher located at Allandale, a distance of 145 miles, with 23 way stations equipped. Also Allandale to Nipissing, dispatcher located at Allandale, a distance of 160 miles, with 22 way stations equipped. The Michigan Central Rd. has also adopted this arm and has one circuit in Canada equipped from Windsor to St. Thomas.

The desk stand, fig. 10, arranged for a head receiver, has also been used, principally because of its low price. It has, however, the objection of being subject to injury by being knocked off the desk, but again has the advantage of being located so as to be convenient to a number of persons.

The apparatus used at way stations and dispatcher's office having been described, and in the next article the operation and construction of the various selectors will be taken up.

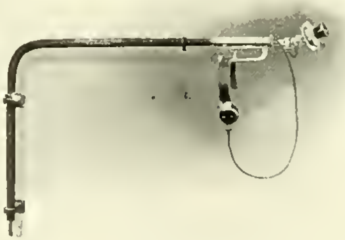


Fig. 9.—Northern Electric Transmitter Arm.

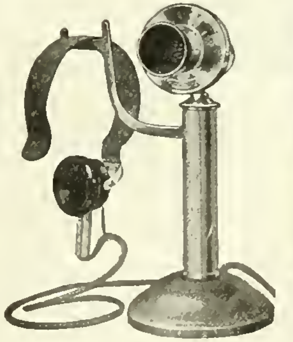


Fig. 10.—Special Northern Electric Desk Stand.

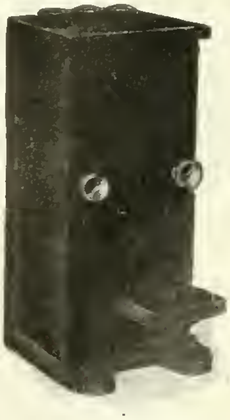


Fig. 11.—Foot Switch.

◆

The Grand Trunk Ry. commenced running trains between Montreal and Toronto on October 27, 1856.

Railways and Allied Associations, Clubs, Etc.

The names of persons given below are those of the secretaries.

Canadian Car Service Bureau, J. E. Duval, 401 St. Nicholas Building, Montreal.

Canadian Freight Association, T Marshall, Union Station, Toronto.

Canadian Freight Association, (Western Lines), W. E. Campbell, 101 Bon Accord Building, Winnipeg.

Canadian Railway Club, J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday each month, 8.30 p.m., except June, July and August.

Canadian Society of Civil Engineers, C. H. McLeod, 413 Dorchester St., west, Montreal.

Canadian Street Railway Association, Acton Burrows, 70 Bond Street, Toronto.

Canadian Ticket Agents' Association, E. de la Hooke, London, Ont.

Central Railway and Engineering Club of Canada, C. L. Worth, 409 Union Station, Toronto. Meetings at Toronto 3rd Tuesday each month, except June, July and August.

Eastern Canadian Passenger Association, G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal, R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto, R. B. Wolsey, 94 King St. west, Toronto.

Nova Scotia Society of Engineers, J Lorn Allan, Halifax and Eastern Ry., Dartmouth, N.S.

Quebec Transportation Club, J. S. Blanchet, Quebec.

Western Canada Railway Club, W. H. Rosevear, 25½ Princess St., Winnipeg. Meetings at Winnipeg 2nd Monday each month, except June, July and August.

◆

A Railway to Hudson Bay.

The contracting plant of the J. D. McArthur Co., of Winnipeg, has been moved from the Winnipeg-Lake Superior Jct.. section of the National Transcontinental Ry. to Pas Mission, Sask.. and work has been started on the northern bank of the Saskatchewan River, on the line towards Hudson Bay. The section under contract extends from Pas Mission to Thicket Portage, 185 miles.

Tenders will be received by the Department of Railways to Oct. 15, for 30,000 tons of 80 lb. steel rails, together with the necessary fastenings for the same. (Sept., pg. 843.)

THE STEEL COMPANY OF CANADA, LIMITED

Open Hearth Steel Products

R. R. Axles Splice Bars Tie Plates

Track Spikes Bolts and Nuts

BAR STEEL--Rounds, Squares and Flats

Marine and Railroad Forgings

Copper Wire and Cable

Wrought Pipe Nails Screws

DISTRICT SALES OFFICES:

HAMILTON TORONTO MONTREAL WINNIPEG

W. A. MacLennan, Vancouver, B.C.
H. G. Rogers, St. John, N.B.
J. B. H. Rickaby, Victoria, B.C.
Geo. D. Hatfield, Halifax, N.S.

Crossing Signals,
Crossing Gates,
Train Order Signals,
Corning Lenses,
Bonding Drills,
etc., etc.

The Dominion Board of Railway Commissioners

have endorsed our illuminated highway signals as good protection for level crossings.

Regarding Motor Cars — The best pays in the long RUN — and that's the kind of a RUN a car is supposed to be built for— and that's the kind you get in a BUDA car.

We carry Standard Signal and Railway Supplies.

THE WHYTE RAILWAY SIGNAL COMPANY
LIMITED
2 MANNING ARCADE ANNEX, TORONTO.

BUDA
Inspection
Hand Push Cars,
Velocipedes,
Jacks
for all purposes,
Switches,
Stands,
Frogs,
Track Drills,
etc., etc.

Canadian Pacific Railway Co's Annual Report.

Following is the 30th annual report addressed to shareholders over the signature of the President, Sir Thos. G.

The accounts for the year ended June 30, show the following results:—

Gross earnings		$104,167,808.21
Working expenses		67,467,977.64
Net earnings		$ 36,699,830.57
Net earnings of steamships in excess of amount included in monthly reports		1,118,349.87
		$ 37,818,180.44
Deduct fixed charges		10,011,071.44
Surplus		$ 27,807,109.00
Deduct amount transferred to steamship replacement account	$1,000,000,.00	
Contribution to pension fund	80,000.00	
		1,080,000.00
		$ 26,727,109.00
From this there has been charged a half yearly dividend on preference stock, of 2%, paid April 1.	$1,112,333.33	
And three quarterly dividends on ordinary stock of 1¾% each, paid Dec. 31, 1910, Apr. 1, and June 30, 1911	9,450,000.00	
		$ 10,562,333.33
		$16,164,775.67
From this there has been declared a second half yearly dividend on preference stock, payable Sept. 30,	$1,141,533.31	
And a fourth quarterly dividend on ordinary stock of 1¾%, payable Sept. 30,	3,150,000.00	
		$ 4,291,533.31
Leaving net surplus for the year		$11,873,242.36

In addition to the above dividends on ordinary stock 2½% was paid from special income.

DETAILS OF SPECIAL INCOME FOR YEAR.

Interest on cash proceeds and on deferred payments for land sold	$1,688,170.70
Interest on deposits and loans	1,030,377.88
Interest on C.P.R. 1st mortgage bonds acquired	61,003.66
Interest from Minneapolis, St. Paul & Sault Ste Marie Ry. bonds	159,720.00
Interest from Duluth, South Shore & Atlantic Ry. bonds	150,000.00
Interest from Mineral Range Ry. bonds	50,160.00
Interest from Toronto, Hamilton & Buffalo Ry. bonds	10,840.00
Interest from Kingston & Pembroke Ry. bonds	9,345.00
Interest from Dominion Government bonds	182,500.00
Interest from Ontario Government bonds	48,000.00
Interest from British consols	116,544.28
Interest from Montreal & Atlantic Ry. bonds and on other securities	139,922.40
Dividend on St. John Bridge & Ry. Extension Co. stock	50,000.00
Dividends on Dominion Express Co. stock	160.000.00
Dividends on Minneapolis, St. Paul & S.S.M. Ry. common stock	736,071.00
Dividends on Minneapolis, St. Paul & S.S.M. Ry. preferred stock	368,039.00
Dividends on Alberta Ry. & Irrigation Co. stock	86,162.50
	$5,046,856.42
Transfer of balance of interest from land surplus at June 30, 1910	1,555,348.78
	$6,602,205.20
Less—payments to shareholders in dividends: October 1, 1910 to June, 30, 1911	3,9000,000.00
	$2,702,205.20
From this a dividend has been declared, payable Sept. 30, 1911	1,350,000.00
Leaving net surplus carried forward	$1,352,205.20

The working expenses for the year were 64.77% of gross earnings, and the net earnings, 35.23%, as compared with 64.38 and 35.62% respectively in 1910.

Four per cent. consolidated debenture stock to the amount of £1,263,667 was created and sold, and of the proceeds £745,489 was applied to the construction of authorized branch lines; £194,178 to the acquisition of St. Maurice Valley Ry. Co. bonds, the interest on which had been guaranteed by your company; £134,000 was used to acquire a like amount of your company's first mortgage 5% bonds, and with the balance, £190,000, the outstanding Canada Central second mortgage 6% bonds were purchased and retired.

Four per cent. preference stock to the amount of £300,000 was created and sold, the proceeds being used to meet capital expenditures.

Your guarantee of interest was endorsed on 4% consolidated bonds of the Minneapolis, St. Paul and Sault Ste. Marie Ry. Co., to the amount of $3,600,000, issued and sold to meet the cost of constructing 180 miles of railway added to that company's system.

The sales of agricultural land during the year aggregated 650,874 acres for $9,558,427.17, being an average of $14.69 an acre. Included in this area are 19,097 acres of irrigated land, which brought $33.63 an acre, so that the average price of the balance of the land was $14.11 an acre.

The Hudson's Bay Co. had parcels of land scattered throughout the irrigation belt, and, in order that you might control the entire belt and thus receive the full advantage of your expenditures on irrigation, it was decided to acquire these lands, about 102,174 acres, at $13.50 an acre. All these lands will be sold at a substantial profit.

Believing that it would be in the interest of everybody concerned, your directors proposed to the Alberta Ry. and Irrigation Co., in which you owned a controlling interest, an arrangement whereby, in consideration of a lease of their railway lines and a transfer to your company of their coal mines, lands and other assets, your company would guarantee the interest on its outstanding debenture stock ($3,250,000), and an annual dividend of 6% on its share capital during the life of the lease, and coupled with this proposed arrangement was your company's offer to purchase all of the outstanding shares of the Alberta Company's capital stock at 150 and accrued dividend. The proposition was accepted, an agreement and lease were approved by the shareholders of the Alberta Company, and will be submitted for your sanction. Since the agreement was made a large part of the outstanding stock has been acquired, and you now hold all the shares excepting about 2,000 out of a total of 32,500 shares. Worked in conjunction with your system, this line will not only be profitable in itself but will be useful in connection with future extensions in southern Alberta.

By the construction of a railway 16.2 miles long between Hamilton and Guelph Jct., Ont., the distance from Hamilton to points on your lines in western Ontario will be shortened very materially, and, therefore, subject to your approval, an agreement has been made with the South Ontario Pacific Ry. Co. for the construction of the line, and for a lease of it to your company on its completion for 999 years at a rental equivalent to 4% per annum on the bonds of the South Ontario Pacific Ry. Co., issued with the consent of your company.

In order to provide transportation facilities for incoming settlers it is very desirable that the following branch lines in Saskatchewan and Alberta should be constructed without unnecessary delay; Moose Jaw southwest, 35 miles, Kerrobert northeast, 25 miles, Weyburn branch extension, 21 miles, Estevan branch, 55 miles, Swift Current southeast, 45 miles, Swift Current northwest, 35 miles, Wilkie northwest 32 miles, Wilkie, southeast, 31 miles, Kininvie branch extension, 37 miles, Bassano to Kininvie Jct., 36 miles, Kipp branch extension, 27 miles, and you will be asked to authorize the sale of a sufficient amount of 4% consolidated debenture stock for the purpose.

An order has been placed with the Fairfield Shipbuilding Co., of Glasgow, for two steamships, 570 ft. long and 68 ft. beam, with a speed of 18 knots an hour, to supplement the fleet now engaged in the Pacific trade between Vancouver, Yokohama and Hong Kong. The approximate cost will be £440,000 each and they will be delivered early in 1913.

During the year 103 locomotives, 204 passenger cars and 3,808 freight cars were added to your rolling stock equipment, at a cost of about $9,000,000, and there are orders outstanding for cars and locomotives to the value of $7,000,000 that are expected to be available for the autumn traffic.

The work of enlarging your terminal yards and buildings, providing additional shops and machinery, laying many miles of new passing tracks, extending your telegraph lines, and of generally improving the standard of your property and operating facilities to meet the requirements of the traffic, continues to have the earnest attention of your directors, the amount expended for these purposes during the year aggregating $18,000,000.

The double track between Winnipeg and Brandon is nearing completion, and it is evident that a second track must be laid on some portions of the main line between Brandon and Calgary in the near future.

You will have observed that in this annual report the earnings and expenses of your railway and steamship lines are shown together, and that the revenue from other sources is given in a separate statement. This is in accordance with the policy outlined by your directors in the circular letter of March 15.

Your directors report with sincere regret the death at Nice in April, of their esteemed colleague and friend, Hon. L. J. Forget. He had been a member of the board since 1906, and always displayed a keen and intelligent interest in the company's affairs. H. S. Holt, of Montreal, was elected a director to fill the vacancy caused by Senator Forget's death.

The undermentioned directors will retire from office at the approaching annual meeting, and are eligible for reelection: Sir William C. Van Horne, R. B. Angus, E. B. Osler, H. S. Holt.

CONDENSED BALANCE SHEET..

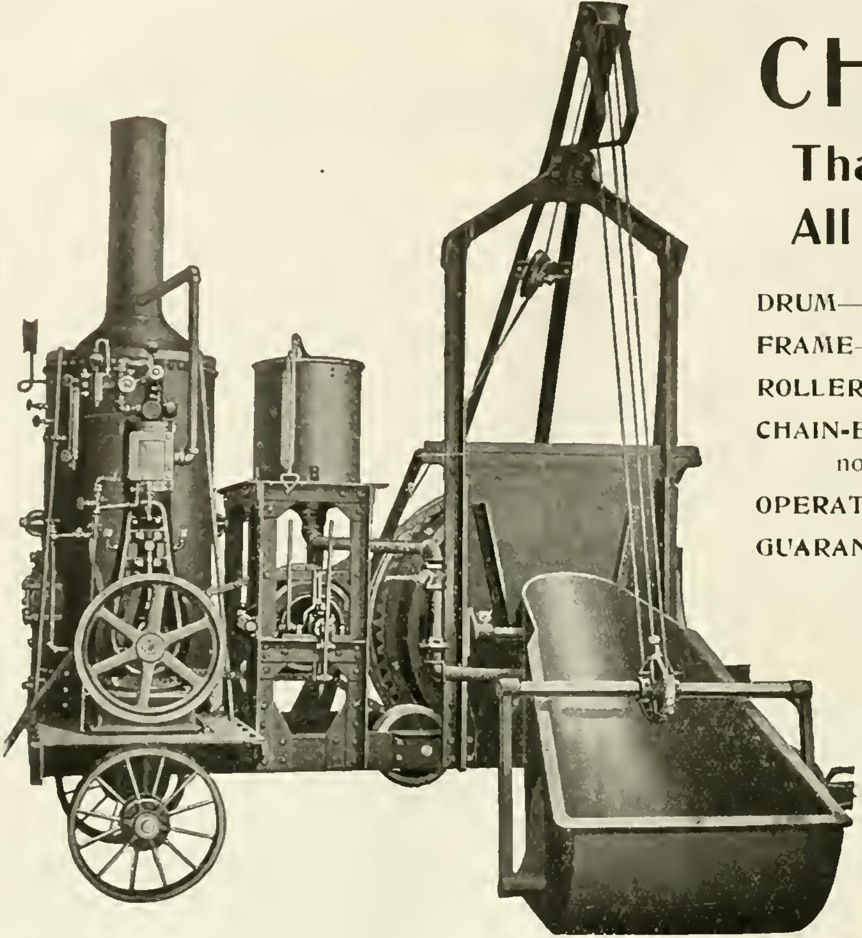
ASSETS.

Railway and equipment		$343,595,230.24
Ocean, lake and river steamships		19,679,673.54
Acquired securities (cost):		75,979,653.19
Properties held in trust for company		6,180,692.76
Deferred payments on land and town site sales		34,116,420.82
Advances to lines under construction		8,996,903.63
Advances and investments		9,637,202.18
Material and supplies on hand		11,191,254.01
Current assets:		
Agents' and conductors' balances	$2,367,534.47	
Net traffic balances	261,049.38	
Miscellaneous accounts receivable	5,421,315.51	
		8,049,899.36
Temporarily invested in Government securities		10,088,734.86
Cash in hand		34,371,550.98
		$561,887,215.57

Note.—In addition to above assets, the company owns 7,061.184 acres of land in Manitoba, Saskatchewan and Alberta (average sales past year $14 69 an acre), and 4,427,811 acres in British Columbia.

LIABILITIES.

Capital stock		$180,000,000.00
4% preference stock		57,076,665.70
4% consolidated debenture stock		142,861,462.26
Mortgage bonds:		
First mortgage 5%	$34,998,633.33	
Algoma Br. 1st mortgage	3,650,000.00	
		38,648,633.33



CHAIN BELT

That Better Built Mixer,
All Steel Construction.

DRUM—Cast semi-steel—longer life.
FRAME—Steel channels—no blocking up.
ROLLERS—Chilled semi-steel—no renewing.
CHAIN-BELT DRIVE—Unquestionably better—no more gear troubles.
OPERATION—Fast and perfect—assures capacity.
GUARANTEED—To be right.

WRITE FOR CATALOG No. 39 R.

Dominion Equipment and Supply Company
Canadian Sales Agents,
45-46 Canada Life Bldg. WINNIPEG, MAN.

Why the C. P. R. North Toronto Route to Ottawa and Montreal is the Logical One

The train leaves as follows:

Leave North Parkdale	9.15 p.m.	Arrive Ottawa, 6.50 a.m.
Leave West Toronto	9.30 p.m.	Arrive Montreal 7.00 a.m.
Arrive North Toronto	9.40 p.m.	Daily except Sunday.
Leave North Toronto	10.00 p.m.	Will Stop at Westmount.

¶ The residents of Toronto are adjacent to either North Parkdale, West Toronto or North Toronto stations, same being easily accessible and closer to residential districts.

¶ The North Toronto route is over an hour faster and overcomes a long hill climb for the train out of Toronto, obviating any inconvenience and ensuring early arrival at Montreal and Ottawa.

¶ The roadbed has been improved till it is unexcelled in Canada.

¶ The equipment is "Canadian Pacific Standard," a synonym for the "best" and attentive porters, non-obsequious, ensure efficient service.

SLEEPING CAR SPACE HELD

Toronto City Office, 16 King St. East

North Toronto Station King Edward Hotel West Toronto Station

Current liabilities:		
Audited vouchers	$ 8,581,511.96	
Pay rolls	4,789,834.48	
Miscellaneous accounts payable	3,832,305.09	
		17,203,651.53
Interest on funded debt and rental leased lines.		
Coupons due July 1, and including coupons overdue not presented	$ 1,207,164.50	
Accrued fixed charges	185,152.00	
		1,392,316.50
Equipment obligations		1,200,000.00
Equipment replacement fund		2,658,363.75
Steamship replacement fund		5,040,666.67
Appropriation for additions and improvements		7,119,285.64
Reserve fund for contingencies		4,052,906.33
Lands and town sites sales		49,258,770.42
Surplus		55,374,493.44
		$561,887,215.57

FIXED CHARGES FOR YEAR ENDED JUNE 30

1st mortgage bonds 5% due July 1, 1915		$1,749,931.66
Canada Central Ry. 2nd mortgage 6% bonds, (redeemed Nov. 1; 1910) interest 4 months		19,466.67
St. Lawrence & Ottawa Ry. 4% 1st mortgage bonds		38,933.34
Man. So. West Colzn. Ry. 1st mortgage 5% bonds due June 1, 1934		127,200.00
Toronto, Grey & Bruce Ry. rental		140,000.00
Ontario & Quebec Ry. debenture stock 5%		975,129.56
Ontario & Quebec Ry. ordinary stock 6%		120,000.00
Atlantic & North West Ry. 1st mortgage bonds due Jan. 1 1937		323,633.34
Algoma branch 5% 1st mortgage bonds due July 1, 1937		182,500.00
New Brunswick Southern Ry. 1st mortgage bonds, 3%, 6 months		7,500.00
Rental, Calgary & Edmonton Ry.		138,357.60
" Farnham to Brigham Jct		1,400.00
" Mattawamkeag to Vanceboro.		23,800.00
" New Brunswick Ry. system		372,829.74
" Terminals at Toronto		26,494.29
" Terminals at Hamilton		33,812.80
" Hamilton Jct. to Toronto		42,062.35
" St. Stephen & Milltown Ry.		2,050.00
" St. Marys & West. Ontario Ry.		3,235.14
" Joliette & Brandon Ry.		5,000.00
" Lachine Canal Branch		939.96
Interest on Montreal & Western Ry.		16,039.60
Interest on equipment obligations		71,866.67
4% CONSOLIDATED DEBENTURE STOCK.		
Interest from July 1, 1910	$5,504,560.74	
Interest from Jan. 1, 1911	92,327.98	
	5,596,888.72	
Less received from subsidy Northern Colonization Ry.	8,000.00	5,588,888.72
		$10,011,071.44

EXPENDITURES ON CONSTRUCTION—ACQUIRED AND BRANCH LINES.

Moosejaw branch	$1,900,544.90
Craven-Bulyea branch	316,685.33
Virden-McAuley branch	6,797.09
Stonewall branch extension	86,101.05
Lauder branch	89,553.66
Weyburn-Lethbridge branch	371,880.10
Langdon branch	127,041.66
Kipp-Aldersyde branch	296,084.74
Kininvie branch	443,382.05
Regina-Colonsay branch	1,260,913.44
Estevan-Forward branch	65,097.99
Waldo-Galloway branch	32,896.20
Moosejaw S.W. branch	50,566.48
Wilkie N.W. Branch	2,238.07
Kerrobert N.E. branch	14,699.70
Wilkie-Anglia branch	50,175.56
Swift Current S.E. branch	89,964.81
Swift Current N.W. branch	71,715.48
Bassano branch	8,124.57
Surveys of projected lines	164,615.59
	$5,449,078.47

EXPENDITURE ON ADDITIONS AND IMPROVEENTS.

MAIN LINE.

Quebec to Bonfield—			
Additional sidings, buildings, stations and yards	$ 39,959.14		
Permanent bridges and improvements of line	329,344.04		
Right of way	174,108.93		
			$543,412.11
Montreal Terminals			782,728.24
Windsor St. station extension			472,359.35
Double track bridge over St. Lawrence River			477,870.23
Bonfield to Port Arthur—			
Additional sidings, buildings, stations and yards	318,098.01		
Permanent bridges and improvements of line	495,797.97		
Wharves, docks and warehouses	45.00		
Telephone dispatching equipment	39,167.17		
			853,108.15
Port Arthur to Field—			
Additional sidings, buildings, stations and yards	1,880,513.42		
Permanent bridges and improvements of line	571,809.25		
Winnipeg station and hotel	15.514.45		
Winnipeg terminals	301,487.27		
Wharves, docks and warehouses	16,177.06		
Double tracking	737,825.97		
Telephone dispatching equipment	57,007.42		
Right of way	2,111.10		
			3,582,475.94
Field to Vancouver—			
Additional sidings, buildings, stations and yards	1,067,761.20		
Permanent bridges and improvements of line	694,876.27		
Field Hill revision of line	60,307.47		
Wharves, docks and warehouses	18,832.98		
Right of way	2,790.10		
Vancouver terminals	398,144.29		
			2,242,712.31

BRANCH LINES.

South Western branch		$45,823.24	
Stonewall branch		14,593.66	
Selkirk branch		30,481.95	
Emerson branch		2,953.69	
Nakusp and Slocan branch		27,484.54	
Revelstoke & Arrow Lake br.		1,026.25	
Snowflake branch		Cr. 201.65	
Waskada branch		3,315.36	
St. Lin branch		1,007.81	
St. Eustache branch		417.56	
Lake Timiskaming branch		60,542.00	
McGregor branch		1,816.95	
Mission branch		24,791.88	
Arcola-Regina branch		21,462.25	
North Star branch		4,589.42	
Lac du Bonnet branch		1,461.32	
Wolseley-Reston branch		14,543.25	
Lachine Canal branch		9,960.00	
Toronto-Sudbury line		425.558.36	
Pheasant Hills branch		584,612.44	
Souris Branch—			
Additional sidings, buildings, stations and yards		199,868.64	
Permanent bridges and improvements of line		229,882.06	
Right of way		70.09	
Algoma Branch—			
Additional sidings, buildings, stations and yards		8,019.81	
Permanent bridges and improvements of line		98,898.72	
Crow's Nest Pass Branch—			
Additional sidings, buildings, stations and yards	246,439.99		
Permanent bridges and improvements of line	51,295.14		
Right of way	490.32		
		298,225.45	
Crow's Nest Pass Branch—			
McLeod-Lethbridge deviation		47,749.12	
British Columbia Southern Ry—			
Additional sidings, buildings, stations and yards	164,932.35		
Permanent bridges and improvements of line	234,647.39		
Right of way	2,161.87		
Telephone dispatching equipment	1,150.13		
Balfour extension	16,289.75		
Yahk branch	3,270.90	422,452.39	
			2,581,406.56
Telegraph extensions and additions			224,590.01
Office building, Toronto			164,345.00
Rented and temporary sidings			178,463.07
Total main line and branches			$12,103,470.97

RECEIPTS.

Cash in hand, June 30, 1910		$46,165,817.05
Temporarily invested in Government securities		10,088,734.86
Surplus revenue	$26.727,109.00	
Special income	5,046,856.42	
		31,773,965.42
Land Department—		
Lands and townsites:		
Net proceeds of sales	8,448,516.04	
Collection of deferred payments on previous year's sales	4,593,945.47	
	13,042,461.51	
Less cost of lands purchased from Hudson's Bay Co.	1,396,591.54	
	11,645,869.97	
Less amounts remaining in deferred payments on year's sales	10,768,253.24	
		877,616.73
Properties held in trust for company—		
Amount received from sales of properties	901,633.66	
Less payments	608,481.47	
		293,152.19
Capital Stock—		
Subscription to $30,000,000 additional ordinary stock—Remaining instalments and additional premiums on unsubscribed stock sold		14,007,984.69
4% preference stock, realized from issue £300,000		1,438,111.58
Consolidated debenture stock, realized from issue £1,263,667		6,273,611.57
		$110,918,994.09
Deduct—		
Advances to lines under construction	8,996,903.63	
Advances and investments	9,637,202.18	
Current assets	8,049,899.36	
	26,684,005.17	
Less amt. at June 30, 1910	19,867,914.21	
		6,816,090.96
		$104,102,903.13

EXPENDITURES.

Dividends on preference stock—		
2% paid Oct. 1, 1910	$1.112,333.33	
2% paid Apr. 1, 1911	1,112,333.33	
		$2,224,666.66
Dividends on ordinary stock—		
4% paid Oct. 1, 1910	6,000,000.00	
2% paid Dec. 31, 1910	3,600,000.00	
2½% paid Apr. 1, 1911	4,500,000.00	
2½% paid June 30, 1911	4,500,000.00	
		18,600,000.00
Construction of acquired and branch lines		5,449,078.47
Additions and improvements, main line and branches		12,103,470.97
Additions and improvements, leased and acquired lines		5,975,813.81
Rolling stock, shops and machinery		9,656,683.24
Ocean, lake and river steamships—		
Additional steamships and appurtenances for Pacific Coast service	910,591.42	
Additional river steamers and barges	260,221.57	
Extension to steamship Alberta	43,699.17	
		1,219,512.16
Canada Central Ry. 2nd mortgage bonds redeemed		973.333.33
Securities acquired—		
C.P.R. 1st mortgage bonds	$ 678,414.59	
Kingston & Pembroke Ry. 1st mortgage bonds	16,460.00	
St. Maurice Valley Ry. 1st mortgage bonds	945,000.00	
Dominion Atlantic Ry. stock	1,066,512.03	
Kingston & Pembroke Ry. stock	1,075.00	
Lindsay, Bobcaygeon & Pontypool Ry. stock	166,000.00	
Toronto, Hamilton & Buffalo Ry. 2nd mortgage bonds	237,125.00	
Alberta Ry. & Irrigation Co. Stock	1,853,382.12	
	4,963,968.74	
Less Canada Central Ry. 2nd mortgage bonds redeemed.	48,666.67	
	$4,915,302.07	
Subscription to Minneapolis, St. Paul & Sault Ste. Marie Ry. ordinary and pref. stock	1,987,380.00	
		6,902.682.07
Payment of equipment obligations		160,000.00
Increase in material and supplies on hand		242,786.96
		63.508,027.67
Deudct—		
Increase in current liabilities		3,865,410.38
		59,642,617.29
Temporarily invested in Government securities		10,088,734.86
Cash in hand		34,371,550.98
		$104,102,903.13

DETAILS OF EARNINGS FOR THE YEAR.

From passengers	$28,165,556.41
From freight	65,645,227.59
From mails	832,733.97
From sleeping cars, express, telegraph and miscellaneous	9,524,290.24
Total	$104,167,808.21

DETAILS OF WORKING EXPENSES FOR THE YEAR.

Transportation expenses	$31,537,518.82
Maintenance of way and structures	15,561,086.29
Maintenance of equipment	12.056,260.11
Traffic expenses	2,623 280.98
Parlor and sleeping car expenses	731,738.62
Expenses of lake and river steamers	989,768.74
General expenses	2,771,425.00
Commercial telegraph	1,196,899.08
Total	$67,467,977.64

ADDITIONAL SAFETY AND ECONOMY IN

TRACK MAINTENANCE

has been proved by the use of Continuous, Weber and Wolhaupter base-supported rail joints—after fifteen (15) years' service, having a record of over **50,000 miles in use**—the extent of which is evidence of their excellence. Made in Canada.

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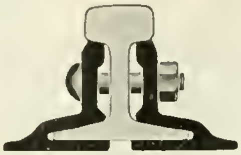
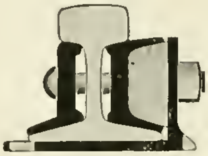
Paris, 1900;
Buffalo, 1901; St. Louis, 1904.



Continuous Joint.

Over 50,000 miles in use.



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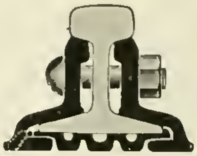

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2 RECTOR STREET, NEW YORK

Philadelphia St.Louis Washington Chicago Boston Montrael San Francisco

EQUIPMENT AT JUNE 30.

Locomotives	1,637
First and second class passenger cars, baggage cars, and colonist sleeping cars	1,689
First class sleeping, dining and cafe cars.	318
Parlor cars and paymasters' cars	67
Freight and cattle cars (all kinds)	52,602
Conductors' vans	923
Boarding, tool and auxiliary cars and steam shovels.	3,896

OCEAN, LAKE AND RIVER STEAMERS.

Atlantic Service.—Empress of Britain, Empress of Ireland, Lake Champlain, Lake Erie, Lake Manitoba, Lake Michigan, Milwaukee, Montcalm, Montfort, Montreal, Montrose, Monmouth, Montezuma, Mount Royal, Mount Temple, Cruizer.

Pacific Service.—Empress of China, Empress of India, Empress of Japan, Monteagle.

Pacific Coast Service.—Amur, Beaver, Charmer, City of Nanaimo, Czar, Joan, Nanoose, Otter, Princess Adelaide, Princess Alice, Princess Beatrice, Princess Charlotte, Princess Ena, Princess May, Princess Mary, Princess Royal, Princess Victoria, Tees, Transfer No. 1, Transfer No. 2, Queen City.

Upper Lake Service.—Alberta, Assiniboia, Keewatin, Manitoba, Athabasca.

British Columbia Lake and River Service.—Aberdeen, Bonnington, Columbia, Castlegar, Hosmer, Kaleden, Kokanee, Kootenay, Kuskanook, Minto, Moyie, Nelson, Okanagan, Proctor, Rossland, Sandon, Slocan, Valhalla, Ymir, York, Whatshan.

Ferry Service.—Michigan, Ontario.

DETAILS OF FREIGHT FORWARDED.

	1911.	1910.
Flour, bbls.	8,469,744	7,489,812
Grain, bush	111,169,982	112,795,345
Live stock, head	1,567,665	1,381,183
Lumber, ft.	2,441,007,107	2,292,821,963
Firewood, cords	298,345	280,878
Manufactured articles, tons	5,759,344	5,468,548
All other articles, tons	8,971,037	7,567,052

FREIGHT TRAFFIC.

	1911.	1910.
No. tons carried	22,536,214	20,551,368
No. tons carried 1 mile	8,062,102,013	7,772,012,635
Earnings per ton per mile	0.81 cts.	0.77 cts.

PASSENGER TRAFFIC.

	1911.	1910.
No. passengers carried	12,080,150	11,172,891
No. passengers carried 1 mile	1,457,332,932	1,355,266,088
Earnings per passenger per mile	1.93 cts.	1.83 cts.

TRAFFIC STATISTICS.

Not including Lake and River Steamers.

Train Mileage.

	1911.	1910.
Passenger trains	17,393,532	16,119,543
Freight trains	21,701,893	20,574,576
Mixed trains	1,680,420	1,672,993
Total trains	40,775,846	38,367,112
Car Mileage.		
Passenger—		
Coaches and p., d. and s.	89,404,332	82,472,864
Combination	2,812,227	2,833,703
Baggage, mail and express	38,487,654	34,158,162
Total passenger cars	130,704,213	119,461,729
Freight—		
Loaded	460,739,921	433,498,575
Empty	139,455,186	118,134,609
Caboose	23,521,772	22,374,512
Total freight cars	623,716.879	574,007,696
Passenger cars per traffic train mile	6.85	6.72
Freight cars per traffic train mile	26.67	25.80
Passenger Traffic.		
Passengers carried (earning revenue)	11,928,943	11,050,924
Passengers carried (earning revenue) 1 mile	1,440,649,164	1,341,255,609
Passengers carried (earning revenue) 1 mile per mile of road	139,297	133,080
Average journey per passenger miles	120.77	121.37
Average amount received per passenger $	2.31	2.20
Average amount received per passenger mile cts.	1.92	1.81
Average number of passengers per train mile	75.53	75.38
Average nnmber of passengers per car mile	15.62	15.72
Revenue from passengers per passeng carer mile cts.	29.91	28.47
Total passenger train earnings per train mile $	1.73	1.64
Total passenger train earnings per mile of road $	3,197.71	2.902.13
Freight Traffic.		
Tons of revenue freight carried one mile	7,859,966,837	7,569,824,332
Tons of non-revenue freight carried one mile	1,241,451,628	1,110,379,421
Total tons (all classes) freight carried 1 mile	9,101.418.465	8,680,203,753
Tons of revenue freight carried 1 mile per mile of road	759,983	751,079
Tons of non-revenue freight carried 1 mile per mile of road	120,036	110.172
Total tons (all classes) freight carried mile per mile of road	880,019	861,251
Average amount received per ton per mile of revenue freight cts.	0.819	0.778
Average number of tons of revenue freight per train mile	336.16	340.25
Average number of tons of non-revenue freight per train mile	53.09	49.91
Average number of tons of (all classes) freight per train mile	389.25	390.16
Average number of tons of revenue freight per loaded car mile	17.06	17.46
Average number of tons of non-revenue freight per loaded car mile	2.69	2.56
Average number of tons of (all classes) freight per loaded car mile	19.75	20.02
Freight train earnings per loaded car mile cts.	13.97	13.59
Freight train earnings per train mile $	2.75	2.65
Freight train earnings per mile of road $	6,222.89	5,844.47

STATEMENT OF PENSION DEPARTMENT TO JUNE 30.

Balance at June 30, 1910	$687,104.26
Amount contributed by company for year	80,000.00
Amount received as interest	38,260.12
	$805,364.38
Payment of pension allowances for year	134,876.92
Balance in cash and investments	$670,487.46

NUMBER ON PENSION ROLL AT JUNE 30.

Under 60 years of age	64
Between 60 and 70 years of age	255
Over 70 years of age	173
Total	492

◆

How to Conduct a Ticket Office.

By W. R. Russell, Agent, Canadian Northern Ry., Humbolt, Sask.

The three essentials, important in the highest degree, necessary for the proper conducting of a ticket office, are, first, courtesy; second, accuracy; third, cleanliness. The question, "How to Conduct a Ticket Office," is perhaps one of the most difficult questions for passenger traffic officials to solve at present. Railways are classed as public servants, and rightly so, and I am sorry to say too many ticket agents do not realize this important fact, by not being courteous to all who are patrons of the company they represent. No doubt many ask what we consider very foolish questions, but we should remember that we have the experience, which they have not, and should therefore try and give them a courteous reply, which would not convey the idea that the question was considered foolish or at all out of the ordinary. Nothing will turn a prospective traveller away more quickly than a crusty reply, or being uncivil. They have feelings as well as we have. Put yourself in their places.

Accuracy. See that you have the correct fare made up before you give your passenger the rate. It is annoying to you as well as to them if you have to change the rate later on when you find you have made a mistake. Get your time cards down, study them, get the route from the passenger, the way he or she requires to travel; then get busy and give the particulars as to changing and time of trains on the different lines, and any other information that would naturally come up on the route. No doubt you have travelled; give them the benefit of your experience. Finally, if you are issuing coupon tickets, go over it very carefully before it is handed to your passenger. If necessary go over each coupon separately to see that you have included transfers where necessary and in the proper place.

Cleanliness is one of the very best assets you can have in your office. Have your counter clean, your pen and ink wells spotless; do not use blotting paper until it will not absorb the ink, and, above all, keep yourself as clean as you possibly can. Dress well, it counts in the end, and don't forget it.

I will give you a few points as to how a ticket agent can assist the freight traffic. If you have followed the first part of this article, namely, courtesy, you can do so, in this way: A commercial traveller comes to the wicket; you know he is a commercial traveller by the certificate he presents for the ticket. While you are getting his ticket ready bring it around in a casual way as to how he finds business, then if prospects are good, bad or indifferent ask him as to the routing of the goods he has taken orders for. If he is prejudiced against the company you are working for, ask him to give you the routing, and also assure him that you will use your best efforts to get the freight over the road, and give the home company the long haul. After this has been done, refer the matter to the freight agent, if you are in a city, where ticket and freight agents are different men. If you are the freight agent as well as the ticket agent, lose no time in advising your general freight agent, giving him name and address in full of consignor, and consignee, and also probable amount of freight to be moved. It may be small, but if handled properly it will probably increase. The general freight agent will appreciate your efforts; it means increased revenue for his department. Finally, make your railway one to be envied for courtesy, Hang this motto up in the office: "A soft answer turneth away wrath."

Courtesy is a valuable asset for any railway. See that your line has it.

I would like to see all ticket agents who sell coupon tickets become members of the ticket agents' associations, namely, the Canadian Ticket Agents' Association and the International Ticket Agents' Association. I will be pleased to give any prospective member particulars or refer them to the secretaries of the associations.

[We may add that the Secretary of the Canadian Ticket Agents' Association is E. de la Hooke, London, Ont., who will always be pleased, on application, to send full particulars in regard to membership. —Editor.]

◆

Transportation Conventions in 1911.

Oct. 9-13.—American Electric Railway Association, Atlantic City, N.J.

Oct. 10.—Railway Signal Association, Colorado Spring, Col.

Oct. 17-19. — American Railway Bridge and Building Association, St. Louis, Mo.

Oct. 18-19.—American Association of Railway Surgeons, Chicago, Ill.

Oct. 19-21.—American Association of Dining Car Superintendents, Cincinnati, O.

Nov. 6-10.—Association of Railway Electrical Engineers, Chicago, Ill.

Nov. 15.—American Railway Association, Chicago, Ill.

Nov. 17-18.—American Association of Freight Traffic Officers, Cincinnati, O.

Dec. 12-13.—Association of Transportation and Car Accounting Officers, Louisville, Ky.

Dec. 29-30.—American Association of Passenger Agents, Jacksonville, Fla.

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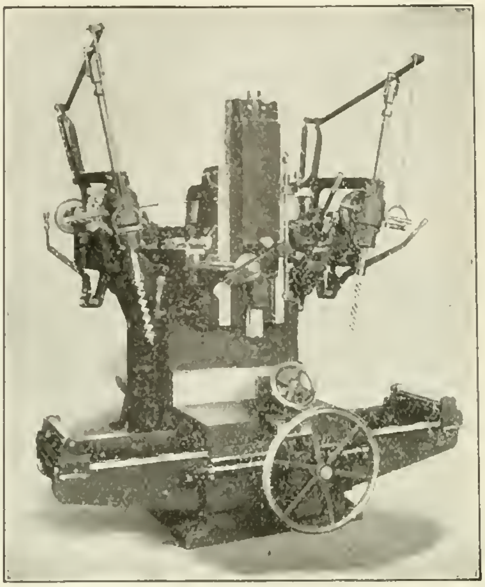

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THROUGH TRAINS between BOSTON (via Boston & Maine R.R. and Cent. Vermont Ry.) MONTREAL, TORONTO and CHICAGO.
THROUGH TRAINS between NEW YORK, TORONTO and CHICAGO via Lehigh Valley R. R. and Niagara Falls.

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W. E. DAVIS, Passenger Traffic Manager, Montreal. G. T. BELL, Asst. Pass. Traffic Manager, MONTREAL.
H. G. ELLIOTT, Gen. Passenger Agent, MONTREAL

Orders by the Board of Railway Commissioners.

Beginning with June, 1904, we have published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the hearing took place and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the date assigned to them.

14384. July 22.—Authorizing C.N.R. to build across public road between secs. 8 and 7, tp. 5, r. 6, w. 2 m.

14385. July 18.—Authorizing British Yukon Ry., British Columbia Yukon Ry., Pacific and Arctic Ry. and Nav. Co., and the Dawson Board of Trade or other shippers affected, to supplement their case by such evidence, etc., as they deem proper; and relieving said companies from filing joint tariffs prescribed under order 2, Jan. 18.

14386. May 16.—Declaring upon application of British American Oil Co., that the legal rate chargeable by C.P.R. on carload shipments of crude oil from Stoy, Ill., to Toronto, was fifth-class joint through rate.

14387. May 16.—Declaring, upon application of Canadian Oil Companies, that the legal rates chargeable on petroleum and its products, in carloads, from certain Ohio and Pennsylvania points to Toronto and other Canadian points were fifth-class joint through rates.

14388. July 27.—Authorizing C.P.R. and G.T.R. to operate interchange track in St. Marys, Ont.

14389. July 25.—General order re track scale weights.

14390. July 15.—Approving locations of eight G.T.P.R. stations in western provinces.

14391. July 27.—Approving C.N.R. standard plan of overhead farm road bridge for its eastern lines.

14392, 14393. July 26.—Authorizing G.T.P. Branch Lines Co., to build its Calgary Branch across highway in s.w. ¼ sec. 18, tp. 31, r. 23, w. 4 m., and across six other highways in Alberta.

14394. July 27.—Approving G.T.P.R. plan showing interlocking signalling system to be installed on bridge over Kyax River, B.C.

14395. July 24. Approving revised location, G.T.P.R. station at Elie.

14396. July 25. — Approving location G.T.P.R. station at Oban, Sask., and rescinding order 13928, in so far as it relates to approval of said station.

14397 to 14399. July 25-15-24.—Approving location of 12 G.T.P. Branch Lines Co.'s stations in western provinces, and of station at Nestor, sec. 13, tp. 48, r. 14.

14400. July 25.—Authorizing Vancouver Power Co. to cross New Westminster and Southern Ry. and Vancouver, Victoria and Eastern Ry. in district lots 2 and 3, group 2, New Westminster district.

14401. July 24.—Approving C.P.R. station at Bridgeford, Sask.

14402. July 27.—Approving revised location of C.P.R. main line, Waldo Branch, between mileage 9.7 and 11.33, lot 132, Kootenay district, B.C.

14403. July 24.—Approving revised location of C.P.R. station at Val Morin, Que.

14404. July 25.—Approving change in location of C.P.R. station at Long Swamp, Que.

14405. July 26.—Authorizing C.P.R. to build spur for J. A. Lougheed in block 65, n.w. of corner of Second St., W., and Ninth Ave., Calgary, Alta.

14406. July 27.—Authorizing Georgian Bay and Seaboard Ry., (C.P.R.) to divert road allowance between Eldon and Mariposa, tps. Ont. at mileage 59.94; and to build across same.

14407. July 27.—Authorizing South Ontario Pacific Ry. to carry its Guelph Jct. to Hamilton Line, at mileage 15.37 from Guelph Jct., across G.T.R. Hamilton to Sarnia Line.

14408. July 27.—Authorizing C.N.R. to open for freight traffic its line between Delisle and MacRorie on its Delisle branch.

14409. July 27.—Approving revised location of C.N.O.R. Toronto-Ottawa Division, east of Sydenham, mileage 164.31 to 165.56 from Toronto.

14410. July 27.—Authorizing C.N.R. to open for freight traffic its line from Calder to Rhein, and limiting speed of trains to 18 miles an hour.

14411. July 27—.Approving revised location of C.N.O.R. Toronto-Ottawa Division, at Buck Lake, Storrington and Bedford tps.

14411 to 14419. July 27-19.—Approving standard mileage tariffs of United States, Canadian, American, National and Pacific Ex. Cos., also tariff for Alberta Ry., and Irrigation Co., and standard mileage tariffs of Great Western, Dominion and Canadian Ex. Cos., to take effect Sept. 1.

14420. July 26. — Authorizing G.T.P. Branch Lines Co., to cross with its Melville Regina branch, C.P.R. main line in east half sec. 23, tp. 17, r. 20, w. 2 m., Sask., interlocking plant to be installed.

14421. July 31.—Relieving Windsor, Essex and Lake Shore Rapid Ry. from speed limitation at North Talbot Road crossing, Sandwich South tp., and from providing watchman there.

14422. July 28.—Authorizing G.T.R. to rebuild its most southerly track crossing Seventh Line Road, Oakville, Ont.

14423. July 27.—Approving location and detail plans of G.T.R. proposed station at Winona, Ont.; authorizing it to build additional track across public road between lots 4 and 5, Saltfleet tp., Ont., and a branch from its yard at Winona, to Hamilton, Grimsby and Beamsville Electric Ry spur

14424. to 14426. July 28.—Authorizing G.T.R. to build sidings into premises of W. S. Morrison, Parry Sound, Ont., J. P. Dupuis, Montreal, and C. C. Morrison, Norwich, Ont.

14427. July 31.—Authorizing G.T.R. to use bridges 15 and 16 over St. Lawrence River at mileage 55.63 and 54.12.

14428. July 28.—Authorizing G.T.R. to build additional track across St. Annes and Bourdages Sts., St. Hyacinthe, Que.

14429. July 31.—Authorizing G.T.R. to rebuild bridge over Trout Creek, near St. Marys station, Ont.

14430 to 14433. July 25.—Temporarily approving agreements of Bell Telephone Co. with Dr. E. J. Foster, La Compagne de Telephone de Beauce, Laurentide Telephone Co., and La Compagnie de Telephone St. Maurice et Champlain,

14434. July 25.—Approving C.N.R. location mileage 255.73 to 260.03 Alta.

14435. July 28.—Authorizing C.N.R. to build across public road between secs. 2 and 11, tp. 60, r. 26, w. 4, m., Alta.

14436. July 27.—Approving C.N.O.R. plan of station building at Shannonville,

14437. July 27.—Approving C.N.O.R. revised location through McGregor and McTavish tps, mileage 15.75 to 24.75, east from Port Arthur and 552.6 to 543.6 from Sudbury.

14438. July 28.—Authorizing C.N.R. to build across public road between secs. 11 and 14, tp. 60, r, 25, w. 4 m., Alta.

14439. July 29.—Approving C.N.O.R. plan of freight yard at Trenton.

14440. July 28.—Authorizing C.N.R. to build across and divert east and west road allowance, secs, 10 and 15, tp. 65, r, 22, w. 4 m., Alta.

14441. July 28.—Authorizing C.P.R. to build bridge 27.34, Cartier subdivision, Lake Superior Division.

14442 to 14445. July 24-31.—Authorizing C.P.R. to build two spurs for city of Winnipeg on lot D.G.S. 50, St. John, spurs for F. B. Hartney, West Toronto, Ont. Nicholson and Bain, and Provincial Lumber and Supply Co., Calgary, Alta.

14446. July 31.—Authorizing C.P.R. to close portion of road allowance along south boundary of sec. 27, tp. 32, r. 17, w. 2. m., Sask., and replace by road diversion, and cross same at mileage 46.01.

14447. July 29.—Authorizing C.P.R. to build bridge at mileage 31.2, Elmira, Ont.

14448. July 31.—Approving plan of clearance between C.P.R. main line and no. 1 track at overhead bridge, Brown St. West, Fort William, Ont.

14449, 14450. July 29-31.—Authorizing C.P.R. to build spurs for city of Toronto, between Perth and Symington Aves., and for Dominion Bridge Company, lot 5, Gloucester tp., Ont.

14451. July 28.—Authorizing C.P.R. to build bridge 62.8 over Thames River, Windsor subdivision, Ontario Division.

14452. July 31.—Authorizing C.N. Alberta Ry., to build across and divert north and south road allowance between secs. 32 and 33, tp. 54, r. 1, w. 5 m.

14453. July 31.—Approving Crows Nest Southern Ry. by-law 7.

14454, 14455. July 24.—Authorizing South Ontario Pacific Ry. (C.P.R.), to cross York Road by undercrossing, at mileage 15.77, Hamilton, to build its Guelph Jct., to Hamilton branch across highways at mileage 0.42 and 1.39, and to divert highway at mileage 1.31, Nassagaweya, tp., Ont.

14456 14457. July 24.—Approving G.T.P.R stations at Exira and Lerose.

14458. July 27.—Authorizing G.T.R. to build connection between its main line from Orillia to Midland and its Wye Bridge cut off, at junction near Old Fort station, Ont.

14459 to 14461. July 29-28.—Approving bylaws of New Westminster Southern Ry., Victoria Terminal Ry. and Ferry Co., and Victoria and Sidney Ry.; authorizing H. A. Jackson to prepare tariffs of freight tolls.

14462. July 11.—Ordering on complaint of St. Pierre village, Que., that foot crossing at St. Alexandre St., over G.T.R. and Montreal Park and Island Ry., to be open for pedestrians only; that foot path from Canadian Car and Foundry Co.'s works be closed; that farm crossing at Second Ave., Lachine parish, and that Simplex St. be made regular highway crossings; that town of Lachine have leave to convert Tenth Ave. into a public crossing, and that crossing at Notre Dame St., Lachine, be converted into regular highway crossing.

14463. Aug. 1.—Authorizing G.T.R. to build bridges at Jameson, Dunn and Dowling Aves., Toronto.

14464. Aug. 1.—Authorizing G.T.R. to build sidings into Golden Lake Lumber Co.'s premises on lot 10, South Algoma tp., Ont.

14465. July 29.—Ordering C.N.O.R. to make certain changes in respect of bridge in East Whitby tp., so as to allow for road traffic and free flow of water of creek.

14466. July 17.—Authorizing C.P.R. to build spurs for A. Bowerman and Cushing Bros., Saskatoon, Sask.

14467. Aug. 3.—Approving G.T.P.R. Cutknife branch, mileage 14.66, to 41.45.

14468. Aug. 3.—Authorizing G.T.P. Branch Lines Co., to carry traffic over its Melville-Regina branch from Edgerly to Regina.

14469. Aug. 4.—Approving C.N.R. location, mileage 49.94 to 60.45, tps. 50-51, r. 20-21, w. 3 m., Sask.

14470. Aug. 2.—Authorizing C.P.R. to build bridge at mileage 95.15, Lake Superior Division.

14471. July 31.—Approving C.N.R. location through tps. 60-66, r. 25-22, w. 4 m., mileage 46.68 to 93.40, Alta.

14472 to 14474. Aug. 2-1.—Authorizing C.N.O.R. to build across public road between lots 361 and 360, con. 1, Chatham tp., Que.; across Point Anne Road, lots 20-21, Thurlow tp., Ont., and across public road beween lots 430 and 436, con. 1, Chaham tp. Que.

14475 to 14478. Aug. 1-2.—Authorizing C. N. Alberta Ry. to build its St. Albert Westerly line over two crossings on Lac Ste. Anne trail, and two public roads.

14479. Aug. 1.—Extending to Oct. 31, time within which interlocking plant be installed by G.T.R. west of Fergus, Ont.

14480, 14481. Aug. 2.—Authorizing G.T.P. Branch Lines Co., to cross 14 highways with its Prince Albert branch, in Saskatchewan, and seven highways with its Calgary branch, in Alberta.

14482.—This order has not yet been issued.

14483. Aug. 2.—Authorizing G.T.P. Branch Lines Co., to build its Cutknife branch across 10 highways between mileage 1 and 14.7, Sask.

14484. Aug. 2.—Authorizing G.T.P.R. to build spur for Edmonton Portland Cement Co., secs, 6 and 7, tp. 53, r. 19, w. 5 m., Alta.

14485. Aug. 2.—Authorizing G.T.P Branch Lines Co., to divert three highways on its Prince Albert Branch, at mileage 78.3, 94.6 and 107.3.

14486, 14487. Aug. 2.—Authorizing G.T.P. Branch Lines Co., to build its Moosejaw branch across highway mileage 1.1 to cross and divert highway, mileage 2.1; and cross nine highways, mileage 3.1 to 11.2, Sask.

14488. Aug. 9.—Approving location of C.P.R. Kerrobert Northeasterly branch for 20 miles from Kerrobert, Sask.

14489. Aug. 1.—Amending order 13880, June 10, approving location of G.T.P. Branch Lines Co., Calgary branch, and ordering that new plans to be subject to clause 20 of agreement between C.P.R. and G.T.P.R. be filed.

14490. Aug. 1.—Approving revised location of G.T.P Branch Lines Co., Calgary Branch mileage 163.5 to 181.74 South Alberta, District, subject to agreement to cross C.P.R. irrigation ditches.

14491. Aug. 1.—Authorizing G.T.P. Branch Lines Co., to occupy C.P.R. lands for its Tofield-Calgary branch location, mileage 150 and 190, and revised location, mileage 163.97, subject to agreement between the companies.

14492. Aug. 3.—Rescinding order 14215, June 29, requiring C.P.R. to stop its morning and night trains at Gauthier's siding, Que.

14493. July 28.—Approving G.T.R. plan of clearance for its standard round house doors.

14494. Aug 3.—Approving C.N.O.R. revised location, mileage 1.81 to 7.85 from Hawkesbury.

14495. Aug. 4.—Approving Supplement 2 to Canadian Classification 15, on application of Canadian Freight Association.

14496. July 18.—Approving temporary station location at mileage 9.4 from Ottawa, on C.P.R. Ottawa-Prescott branch.

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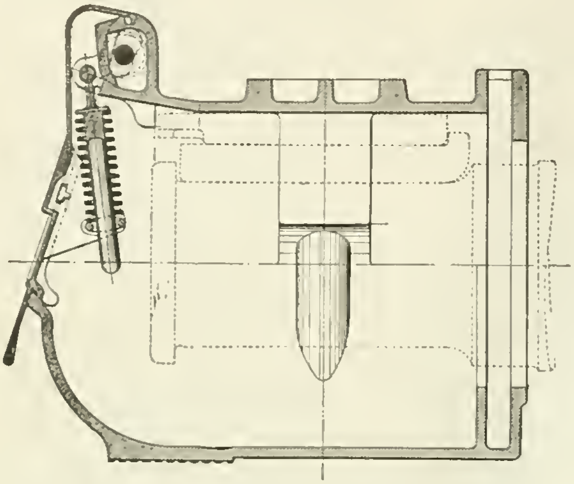

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14497. Aug. 4.—Authorizing C.P.R. to build spur for Bishop Construction Co., in lot cadastral 637, St. Laurent parish, Que.

14498. Aug. 3.—Authorizing C.P.R. to build its Estevan-Forward branch across 20 highways, mileage 0.49 to 19.386 and to cross and divert two highways, mileage 0 94 to 3.064.

14499. Aug. 9.—Authorizing C.P.R. to cross with extra track, seven highways from Smiths Falls to Bathurst, Ont., mileage 1.43 to 9.64.

14500. Aug. 9.—Authorizing G.T.P. Branch Lines Co., and C.P.R. to operate trains over interlocking plant at Alix, Alta., without being brought to a stop.

14501. Aug. 9.—Authorizing G.T.P. Branch Lines Co., to operate trains over C.P.R. at Yorkton, Sask.

14502. Aug. 9.—Authorizing G.T.R. to rebuild bridge 0.63 miles south of Richwood Station, Ont.

14503. Aug. 9.—Authorizing G.T.P. Branch Lines Co. to cross C.P.R. Pheasant Hills branch at Balcarres, Sask., interlocking plant to be installed.

14504. Aug. 8.—Authorizing C.P.R. to open for traffic its Craven-Colonsay branch, mileage 49.7. between Colonsay and Imperial, Sask.

14505. Aug. 8.—Authorizing Alberta Ry. and Irrigation Co., to open for traffic its Kimball branch from Rayley south for 8 miles.

14506. Aug. 8.—Authorizing C.N.R. to open for traffic its Rossburn extension, from Rhein to Hamton.

14507. Aug. 8.—Authorizing Algoma Eastern Ry. to divert road at mileage 22.98.

14508, 14509. Aug. 8.—Authorizing Toronto Eastern Ry. to build across Oshawa Electric Ry. at Simcoe St., and to carriage factory. Oshawa, Ont.

14510. Aug. 4.—Authorizing C.P.R. to build third track on north side of present tracks, between its Angus shops and Mile End, Montreal.

14511. Aug. 9.—Authorizing C.P.R. to build spur for Burns and Jordan, near Wardner, B.C.

14512. Aug. 8.—Authorizing C.P.R. to build spur for Cornellier and Joly, near Mile End Station, Montreal.

14513. Aug. 4.—Approving revised location of C.P.R. main line through part of Kamloops, B.C., and authorizing crossing of Lorn St.

14514. Aug. 9.—Authorizing C.P.R. to build bridge 5.9 over Twelve Mile Creek on its Guelph Junction-Hamilton branch.

14515. Aug. 9.—Authorizing C.P.R. to build spur to Dominion Gypsum Co.'s premisis, St. James, Winnipeg.

14516. Aug. 9.—Authorizing C.P.R. to build spur for O. Martineau et Fils, St. Denis Ward, Montreal.

14517. Aug. 9.—Authorizing C.P.R. to build bridge 27.4 on its St. Stephen branch, Atlantic division.

14518. Aug. 5.—Approving C.N.R. location, mileage 0 to 41.71, Sask.

14519. Aug. 8.—Authorizing C.N.O.R. to build across Riviere des Prairies, west channel, Dorothee parish, at mileage 39.6 from Hawkesbury, Ont.

14520. Aug. 8.—Authorizing C.N.O.R. to connect with Central Ontario Ry. at Trenton, Ont.

14521. Aug. 5.—Approving revised location C.N.O.R. Sudbury-Port Arthur Line, mileage 536.00 to 517.73, from Sudbury Jct., mileage 32.4 to 50.6 east of Port Arthur.

14522. Aug. 5.—Authorizing the C.N.O.R. to build across highway, between lots 24 and 25, con. 4, Bastard tp.

14523. Aug. 5.—Authorizing C.N.R. to carry its Vegreville-Calgary branch over C.P.R. main line by overhead crossing in n.e. ¼ sec. 36, tp. 23, r. 1, w. 5 m., Alta.

14524. Aug. 8.—Approving, temporarily, G.T.P.R. Standard Freight Mileage Tariff C.R.C. 8, pending Board's inquiry into British Columbia rates.

14525. Aug. 4.—Extending to June 15, 1912, time in which G.T.P. Branch Lines Co., shall install interlocking plant at crossing of C.P.R. Arcola branch at Griffin, Sask.

14526. Aug. 8.—Authorizing G.T.P. Branch Lines Co., to cross and divert five highways on its Battleford branch, Sask.

14527. Aug. 5.—Authorizing G.T.P. Branch Lines Co., to cross with its Biggar-Calgary Branch the C.P.R. Lacombe branch at Druid, Alta., interlocking plant to be installed

14528. Aug. 5.—Extending to Oct 1, time for installation of interlocking plant by G.T.P. Branch Lines Co., across C.N.R. at Dana, Sask.

14529. Aug. 5.—Authorizing G.T.P. Branch Lines Co. to cross 18 highways on its Cutknife branch. mileage 22 6 to 39 7, Sask.

14530. Aug. 8.—Approving location and plans of G.T.R. station at Thorndale, Ont.

14531. to 14533 Aug. 9-3.—Authorizing G.T.R. to build spurs into premises of St. Lawrence Flour Mills Co., Lachine Canal Bank, Montreal, Muskoka Wood Manufacturing Co., Huntsville, Ont., and Ham & Nott Co., Brantford, Ont.

14534. Aug. 14.—Approving location of G.T.P. Branch Lines Co. Brandon branch, mileage 0 to 18.36, Brandon District, Man.

14535. Aug. 15.—Authorizing M.C.R. to operate its trains over drawbridge and crossing of Niagara, St. Catharines and Toronto Ry., without being brought to a stop; interlocking plant being completed.

14536. Aug. 11.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.), to cross under highway between cons. 4 and 5, Ops. tp., Ont.

14537, 14538. Aug. 12.—Authorizing C.P.R. to build extra track across road allowance on west boundary sec. 2, tp. 8, r. 21, w. p.m. Man., lying north of its Winnipeg to Souris branch and to build extra track across Main St., Minnedosa, Man.

14539. Aug. 12.—Authorizing C.P.R. to build seven bridges on its Atlantic Eastern Ontario and Alberta divisions.

14540. Aug. 12.—Authorizing C.P.R. to build spur into premises of A. W. McGregor and A. Martin, Regina, Sask.

14541. Aug. 14.—Authorizing C.P.R. to build bridge 14.9 near Cooksville, Ont.

14542. Aug. 12.—Amending order 14285, July 18, re C.P.R. Smiths Falls-Bathurst double track highways crossing in Lanark County, Ont.

14543. Aug. 11.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.), to build spur across road allowance between cons. 7 and 8, Thorah tp., Ont.

14544. Aug. 12.—Authorizing C.P.R. to build second track across Edwin St., Perth, Ont.

14545. Aug. 14.—Authorizing Esquimalt and Nanaimo Ry. to build bridge 37.8 over Koksilah River, B.C.

14546. Aug. 14.—Ordering G.T.R. to build and complete bridge at Brooker's crossing, Front tp., Ont., before Oct. 31.

14547, 14548. Aug. 11.—Approving C.N.Q.R. and C.N.O.R. bylaws authorizing G. H. Shaw, General Traffic Manager, to issue tariffs of tolls for all traffic.

14549. Aug. 11.—Relieving G.T.P. Branch Lines Co. from speed limit of 15 and 10 miles an hour over its Tofield-Calgary branch.

14550. Aug. 12.—Authorizing G.T.P.R. to cross and divert highway in n.e. ¼ sec. 27, tp. 24, r. 10, w. 2 m. at mileage 100.9, Sask.

14551. Aug. 11.—Authorizing Hull Electric Co. to operate its cars over C.P.R. in Hull, Que, without being brought to a stop.

14552. Aug. 11.—Authorizing C.P.R to use, pending completion of interlocking plant, crossing of James Bay Ry. (C.N.R.), at Brechin, Ont.

14553. Aug. 14.—Authorizing Toronto Eastern Ry. to cross 11 highways, mileage 0.9 to 7.7, Pickering, tp., Ont.

14554 to 14556. Aug. 12-14.—Relieving C.P.R., G.T.P.R., and M.C.R. respectively, from further protection at crossings in Rawdon tp., Ont., Ituna, Sask. and at highway east of Fargo, Ont.

14557. Aug. 14.— Authorizing Ottawa Electric Co., to maintain wires across C.P.R. in Rideau Park, Ottawa, Ont.

14558. Aug. 15.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.) to operate trains over interlocking plant without stopping. at Coldwater, Ont.

14559. Aug. 14.—Amending order 13968. Mar. 28.—re location of C.P.R. Hamiota to Birtle Branch, Man.

14560. Aug. 15.—Authorizing city of Sherbrooke, Que., to maintain sewer under G.T.R. in south ward.

14561. Aug. 15.—Authorizing city of Hamilton, Ont., to lay temporary level crossing over Hamilton Radial Electric Ry.

14562. Aug. 15.—Authorizing Alberta Government to build highway over C.P.R. in s.w. ¼ sec. 36, tp. 46, r. 22, w. 4 m.

14563. Aug. 16.—Authorizing Toronto, Hamilton and Buffalo Ry. to cross highway in con. 8, Pelham tp., Ont.

14564. Aug. 15.—Authorizing G.T.R. to build spur into Colonial Wood Products Co.'s premises, Thorold, Ont.

14565. Aug. 16.—Authorizing G.T.R to use Port Hope viaduct at mileage 270.28, Eastern Division.

14566. Aug. 15.—Authorizing C.N.O.R to divert spur at Trenton. Ont., authorized by order 12534. Dec. 12, 1910.

14567. Aug. 15.—Authorizing C.N.O.R. to build 90 ft. D.P.G. bridge across St. Charles River, at mileage 4.38 from Quebec.

14568. 14569. Aug. 15. — Authorizing C.N.O.R to cross two public roads in Loughborough tp.

14570. Aug. 15.—Authorizing C.N.O.R. to build across Riviere du Chene, Que.

14571. Aug. 15.—Authorizing C.P.R. to build First St. West southwesterly across its main line and divert road allowance between sec. 33 and 34, tp. 19, r. 16, w. 4 m., Southesk, Alta.

14572. Aug. 15. Authorizing C.P.R. to build three spurs for Canadian Tube and Iron Co., St. Patrick and Hamilton Sts., Montreal.

14573. Aug. 16.—Authorizing C.P.R. to build spur for Armour and Co., Regina, Sask.

14574. Aug. 16.—Authorizing C.P.R. to build across road allowances, mileage 128.16, 132.39, Moose Jaw subdivision.

14575. Aug. 15.—Authorizing C.P.R. to build bridge 4.30, Angus shops to Mile End Quarry Road, Montreal Terminals.

14576. Aug. 15.—Approving location of C.P.R. Waldo branch, Kootenay district, B.C.

14577. Aug. 15.—Authorizing C.N.R. to cross C.P.R. Mission Branch, B.C., for construction purposes only.

14578. Aug. 15.—Authorizing C.P.R. to build spur for A. B. Cushing Lumber Co., and sub-spur for Pacific Cartage Co., Calgary, Alta.

14579. Aug. 16.—Authorizing C.P.R. to build branch to A. Warren's premises, Toronto.

14580. Aug. 15.—Authorizing C.P.R. to build across road allowance between lots 16 and 16, con. 6, Ops. tp., Ont.

14581. Aug. 15. Authorizing C.P.R. to build siding along Front St., Vancouver, B.C.

14582. Aug. 15.—Authorizing C.P.R. to build extra track across road allowances, Moose Jaw to Caron, Sask.

14583. Aug. 15.—Authorizing South Ontario Pacific Ry. (C.P.R.), to close portion of the Hamilton Road, replace same by diversion and to cross underneath with its Guelph Junction-Hamilton branch; also close portion of highway, mileage 14.05, replace by diversion and cross underneath at mileage 13.98.

14584. Aug. 14.—Approving C.P.R. station at Markinch, Sask., and extending time for building to Sept. 15.

14585. Aug. 16.—Approving C.P.R. Wilkie to Anglia branch, mileage 21 to 40, Sask.

14586. Aug. 17.—Authorizing C.N.O.R. to build bridge over Riviere des Milles Isles, at mileage 37.9 from Hawkesbury.

14587. Aug. 17.—Approving proposed Bott drains to be built under C.P.R. in West Nissouri and North Dorchester tps., Ont.

14588. Aug. 17.—Authorizing C.P.R. to build a switchback and spur for Sand and Supplies, Ltd., lot 31, con. 9, Dumfries, tp.

14589. Aug. 17.—Approving revised location of C.P.R. Bassano to Irricana branch, Alta.

14590. Aug. 17.—Approving portion of C.P.R. Bassano to Irricana branch, mileage 0, northwesterly for 20.2 miles.

14591. Aug. 18.—Approving Canadian Freight Association bulk grain bill of lading, subject to amendment of sec. 6.

14592. Aug. 19.—Relieving C.P.R. from further protection at first public highway crossing east of Tillbury station, Ont.

14593. Aug. 21.—Relieving G.T.R. from further protection of crossing at Hensall Station, Ont.

14594. Aug. 21.—Approving uniform tariff of express tolls on all cream, schedule B, excluding, and schedule C including collection and delivery, effective Sept. 30.

14595. Aug. 21.—Authorizing G.T.R. to build branch from Saulter St. to Hoyt Metal Co.'s premises, Toronto.

14596. Aug. 17.—Approving G.T.P. Branch Lines Co.'s Biggar-Calgary branch from sec. 2, tp. 31, r. 25, w. 3 m., to 4 m., Sask.

14597. Aug. 22.—Approving location of portion of C.P.R. Moose Jaw Southwesterly branch from main line for 35.59 miles.

14598. Aug. 22.—Approving detail plans A, of South Ontario Pacific Ry. (C.P.R.), bridge at mileage 15.37 from Guelph Jct.

14599. Aug. 18.—Authorizing C.P.R. to build spur for Breckenridge and Lund Coal Co., in s.e. ¼ sec. 26, tp. 7, r. 2, W. 5 m., Alta.

14600. Aug. 18.—Authorizing C.P.R. to build bridges 80.09, 46.37, and 3.2 on its Ontario, Lake Superior and Manitoba Divisions.

14601. Aug. 17.—Authorizing Kootenay and Alberta Ry. to build across 15 highways in Alberta.

14602. Aug. 23.—Approving C.N.R. location of its Swift Current extension through tp. 12, r. 23-25. w. 2. m., Sask., mileage 0 to 14.16 from junction with its Moose Jaw extension.

14603. Aug. 17.—Approving Algoma Central and Hudson Bay Ry. revised location at connection with C.P.R. at Hobon, Ont.

14604. Aug. 17.—Authorizing South Ontario Pacific Ry. (C.P.R.) to build its Guelph Junction-Hamilton branch across road allowance between con. 3 and 4, East Flamboro tp., Ont.

14605. Aug. 17.—Authorizing Calgary and Edmonton Ry. to carry by a bridge its main line across Edmonton, Yukon and Pa-

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cific Ry. in Hudson Bay Reserve, North Saskatchewan River and Saskatchewan Ave. Edmonton, Alta.

14606. Aug. 21.—Granting application of city of Brandon, Man., for transfer track between C.P.R., Brandon, Saskatchewan and Hudson Bay Ry. (G.N.R.), and C.N.R., tariffs to be filed covering interchange charges.

14607. Aug. 18.—Authorizing C.P.R. to build spur for Holden and Service, near Pilot Butte station, Sask.

14608. Aug. 19. Approving location of C.P.R. station at Waldeck, Sask.

14609. Aug. 18.—Authorizing C.N.O.R. to build bridge over Jock River, Nepean tp.

14610. Aug. 18.—Approving C.N.R. location through tps. 27-26, r. 8-6, w. 3 m., mileage 45.54 to 62.31, Sask.

14611. Aug. 18.—Authorizing C.N.R., subject to conditions, to build across and divert Maclead trail, to cross Thistle St., Pine St., Spruce Ave., Hungerford St., Poplar Ave., and Victoria Road, and to close and cross Lindsay and St. Joseph St., Calgary, Alta.

14612, 14613. Aug. 21, 31.—Authorizing C.P.R. to use bridge 16.16, Webbwood subdivision, Lake Superior Division, and bridge 45.3 on its Muskoka sub-division.

14614. Aug. 21.—Authorizing C.P.R. to build bridge 118.4 over Boundary Creek, Boundary sub-division, B.C. Division.

14615. Aug. 19.—Amending order 14342, July 19, re highway crossings of C.P.R. Moose Jaw Northwesterly branch.

14616. Aug. 18.—Approving C.N.R. location subject to certain conditions, through tp. 24, r. 1, w. 5 m., mileage 260.03 to 261.08, Calgary, Alta.

14617. Aug. 19.—Authorizing C.N.Q.R. to take for a ditch, portion of C. Barbeau's property, Les Ecureuile, parish, Que.

14618. Aug. 19.—Authorizing C.N.Q.R. to cross Montreal Terminal Ry., transfer track east side of La Salle Ave., Montreal.

14619. Aug. 24. — Authorizing C.P.R. (G.B. & S. Ry.) to build bridge over public road at mileage 56.4 Elden tp., Ont.

14620. Aug. 23.—Authorizing Toronto Eastern Railway to cross public road 2nd concession Pickering tp., Ont.

14621. Aug. 24.—Authorizing G.T.P. to divert highway in n.w. ¼ sec. 31, tp. 21, r. 4, west 2nd m., at mileage 62.9.

14622. Aug. 24.—Authorizing G.T.R. to reconstruct bridge 7, over Thames River, near Thamesville, Ont.

14623. Aug. 24.—Authorizing G.T.R. to extend its siding into Anglo-Canadian Leather Co.'s premises, Bracebridge, Ont.

14624. Aug. 24.—Authorizing T., H. & B. Ry. to build siding to Schacht Motor Car Co.'s premises, Hamilton, Ont.

14625. 14626. Aug. 24. Authorizing C.P.R. to build bridge 82.7, across Kettle River in district 3, Boundary subdivision, B.C. and bridge at mileage 24.3 on lots 1 and 2, Con. 6, South Orillia, tp., Ontario. (G.B. & S.R.)

14627 14628. Aug. 24-25—Authorizing C.P.R. to cross with its Moose Jaw Northwesterly branch, 22 highways between mileage 222.20 and 242.67 and with its Lauder Westerly extension (Tilston to Griffin) 22 highways, mileage 4.237 to 25.653.

14629. Aug. 28.—Directing G.T.R. to install within 90 days, improved type of electric bell at crossing of Welington St. Drayton, Ont., 20% to be paid from ralway grade crossing fund.

14630. Aug. 29.—Approving plans and specification for drain to be placed under G.T.R. by London tp., Ont.

14631. Aug. 25.—Authorizing T. H. & B.R. to operate spurs to American Can Co.'s premises, Hamilton, Ont.

14632. Aug. 28.—Approving character of Cook drain, to be built under G.T.R. by Logan tp., Ont.

14633. Aug. 28.—Authorizing C.N.R. to cross 6 highways in Saskatchewan.

14634. Aug. 29.—Approving location of C.N.R. through tps. 11 and 12, ranges 25-26, west 2nd m., Sask., mileage 14.16 to 26.38.

14635. Aug. 28.—Authorizing C.N.O.R. to cross and divert Beckwith Road, Smiths Falls.

14636. Aug. 28.—Authorizing C.N.R. to cross with its Prince Albert-Battleford line, 11 highways in Saskatchewan.

14637.—Aug. 29.—Authorizing C.N.R. to cross 12 highways in Saskatchewan.

14638. Aug. 28.—Authorizing Algoma Central and H. B. Ry. to open for traffic portion of Magpie branch connecting with Josephine branch at mileage 17 and extending northerly for about 9½ miles.

14639. Aug. 28.—Authorizing C.P.R. to build two additional tracks across St. Clair Ave. and Scarlett Rd. at West Toronto station until subway at Scarlett Rd. is completed.

14640. Aug 28.—Authorizing C.P.R. to extend Calgary Brewing and Malting Co.'s spur at Bengal. Alta.

14641. Aug. 28.—Authorizing Esquimalt & Nanaimo Ry. to build bridge 4.0.

14642. Aug. 28. Authorizing Quebec Ry., Light and Power Co., to open for traffic the north track of its Montmorency branch near Beauport station to near Montmorency Falls, 3.4 miles.

14643. Aug. 28. Authorizing G.T.P.R. to divert highway in n.e. ¼ of sec. 25, tp. 20, r. 2, w. 2nd m., mileage 44.2, Sask.

14644. Aug. 25.—Authorizing G.T.R. to build siding to C. J. Miller & Son's premises South Orillia, Ont.

14645. Aug. 30.—Relieving G.T.R. from further protection at crossing of Brunswick St., Stratford, Ont.

14646, 14647, Aug. 30.—Relieving C.P.R. from further protection at St. Jovite, Laurentian subdivision, Que., and at east end of Hitchcock station, on its Portal section, Sask.

14648. Aug. 29.—Authorizing G.T.R. to construct siding to Independent Glass Producers premises, Toronto.

14649. Aug. 30.—Authorizing C.P.R. to divert road allowance between cons. 7 and 8, Town Line Road between Manvers and Cavan tps, at mileage 87.36, G.B. & S. Ry.

14650, 14651. Aug. 30.—Authorizing C.P.R. to construct spur for Maxwell & Hood, block 27, D.G.S., 53, St. James, Winnipeg, and spur for O. Velie, Arcola, Sask.

14652, 14653, Aug. 30.—Authorizing Toronto Eastern Ry, to cross two public roads in 1st con., Pickering tp., Ont.

14654. Aug. 30.—Authorizing C.P.R. (G. B. & S. Ry.,) to cross highway between cons. 6 and 7, Manvers tp, Ont.

14655. Aug. 31. Relieving C.P.R. from further protection at crossing at mileage 9, St. Brigide Parish, Que.

14656. Aug. 29.—Authorizing G.T.R. to build spur west of Rockfield station, Que., to St. Lawrence Bridge Co.'s premises.

14657. Aug. 31.—Authorizing Montreal & Southern Counties Ry. to open for traffic railway from Front St. St. Lambert, to the Country Club, about one mile.

14658, 14660. Aug. 30-31.—Approving location of C.P.R. stations to be built at Luseland, Sask., Vernon, B.C., Milden, Herschel, Plenty, Kerrobert and Conquest, Sask.

14661. Aug. 21.—Authorizing G.T.P.R. to increase speed limit on its trains, from Prince Rupert easterly 100 miles, to 30 miles an hour.

14662. Sept. 1.—Extending to Oct. 15 time for filing of Dominion Ex. Co.'s Standard Mileage Tariffs of Maximum Tolls.

14663. Sept. 1.—Approving G.T.R. plans for terrace over C.P.R. and Hull Electric Ry. at west side Chateau Laurier, Ottawa.

14664. Sept. 2.—Authorizing G.T.R. to build spur into Anthes Foundry, Toronto.

14665. Sept. 2.—Authorizing G.T.R. to build branch at Nipissing Jct., Ont., crossing C.P.R. and connecting with T. & N.O.R.; interlocker to be installed.

14666 to 14668. Sept. 2—Approving C.N.O.R. location through Booth, Purdom and Ledger tps. and unsurveyed territory, Thunder Bay District, mileage 84 to 100, 100 to 120, and 160 to 179, from Port Arthur.

14669, 14670. Sept. 2.—Authorizing C.N.R. to cross with its Prince Albert-Battleford line, five highways, and to cross three other highways in Saskatchewan.

14671. Sept. 2.—Authorizing C.N.O.R. to build station at St. Andrews, Que., and approving location.

14672. Aug. 31.—Authorizing C.N.R. to cross with its Swift Current extension nine highways in Saskatchewan.

14673. Sept. 2.—Authorizing Algoma Central and Hudson Bay Ry. to cross C.N.O.R. at mileage 80.54 on its Port Arthur-Sudbury branch; interlocker to be installed.

14674. Sept. 2.—Authorizing C.P.R. to close highway at mileage 96.6, Mountain tp., Ont.

14675. Sept. 2.—Authorizing Georgian Bay and Seaboard Ry. (C.P.R.), to close portion of road allowance in Eldon tp., Ont.

14676, 14677. Aug. 30, Sept. 2.—Authorizing C.P.R. to cross with its Lacombe easterly branch 21 highways in Alberta, and to build across six highways with its Regina, Saskatoon and North Saskatchewan branch, from mileage 15.09 to 22.646, Sask.

14678. Sept. 2.—Approving location of C.P.R. Langdon North branch from mileage 40.1 to 102.1 Alta.

14679. Sept. 1. Authorizing Essex Terminal Ry. to build overhead crossing over M.C.R. Detroit River tunnel tracks at Windsor, Ont.

14680. Sept. 1.—Approving Kettle Valley Ry. location from mileage 0 to 5. B.C.

14681. Sept. 1.—Ordering G.T.P. Branch Lines Co., to build overhead crossing in n.e. ¼ sec. 36, tp. 39, r. 23, w. 4 m., Alta., within 90 days, under penalty of $25 a day.

14682. Sept. 2.—Approving Alberta Central Ry. location from mileage 120 to 160, east of Red Deer, Alta.

14683. Sept. 2.—Approving detail plan for C.P.R. subway at Scarlet Road, York tp., Ont.

14684. Sept. 2.—Authorizing C.P.R. to build its Swift Current to Brooks branch across seven highways in Saskatchewan.

14685. Aug. 18.—Ordering C.N.Q.R. to make certain changes in train service on its Laurentian subdivision to connect with C.P.R. train at Three Rivers.

14686. Aug. 1.—Authorizing G.T.P. Branch Lines Co. to cross with its Tofield-Calgary branch, the C.P.R. Langdon Branch in n.e. ¼ sec. 34, tp. 27, r. 26, w. 4 m., Alta.

14687. Aug. 5.—Authorizing G.T.R. to take certain lands of Mrs. J. A. Wright and Rockfield Land Co., in Lachine Parish, Que. for overhead crossing of Lachine Rd.

14688. Sept 2.—Authorizing Toronto Carpet Co. to build a bridge across its siding, King St. West, Toronto.

14680. Aug. 23. Suspending White Pass and Yukon Route Tariffs C.R.C. 15, to take effect Sept. 1, until further evidence is heard at Board's sitting in Oct.

14690. Sept. 5.—Authorizing South Ontario Pacific Ry. (C.P.R.), to build its Guelph Jct. to Hamilton line under bridge at Dundas St., Waterdown, Ont.

14691. Sept. 2.—Authorizing C.P.R. to build its Bulyea South Branch across nine highways.

14692. Sept. 5.—Authorizing C.N.O.R. to build across Elmsley St., Smiths Falls.

14693, 14694. Sept. 5.—Authorizing C.P.R. to build spurs for Herbert Rolling Mills Co., Herbert, Sask, and for Haug Bros., and Nellermoe Co., Regina, Sask.

14695. Sept. 5.—Authorizing C.P.R. to rebuild six bridges on British Columbia and Lake Superior divisions.

14696. Sept. 5. —Authorizing G.T.R. to build siding into Houedry & Son's premises, Peterboro, Ont.

14697. Sept. 5.—Authorizing G.T.R. to maintain additional passing track across public highway east of Oshawa station, Ont.

14698. Sept. 5.—Authorizing G.T.R. to maintain siding to J. Heney & Son's premises, Ottawa.

14699 to 14705. Sept. 5.—Approving Kettle Valley Ry. plans for bridges over Coldwater and Kettle Rivers, B.C.

14706. Sept. 6.—Approving Brandon, Saskatchewan and Hudson Bay Ry. bylaw authorizing H. T. Noble G.P.A., to prepare and issue tariffs.

14707. Sept. 6.—Granting certificate correcting error in Georgian Bay and Seaboard Ry., (C.P.R.), location plan.

14708. Sept. 5.—Authorizing C.P.R. to build spur to C.P.R. mill site, mileage 5, west of Ignace, Ont.

14709. Sept. 6.—Authorizing C.P.R. to build spur for Manitoba Government Telephones, Winnipeg.

14710. Sept. 6.—Authorizing Alberta Central Ry. to build bridges over highway at mileage 20, 29 and 29.8 between Red Deer and Rocky Mountain House.

14711. Sept. 5.—Authorizing Montreal Terminal Ry. to build spur into Raymond Cement Products Co.'s premises, Montreal East, Que.

The Canadian North-Eastern Ry.'s standard passenger tariff, standard freight tariff and standard passenger and wharf terminal have been approved by the British Columbia Minister of Railways, under the provisions of the B.C. Railway Act, 1911. The tariffs are signed by N. McL. Curran, Managing Director.

Master Mechanics and Master Car Builders Committees.—Announcement has been made of the appointment of committees for the American Railway Master Mechanics Association and the Master Car Builders Association for the current year. On the Master Mechanics Committee are the following Canadian officials: H. H. Vaughan, Assistant to the Vice President, C.P.R., on Consolidation, and on Maintenance of Superheater Locomotives; W. D. Robb, Superintendent of Motive Power, G.T.R., Montreal, on Safety Valves; L. R. Johnson, Assistant Superintendent of Motive Power, C.P.R. Eastern Lines, Montreal, on Steel Tires; R. W. Burnett, General Master Car Builder, C.P.R., is on two of the Master Car Builders committees, namely, Car Wheels and Car Trucks.

Electric Headlight Saves Train

(From Daily Papers)

"Wednesday night B——— forgot to deliver an order to hold Eastbound Passenger Train No. 6, and only the fact that the Electric Headlight of the oncoming Passenger train was seen at a great distance by the Engineer of the Westbound Freight prevented a head end collision in the ——— Canyon near ———. The warning light was seen in time to enable the freight to get back on to the siding at ———."

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RAILWAY DEVELOPMENT.

Projected Lines, Surveys, Construction, Betterments, Etc.

Alberta Central Ry.—The Board of Railway Commissioners has approved of location plans of the line from mileage 120 to 160 easterly from Red Deer, Alta., and has authorized the building of bridges on the line under construction westerly from Red Deer to Rocky Mountain House, Alta., at mileage 20. 29, and 29.8. (Sept., pg. 853.)

Alberta Ry. and Irrigation Co.—The Board of Railway Commissioners has authorized the opening for traffic of the Kimball branch, which runs from Raley, Alta., to Wolford, about eight miles. The route was described in our issue of Oct. 1909, pg. 743, at which time the grading was being done, and track was laid in the same year.

The provincial government has decided to appeal to the Imperial Privy Council as to the construction of bridges across the irrigation canals. The company disputes its liability to build bridges on road allowances on which there was regular travel at the time of the building of the canal, and the decision of the courts endorsing this view is being appealed against. (July, pg. 645.)

Algoma Central and Hudson Bay Ry.—The Board of Railway Commissioners has approved of the revised location plans of the connection with the C.P.R. transcontinental line at Hobon, Ont., and has authorized the building of the extension from Hobon to the National Transcontinental Ry. across the Canadian Northern Ontario Montreal-Port Arthur line at mileage 80.94, at which point an interlocking plant is to be installed. The starting point of this extension is at Hobon, mileage 194.5 north of Sault Ste. Marie, and the route will follow the east side of Oba lake and river to the National Transcontinental Ry., 142 miles west of Cochrane, a distance of about 102 miles. The maximum gradient will be 0.6% and the maximum curvature six degrees. Following are some details stated to have been supplied by an officer: On the first 50 miles the average quantities per mile are as follows; excavating solid rock, 5,238 cu. yds.; loose rock, 5,760 cu. yds.; common excavation, 14,625 cu. yds., and overhaul, 36,850 cu. yds. The balance of the work will average per mile: solid rock, 93 cu. yds.; loose rock, 610 cu. yds.; common excavation, 16,330 cu. yds., and overhaul 35,480 cu. yds. There will probably be two steel bridges in the future. The present construction work calls for putting up 25 pile bridges. There will be a number of stations, water tanks and a coaling plant. (Sept., pg. 853.)

Algoma Eastern Ry.—The Board of Railway Commissioners has authorized the building of bridges over the Whitefish River and over the Spanish River at mileage 66.23 and 42.80 and over the trunk road in Merrit tp., at mileage 47.38. (Aug., pg. 733.)

Atlantic, Quebec and Western Ry.—Track has been laid on the extension of this line into Gaspe, Que., and C. R. Scoles, the General Manager, arrived there Sept. 4, in his private car.. It is expected that a regular train service will be put on early in Oct. (See Atlantic and Lake Superior Ry., Sept., pg. 853.)

Blomidon Ry.—The provisional directors named in the act of the Nova Scotia Legislature incorporating the company are: A. S. Burgess, H. Bigelow, A. M. Covert, Canning, N.S.; H. H. Wickwire, Kentville, N. S.; L. S. Macann, Ottawa. The line authorized is to start from Canning on the Cornwallis branch of the Dominion Atlantic Ry., and will extend to Cape Blomidon via Woodside, North Corner, Upper Pereaux and Delhaven; with a branch to Cape Split, via Scotts Bay, and from Wolfville to Canning via Port Williams, Starr's Point and Canard. (Mar., pg. 409.)

Brandon Transfer Ry.—The Board of Railway Commissioners has granted the application of the city of Brandon, Man. for a transfer track between the C.P.R. the Canadian Northern Ry., and the Brandon, Saskatchewan and Hudson Bay Ry., (Great Northern Ry.) and has directed the filing of tariffs covering the interchange charges.

British Columbia and Alaska Ry.—Officers of the company visiting Fort George, B.C., recently said the company was not ready to announce plans for construction but hoped to be able to give out definite information in a short time. The plans for the route between Vancouver and Fort George, have been deposited with the Provincial Department of Railways at Victoria. (See B.C. Ry. and Development Co., Sept., pg. 853.)

A Canada-Siberia Railway.—Russian engineers, cables state, are again considering the question of constructing a tunnel under Behring Strait, with a view of connecting up the Trans-Siberian Railway with Alaska, and consequently with Canadian and United States railways. The Trans-Siberian Railway can be extended to East Cape, and the Alaskan lines to Cape Prince of Wales, between which points the strait is 26 miles wide, and has an average depth of water of about 180 ft. About midway across the strait are two islands which would divide the tunnel into two sections.

C. Erlund, who was engaged on the construction of the Trans-Siberian Railway, was in Vancouver at the end of Aug. looking over the proposition for the building of a railway from Vancouver to the Peace River.

Chicago, Milwaukee and St. Paul Ry. Chicago, Milwaukee and Puget Sound Ry.—Press reports state that the C.M. and St. P. Ry. has under consideration plans for the extension of one of its North Dakota branches into Sackatchewan.

Another report credits the C.M. and P.S. Ry. with negotiating for the Indian reservation just north of Surrey, Wash., and with being engaged in locating a route for a line parallel with that of the Great Northern Ry., from Everett, Wash, to Vancouver, B.C. (Sept., pg. 853.)

Delaware and Hudson Co.—The Board of Railway Commissioners has ordered the Napierville Jct. Ry., one of the lines owned in Canada by the D. and H. Co., to file plans for a station building at Nelson Jct., by Oct. 19. (July, 1910, pg. 547.)

Edmonton to Peace River.—Recent press reports state that J. D. McArthur, railway contractor, Winnipeg, has acquired the Edmonton, Dunvegan and Peace River Ry Co.'s charter, and that survey parties are being placed in the field to locate a route for the first section of the work, from Edmonton to Dunvegan, Alta.

There is probably some error in this item, particularly as to the title of the company. The Edmonton, Dunvegan and British Columbia Ry. was incorporated by the Dominion Parliament in 1907, to build a railway from Edmonton to Dunvegan, thence via the Peace and Parsnip river valleys to Fort George, B.C., the provisional directors being: J. B. MacDonald, Winnipeg; J. A. Sandgreen, Edmonton, Alta.; C. Pringle, Ottawa; T. G. Gallagher, Spokane, Wash. An extension of powers was granted in 1908, and an extension of time for construction in 1910. (See Edmonton, Dunvegan and British Columbia Ry., July, 1910, pg. 547.)

Essex Terminal Ry.—The Board of Railway Commissioners has authorized the line to be carried by an overhead crossing over the Detroit River Tunnel tracks at Windsor, Ont. (Sept., pg. 853.)

Ha Ha Bay Ry.—Senator Choquette, President, has made an inspection of the branch line to Laterriere village, Que., seven miles in length, which is practically completed. It is expected to have it opened for traffic early in Oct. (Mar., pg. 205.)

Intercolonial Ry.—Tenders will be received by the Department of Railways and Canals to Oct. 12, for the building of a branch line from near Alba to Baddeck, N.S., 22.7 miles. A description of this line was given in our July issue, pg. 647.

Tenders are under consideration for the building of the Hampton spur line, extending from Hampton station to Hampton village, N.B. This will not be a very important piece of construction, as the sum voted by the Dominion Parliament for it is only $15,000. Tenders for the construction of the projected line from Guysboro to deep water at Country Harbor, 72 miles, and the line from Dartmouth to Deans, 43.2 miles, are also under consideration. (Sept., pg. 853.)

Tenders are also being asked for the construction of the Moncton yard and cut-off.

Joliette and Lake Manuan Colonization Ry.—Press reports state that a contract has been let to a New York firm in conjunction with an Ottawa contractor, and that R. F. H. Bruce, Ottawa, the chief engineer, went to Joliette, Que., Sept. 7, to arrange for the immediate starting of construction on the first 60 miles of the line.

Following are the directors for the current year elected at the annual meeting, held in Montreal, Sept. 6, Senator Belcourt, who was subsequently elected President; S. G. Lemoque, R. Chevrier, L. C. Morrisette, R. Ritchie, K.C., Ottawa; E. S. Daniel, De A. Laredo, London, Eng. (July, pg. 647).

Kaslo and Slocan Ry.—The Premier of British Columbia is reported to have informed the mayor of Kaslo, Sept. 4, that the reconstruction of the K. and S. Ry. would be taken in hand by the new owners at once, and that the aid promised by the Government would be available as soon as the company was in a position to claim it. (Aug., pg. 733.)

Kettle Valley Lines.—The line under construction from Midway via the Hope Mountains to the Fraser River is making rapid progress. About 20 miles of track is reported to have been laid northward along the west fork of the Kettle River, and 10 miles of additional grading has been done. Further up the stream grading is going on on a 35-mile section, which has its westerly termination at Kettle Valley summit, about 45 miles from Penticton. At this place it is proposed to build a four mile spur to Dog Lake, and preliminary surveys are reported to have been made for a branch towards Summerland. J. J. Warren, President, and A. McCullough, Chief Engineer, are negotiating with the local authorities as to the building of the lines in the vicinity of Penticton.

A contract has been let to L. M. Rice and Co., Inc., Seattle, Wash and Vancouver, B.C., for the construction of a 40 mile section of the line from Penticton ,along the west side of Okanagan Lake to Trout Creek, and along Trout Creek to Osprey Lake summit. The maximum curvature is 10 degrees and the maximum gradient 2%. There is considerable rock work on the construction all along being classed heavy,

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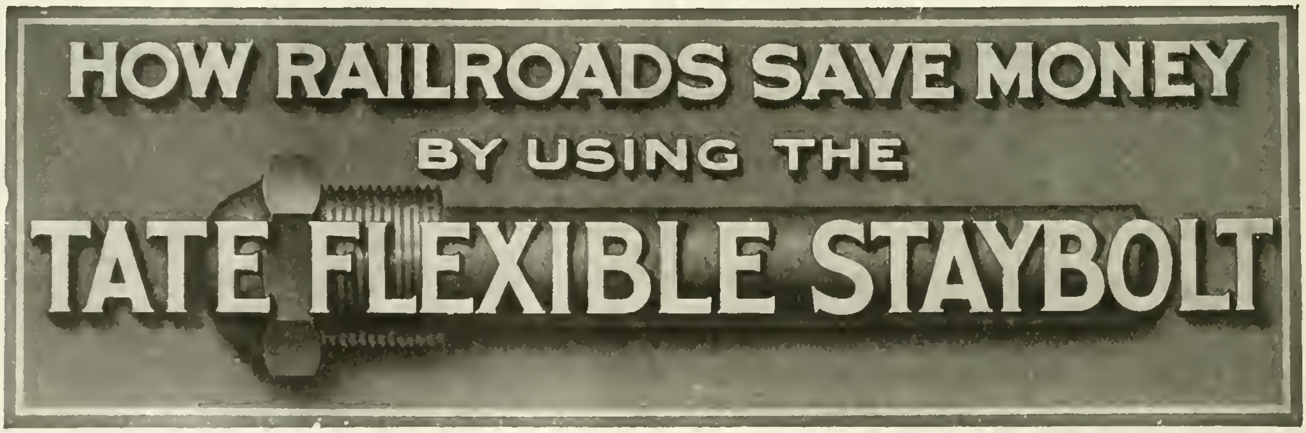

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It is reported that a sub-contract has been let to McLean and Mitchell, Spokane, Wash., for a section of this mileage, and that their grading outfits have already started work. From Osprey summit to Otter summit, the distance is 75 miles, and from Otter summit to Merritt, 30 miles. Track has been laid on the first 20 miles out of Merritt, and the grading on the remaining 10 miles to Otter Summit is well advanced. The line is to be extended from the Otter summit across the Hope Mountains to Hope, where a bridge will be built across the Fraser River to afford a connection with the C.P.R. transcontinental line.

The Board of Railway Commissioners has approved location plans of the line from mileage 0 to 5, and plans for bridges crossing the Coldwater and Kettle rivers.

The Spokane and British Columbia Ry., which is the Washington end of the K.V.R., is fighting in the U.S. law courts with the Great Northern Ry. over a right of way through the Colville reservation grant, in connection with its projected railway from Republic to Spokane, Wash. A Spokane dispatch says if the S. and B.C.R. succeeds in its contention, the line will be at once built, the C.P.R. doing the financing, and the whole of the Kettle Valley Lines being taken over. (Aug., pg. 733.)

Kingston and Pembroke Ry.—It is proposed to carry out a number of improvements and repairs, other than ordinary maintenance, on the line during the current year. These works include the relaying of 30 miles of track with new 65 lb. steel rails, a considerable expenditure on ballasting and ditching, bridging and culverts, new fencing and buildings, besides work at the Y's at Sharbot Lake and Renfrew, Ont.

Kootenay and Alberta Ry.—The crossing of 15 highways in Alberta by the company's projected railway has been authorized by the Board of Railway Commissioners. (July, pg. 647.)

Lingan Coal Co.—The Atlantic Coal Co. was incorporated by the Nova Scotia Legislature in 1902 to carry on coal mining in Nova Scotia, and in connection therewith to build railways. The provisional directors were A.C., H. and H. S. Ross, of Sydney, N.S. The Legislature last session changed the name of the company to the Lingan Coal Co.

The Liverpool and Caledonia Ry. Co. was incorporated at the last session of the Nova Scotia Legislature, to build a railway from a shipping point in Queen's county, to Caledonia, and thence to a shipping point on the Bay of Fundy in Annapolis county, with branches to make connections with other lines, etc. The company may operate the line by steam, electricity or any other power. The provisional directors are D. H. Foresman, V. J. Paton, Bridgewater, N.S.; J. M. Hastings, Pittsburgh, Pa.; C. O. Shepherd, New York. (May, pg. 411.)

London and Port Stanley Ry.—In connection with the approaching termination of the lease of this line to the Pere Marquette Rd. (as successor to the Lake Erie and Detroit River Ry.,) the London city council, which owns the line, is considering the question of electrifying it. It was reported to the council that the P.M.R. has been doing the minimum of repairs and that the roadbed is deteriorating. (Feb., pg. 111.)

Minneapolis and St. Louis Rd.—Iowa Central Ry.—W. G. Baird, Vice President, is quoted as having recently stated that there is to be no merger of the Minneapolis and St. Louis Rd. and the Iowa Central Ry., consequent on the appointment of N. Erb as President of both companies, and that there is no foundation in the report that the companies' lines will be extended to the Canadian boundary so as to connect with the Canadian Northern and G.T. Pacific railways. Notwithstanding this, the New York Financial World, states that N. Erb represents interests associated with the Canadian Northern Ry., and the G.T. Pacific Ry. and that the Minneapolis and St. Louis Rd. will build 250 miles of line from its present terminus in South Dakota, to connect at the international boundary with C.N.R. and G.T.P.R. lines. Later reports state that the Iowa Central Ry., will be extended to St. Louis, Mo., and that there would thus be formed a through connection between the Canadian lines and St. Louis, the Mississippi River giving water connection with the Gulf of Mexico.

Another report states that connection will be made with the Canadian lines by a line to be built from either Leola or Watertown, S.D., and that another line will be built from St. Paul, Minn., to Winnipeg, Man. (Sept., pg. 829.)

Pacific Trans-Canada and Hudson Bay Ry.—Application will be made next session of the Dominion Parliament for an act incorporating a company with this title to build a line from Edmonton northerly to Athabasca Landing, thence north westerly, northeast of Lesser Slave Lake to Wabisca or Loon River, thence northerly to the confluence of the Loon and Peace rivers, or that of the Red and Peace Rivers, near Fort Vermillion, thence northerly to Fort Smith, with a branch from the crossing of the Wabisca or Loon rivers easterly to Fort Murray, and on to Fort Churchill or Port Nelson, on Hudson Bay, and another from the same starting point westerly via Laurier Pass to Prince Rupert or Portland Canal, B.C. Smith and Johnston, Ottawa, are solicitors for applicants.

Prince Edward Island Ry.—Tenders are under consideration by the Department of Railways for the construction of a branch line from O'Leary to West Point, and tenders have been asked for building of a line from Stanley Bridge to New London, P.E.I. and for a line from Clifton highway bridge to Stanley bridge, about 3.75 miles. Votes on account of the construction of these lines were made last session of the Dominion Parliament. (Sept., pg. 855.)

Quebec and Saguenay Ry.—We are advised that the section of the line from Point a Pic wharf to the Chutes, (where there is a large pulp mill under construction by the East Canada Pulp Co.) will be completed this fall. A 65-ton locomotive and 12 flat cars have been delivered for ballasting the line and transporting the machinery from the wharf to the mill site. The Bishop Construction Co., Montreal and Toronto, has the contract for this section of the work. It is expected that surveys for the continuation of the line from the Chutes towards Cape Charles, at the mouth of the Straits of Belle Isle, will be started this fall. (Sept., pg. 855.)

Quinze River and Ottawa Ry.—The Dominion Parliament will be asked next session to incorporate a company with this title to build a railway from near Kipawa, connecting there with the C.P.R. Kipawa branch northwesterly to the Quinze River. Smith and Johnston, Ottawa, are solicitors for applicants.

Reid Newfoundland Ry.—W. D. Reid, President, made a trip of inspection over the Bonavista branch line, Sept. 9, preparatory to its being opened for traffic. (Sept., pg. 855.)

St. John Valley Ry.—The Provincial Secretary of New Brunswick, in a recent speech said he expected that within a few weeks the Government would receive information from England that the necessary funds for financing construction would be forthcoming. A contract between the St. John and Quebec Ry. and the Provincial Government for the building of the line from St. John to Grand Falls, N.B., had been agreed to, and another for the operation of the line by the Intercolonial Ry. had been prepared. As soon as the Government's financial agents in London, Eng., approved of these, the starting of construction would be arranged. (Sept. pg. 855.)

The Shelburne and Bear River Ry. Co. was incorporated at the last session of the Nova Scotia Legislature, to build a railway from Shelburne to Bear River, with branches to any shipping point in the counties of Digby or Annapolis. The provisional directors are: J. A. McElwain, C. J. Prescott, S. King, Boston, Mass. V. J. Paton, Lunenburg, N.S. (May, pg. 413.)

Sydney and Louisburg Ry. Co.—The Nova Scotia Legislature has authorized this company to acquire the railway, rolling stock and terminals of the Dominion Coal Co.

Sydney, Waterford and East Bay Mono Rail Ry.—The company is authorized to build a railway or monorail line in Cape Breton county, from Sydney to East Bay, and from Sydney to New Waterford, N.S. The company is also authorized to acquire other railways already built in the county. The provisional directors are: D. McQuaig, J. P. Joy, J. B. McCormack, D. A. Cameron, Sydney, N.S. (May, pg. 413.)

Temiskaming and Northern Ontario Ry.—The Commission has laid out a townsite at Iroquois Falls, Ont. the starting point of the branch to the Porcupine district. A passenger service has been started on the branch to South Porcupine, and the spur line to the Dome, with a branch to Dome extension has been completed. The extension of the Porcupine branch to Pearl Lake is being proceeded with. The proposed terminus of the extension is the Campbell veteran claim, west of the Hollinger mine. (Sept., pg. 855.)

Vancouver, Westminster and Yukon Ry.—Test holes are now being driven on the site proposed by the V.W. and Y. Ry. for the bridge to be built jointly with the Burrard Inlet Tunnel and Bridge Co., across the Second Narrows of Burrard Inlet. The trestle work is also being erected on the site. (Sept., pg. 855.)

Elgin and Havelock Railway.

The report for the year ended June 30, presented at the annual meeting at Halifax, N.S., Sept. 6, shows assets consisting of plant and equipment, of $96,959.96, and liabilities of $107,203.73, made up as follows: capital account, $44,900; accounts payable $521.53; cash, $1,807.21; bond interest, $9,974.99; bond account, $50,000.

PROFIT AND LOSS ACCOUNT.

Freight earnings—		
Elgin	$3,383.94	
Havelock	4,772.22	
Petitcodiac	596.17	
	$8,752.33	
Less paid I.C.R.	1,132.14	$7,620.19
Passenger earnings	$3,193.02	
Less paid I.C.R.	592.33	2,600.49
Dominion Express Co.		91.46
Post Office Department		676.08
Balance		10,243.77
		$21,231.99
Balance from June 30, 1910		$8,350.38
Bond interest		2,500.00
Operating expenses		10,381.61
		$21,231.99

Following are the officers and directors for the current year: President, R. T. Harris, K.C., other directors, B. F. Pearson, K.C., and C. H. Cahan, K.C.

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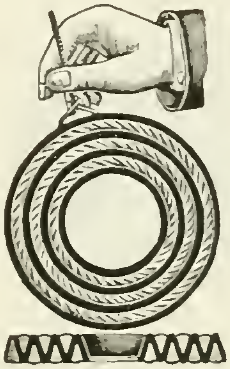

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Great Northern Railway Lines in Canada.

Midland Great Northern Ry. or Midland Ry. of Manitoba.—While all the negotiations respecting the location of what are known as the "Midland" terminals have taken place between the Winnipeg city council and representatives of the Great Northern Ry., there is some speculation as to what interests are really behind the matter. The Midland Ry. Co., of Manitoba's charter originally obtained primarily in the interests of the Northern Pacific Ry., but the two lines already built under it, were built by the G.N.R., and are being operated by it. The Midland Great Northern Ry. was incorporated with power to take over the Midland Ry. of Manitoba, and in the negotiations sometimes one name was used and sometimes the other. Local papers of recent date state that the Northern Pacific Ry. has an interest equal to that of the G.N.R. in the line now being built into Winnipeg, and in the terminals being laid out, whatever may be the ownership of the lines, to Portage la Prairie, and to Morden.

Track laying has been started on the line in Winnipeg, and it is expected to have most of it done this year. Work is being rushed on the subways, and about half the work on the freight sheds has been completed.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—J. L. Kennedy, chief engineer, is reported as saying that the final survey to the summit of the Hope Mountains has been made and that contracts will be let for construction in the near future. Track will be laid from Princeton to Coalmount on the Tulameen River this fall, and then the section to the Summit will be gone on with. Survey parties are on the field locating a route from the Summit to Hope, near where connection will be made with the Canadian Northern Pacific Ry. Between Hope and Chilliwack the Canadian Northern Pacific Ry. will be used, and into New Westminster the company's existing line will be used. The Board of Railway Commissioners has ordered the company to file plans for the proposed shunting tracks at Sapperton, and the company promised to proceed with the erection of a new station at New Westminster at once.

New Westminster Southern Ry.—Plans for the construction of a new station at New Westminster, were laid before the city council, Sept. 12. The site will be on block M., which was deeded to the city by the provincial government for station purposes for $1 a year on a 99 year lease. The city in transferring the property stipulates that other railways shall be entitled to use the building.

Vancouver Terminals.—The steel for the new bridge over the big cut at Park Drive has been delivered, and it was expected that the erection would be completed Sept. 29.

A contract is reported let to the Dominion Creosoting Works, Vancouver, for the provision of piles necessary for the erection of the new wharf at False Creek, and it is said that W. H. Chase, also of Vancouver, has been given the contract for driving the piles. There will be 3,000 piles to be driven.

A. H. Hogeland, Chief Engineer, G.N.R., St. Paul, Minn., after a recent inspection of the works in progress, stated that the company's plans for the development of its interests in Vancouver were practically completed, and the work would be put in hand as speedily as possible. (Sept., pg. 847.)

The Board of Railway Commissioners has authorized the C.P.R. and the G.T.R. to operate an interchange track in St. Marys, Ont.

Central Railway of Canada.

In connection with the issue of bonds for the construction of this railway, it would appear that the original grant of land was in favor of the Carillon and Grenville Ry. Co., and that the Canada Central Ry. Co. was one of a group of railway companies incorporated with a view to carrying out the project, and entitled to participate in the land grant. The company is advised by eminent counsel, not only in Canada but in Great Britain that "no legislation has affected the rights of the Carillon and Grenville Ry. Co., and the right of that company to call for the land grant remains in force."

A legal action as to the land grant was tried in 1873 and 1874, and is reported in 20 Grant's Chancery reports, pg. 273, the decision dealing with the land grant and the method of distribution among the several railways entitled to it. The Canada Central Ry. Co. succeeded in regard to about 360,000 acres of land in respect to the 28.5 miles of line between Ottawa and Carleton Place, Ont., and it is said that this was afterwards commuted for a cash subsidy of about $13,000 a mile. The payments made to the Canada Central Ry. Co. as an "exceptional subsidy" amounted in all to $1,525,250, and as the company built 120 miles of line this would work out to over $12,700 a mile. The contention is that the agreement with the Canada Central Ry. Co., only affects that company and the mileage constructed under its charter, and that the land grant is still available for any company building the balance of the line under the charter of the Carillon and Grenville Ry. Co., or its successors. The Railway Act of 1903 gives a purchasing railway the right to a land grant attached to a purchased railway, and this right is claimed to be fully protected by secs. 152 and 153, of the Railway Act in the Revised Statutes of Canada of 1906. The land grant available for the company originally would be about two-thirds in Ontario and one-third in Quebec. With reference to the sale of the physical property of the Carillon and Grenville Ry. to the Canadian Northern Ry. or allied interests, it is contended that neither company has power to sell to the other, and that the sale has not been properly ratified. The proceedings which it is proposed to take will set this matter right.

So far as the old Ottawa Valley Ry., which is the charter upon which the Central Ry. of Canada has been built up, is concerned, we are advised that seven miles of the line has been graded, and we are also advised that the C. Ry. of C. owns the charter of the Central Counties Ry., which covers the equity in the constructed lines leased to the Canada Atlantic Ry., and now operated by the G.T.R. The annual meeting of the shareholders was held in Montreal Sept. 6, C. Ross Dobbin, Guardian Bldg., Montreal, being the Secretary.

At a meeting of the directors of the Central Ry. Co. of Canada, held in Montreal, Sept. 4, W. D. Hogg, K.C., Ottawa, was elected a director.

We are advised by a representative of the contractors, C. J. Wills and Sons, London, Eng., and Montreal, that it is intended to start work on the main line from Montreal to Ottawa immediately, and a director of the railway is reported to have stated in Ottawa, Sept. 13, that the work would be started at Hawkesbury, that grading would be completed easterly and westerly for a total distance of 40 miles, by the end of the year, but that track laying would not be started until the spring, when grading on the Ottawa-Midland section of the line would be started.

Meetings of the shareholders of the Ottawa River Navigation Co., and of the Carillon and Grenville Ry. have been called to be held in Montreal, Oct. 18, "to authorize and confirm the sale and transfer of the company's charter, and all rights, properties and franchises thereof to the Central Ry. of Canada, and to do all such things as may be necessary to carry out and complete the said transfer."

Intercolonial Railway Harbor Terminals at Halifax.

The contract for the construction of the first section of the new deep water terminals for the I.C.R. at Halifax, N.S., has been let by the Department of Railways to the Nova Scotia Construction Co., Sydney, N.S. at a cost of approximately $915,000.

The layout of the present I.C.R. deepwater terminals, which are situated along Tidewater St., includes four piers. In the new layout, plans for which have been prepared by J. Kennedy, Consulting Engineer, Montreal, no. 1, pier will not be interfered with, but it is proposed to remove piers 2, 3 and 4, and to replace them by longer and broader structures, with more extensive shed accommodation thereon, and with deeper water alongside. The work proposed to be carried out under the present contract, involves the construction of what is known as the new pier and shed no. 2. This pier will be 808 ft. long, and 235 ft. wide, and will be provided with a two-story shed. The other three piers will be similar in size and construction, and there will be a depth of 34 ft. alongside each pier, with a width of 280 ft. between each pier.

The contractor for no. 2 pier, is called upon to clear the site of the existing buildings, deepen the basins on either side of the pier, protect the existing cribwork and pile the foundation of the Immigration Building and other work incidental to the construction. The pier will consist of a bulkhead at the shore end, and the pier proper will be built on concrete trestles, braced, and facings and deck. The bulkhead is to be built in cribs or blocks reaching up to about 2 ft. above low water; above that level the crib work is to be built continuous, and finished with a coping of two 12 in. square creosoted timbers laid side by side. The cribs are to be filled with stone to at least 15 ft. high above the bottom, and above that to rail level with earth or other good filling. The pier itself is to be built on reinforced concrete piles, calculated to stand a load of 85 to 90 tons on each pile, driven to rock, stayed as they are driven, and the brace piles are to be moulded on such a curve as to make a uniform stress throughout the cross section of the pile under a compressive load of 80 tons on the pile head. The flooring will be of reinforced concrete, with granolithic surfacing, and the pier above low water will be protected with creosoted timbers. The contractor will lay the railway tracks on the pier, all the steel and fastenings being supplied by the I.C.R. Two hundred feet of the pier floor is to be completed by Feb. 15, 1912, that progress may be made with the shed construction. The shed is to be built entirely of reinforced concrete, the flooring of the second story being surfaced with granolithic. The doors at the side and east end of the shed are to be of steel frames plated with iron, and carried on rollers running on bottom tracks and girded on the top. The windows are to be of wired glass. At the west end of the building there will be offices for the staff. The roof of the shed will be finished with tar and gravel. The entire work of building the pier and shed is to be completed by Oct. 15, 1912.

Vanadium Alloys made by this Company have been specified in the manufacture of steel forgings and castings for the Panama Canal.

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National Transcontinental Railway Construction, Etc.

The plans for the entrance of the N.T.R. into Quebec, are divided into two sections, the first showing the double-track line between the bridge over the St. Lawrence River, and the terminal yard, and the second the general arrangement of the tracks and buildings in the terminal yard. There will be one yard with four sets of tracks, parallel with Champlain St., along the harbor front between some existing ice houses, and near Lampson's Cove; while the real terminal yards and terminal buildings will extend from near the Allan Co.'s pier, to the boundaries of the Champlain market site. The whole area between Champlain St. and the protection wall will be covered with tracks, and provision is made at the waterfront for a freight shed 500 ft. by 80 ft. Provision is also made for other buildings at convenient points in the yard. The station site is 200 by 100 ft., with a 50 ft. concourse. The platforms 608 by 15 ft. will extend from the concourse to near the existing Queen's wharf, three platforms being shown on the plan. Tenders for the erection of the station building, a description of which was given in our last issue, are under consideration.

Contracts are reported to have been let to C. A. Murphy and J. A. Lea, Moncton, N.B., for the erection of buildings on the line between Moncton and Beaver Brook, N.B., at an estimated cost of $150,000. Tenders will be received to Oct. 2, for the erection of a trainmen's house at Cochrane, Ont.

We are advised that it is not contemplated that any change will be made at present in the operation of the N.T.R. from Winnipeg to Lake Superior Jct. The G.T. Pacific Ry. began to operate its trains on the section in Oct., 1910, but under the contract with the Government, will not take over any part until the whole line is completed through between Winnipeg and Moncton.

Rapid progress is being made with the laying out of the yards at Transcona, near Winnipeg, the site of the principal western shops. About 125 carloads of gravel a day have been dumped round the buildings for filling in, and levelling and tracklaying is being proceeded with. The J. D. McArthur Co. is doing the work. The erection of the buildings by Haney, Quinlan and Robinson, is making satisfactory progress.

We were advised Sept. 20, that a contract has been let to J. King, for the construction of station and other buildings on the line between Cochrane and Superior Jct., Ont. Press reports state that portions of the work have been sublet to C. Masher, A. Haequoil, and J. Lavoie.

Grand Trunk Pacific Railway Construction, Etc.

C. M. Hays, President, G.T.R. and G.T.P.R., accompanied by several directors and officers of both companies, returned to Winnipeg, Sept. 16, from a trip of inspection over the entire line. The President expressed his satisfaction with the progress being made; there was plenty of labor, and the general conditions of weather, etc., had been favorable, to the advancement of the work.

A contract has been let to the George A. Fuller Co., Montreal, for the erection of the company's hotel at Winnipeg, the Selkirk. Preliminary work on the site is in progress and the contractors expect to start on actual building operations immediately. The building is to be completed by the end of 1912.

The Board of Railway Commissioners has approved location plans for the projected Brandon branch, mileage 0 to 18.36. The branch starts from the main line near Harte, and work was reported to have been commenced at that point Sept. 1, by Rigby, Hyland and Plummer, a member of which firm is reported as stating that a contract had been awarded them for grading 28 miles from Harte, and the five miles from Brandon, which will complete the branch. The mayor of Brandon informed the city council, Sept. 6, that it was expected to have the branch completed this year, but this would depend on whether rails could be obtained or not.

The Board of Railway Commissioners has authorized the company to connect its Yorkton branch with the Canadian Northern Ry. at Canora, Sask.; to carry traffic over the entire line from Melville to Regina, rescinding the previous orders. Under this order a regular passenger and freight service was inaugurated Sept. 7, there being one train each way on alternate days between Melville and Regina. The freight sheds being built at Regina are not expected to be ready until the end of Oct., meanwhile the old Allan house is being used as a temporary freight and passenger station. The passenger traffic will ultimately be accommodated in the new union station being built by the C.P.R.

It is expected that about 25 miles of steel will be laid on the line from Regina towards the international boundary this fall. About 30 miles of grading has been completed.

We are officially advised that there is no present intention of building a line starting from a point 13 miles out of Regina, on the branch now under construction, passing through Weyburn to the international boundary as stated in press reports.

With respect to the line under construction from Regina towards Moose Jaw, local reports, Sept. 10, state that it is extremely improbable that any steel will be laid this year. About 30 miles of grading has been completed, and work on the remaining 15 miles is well advanced. The biggest piece of work on this section is the trestle bridge over the Grand Coulee, in which there is about 1,500,000 ft. of timber. Rigby, Hyland and Plummer have the contract for this line.

Rigby, Hyland and Plummer also have the contract for the line being built from Moose Jaw, westerly, which will ultimately be connected with the line now under construction from Tofield to Calgary, Alta. Fifty miles of the line has already been placed under contract, and grading over this distance is practically complete.

We are officially advised that it has not been contemplated to build a line from Moose Jaw northwesterly to Young, Sask., as stated in press reports.

The question of the terminals in Moose Jaw is under consideration. The company desires to purchase 6.05 acres from the city for right of way across the city, and there is considerable opposition to the sale.

We are officially advised that there is no present intention of building a branch from Saskatoon to Battleford, Sask.

The Board of Railway Commissioners has approved revised location plans for the Prince Albert Branch, mileage 105.04 to 109.01. Press reports state that work on this branch is being rapidly pushed forward; that steel has been laid as far as Waka, 68 miles from the main line, and that grading has been completed to within 24 miles of Prince Albert.

Grading is reported to be practically completed on the first 50 miles of the line from Biggar, Sask., towards the Tofield-Calgary branch. The Board of Railway Commissioners has approved the location plans of a fourth section of the branch.

The Board of Railway Commissioners has approved location plans of the Cutknife branch from mileage 14.66 to 41.45.

The bridge across the Red Deer River is reported to have been completed, and tracklaying on the Tofield - Calgary branch has been resumed. Following the agreement with the C.P.R. respecting the building of the branch through that company's irrigated lands, the Board of Railway Commissioners has authorized the preparation of new plans, the occupation of C.P.R. lands between mileage 150 and 190, the crossing of the C.P.R. Langdon branch, and certain revised location plans.

During the recent visit to Edmonton, Alta., of C. M. Hays, President, and other directors and officers, the city ciuncil was informed that as soon as the necessary legal steps had been taken by the city to close certain streets, work would be started upon the proposed hotel.

Construction is reported to have been started on the erection of car shops at Edson, Alta. The shops will be 200 by 60 ft., with a machine shop adjoining. The plans for this latter shop are reported to be in preparation.

Considerable difficulties are being met with, according to reports, in the construction of the branch from Bickerdike, near Edson, southerly to the coal fields. The branch will be 56 miles long, and the work includes the crossing of a summit 500 ft. higher than the Yellowhead Pass; considerable tunnelling along the Embarras River, and the building of a bridge across that river at a point where the banks are high, and where there is a good deal of quicksand in the river bed.

There is no present intention, we are offificially advised, of building a line from west of Edson, Alta., into the Peace River country.

Steel was reported to have been laid, Sept. 1, to Fitzhugh, in Jasper Park, Alta., 1,027 miles from Winnipeg, and it is expected to have the track laid for about a further 60 miles to Tete Jaune Cache this season. It is expected to have a train service in operation to Fitzhugh, early in October.

President C. M. Hays made the definite announcement, during his recent trip over the line, that the contract for building the line from Tete Jaune Cache to Aldermere, B.C., 415 miles, had been let to Foley, Welch and Stewart, the firm having at present the contracts terminating at the two points named. Construction gangs are being sent in as fast as the work is completed east of Tete Jaune Cache, and clearing work is reported to be in progress at various points as far west as Fort George. At this point the reversionary interests of the Indians in the reservation are being acquired by the company, the agreement having been signed by the chiefs, Aug. 31. At the western end of the contract, a report states that M. Sheady & Co. have been given a sub-contract for the clearing of 50 miles out of Aldermere.

The agreement between the city of Prince Rupert and the company was practically unanimously approved by the vote of the citizens, Sept. 2. The agreement provides that the company is to pay $15,000 a year taxes on its lands for ten years, give the city 3,200 ft. of water frontage; several sections of land for park purposes, 60 acres for a cemetery site; to build a dry dock at a cost of $2,500,000, and to erect station, car and machine shops, and a roundhouse at a cost of $1,000,000. The plans for the different buildings have been prepared, and preliminary construction work has been started.

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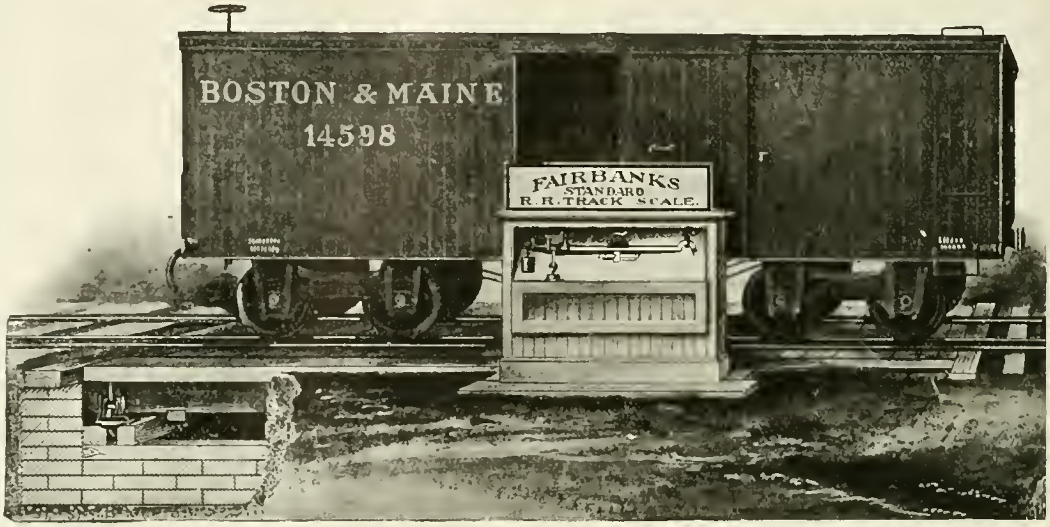

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CORLISS ECONOMY WITH A POSITIVELY DRIVEN VALVE GEAR

By eliminating the springs, dashpots, latches and detachable parts of the usual forms of Corliss gear

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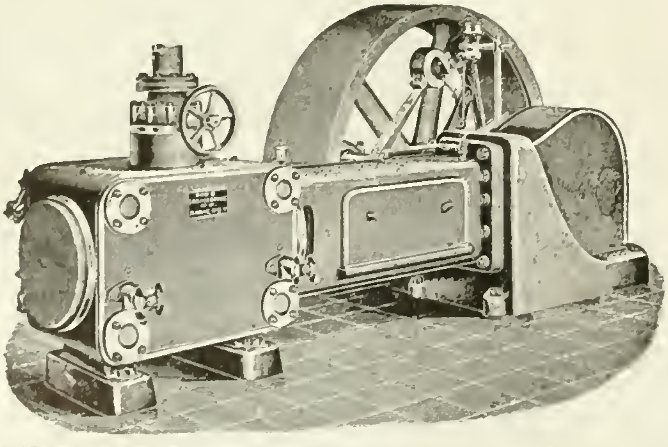
ARE SAFE because there's no governor belt to break, no releasing gear to fail to trip and allow the engine to "run away."



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Railway Finance, Meetings, Etc.

Dominion Atlantic Ry.—The head offices of this company have been changed from London, Eng., to the C.P.R. Windsor St. station, Montreal, where the annual meeting of the shareholders will be held Oct. 13.

Gross earnings for July, $160,600, against $148,432 for July 1910.

Grand Trunk Pacific Ry.—The annual meeting of the shareholders, which was to have been held in Montreal, Sept. 19, was postponed, until after the return of C. M. Hays, President, from his western trip.

London and Port Stanley Ry.—The question of the future of this line is again occupying the attention of the citizens of London, Ont. The present lease to the Lake Erie and Detroit River Ry., (which is owned by the Pere Marquette Rd.) expires in about two years, and it is stated that the P.M.R. has no desire to renew it.

Maritime Coal and Ry. Co.—The Nova Scotia Legislature has authorized the company to issue, with the approval of the shareholders, 10,000 preferred shares of $100 each, bearing 7% interest.

Massawippi Valley Ry.—The annual meeting was held at Stanstead, Que., Sept. 6. The following officers and directors for the current year: President, J. G. Foster; Vice President, C. W. Cate; other directors, J. W. Dunklee, C. H. Kathan, C. D. White, F. N. McCrea, E. O. Grundy, H. N. Turner and J. H. Williams.

New Brunswick Ry.—The report for year ended June 30, shows gross earnings from stumpage, $192,437; from sundries $466; total earnings $192,903; expenses including taxation, management, etc., $29,798; surplus from previous year $24,088, total surplus at June 30, $187,194. At the recent annual meeting a dividend of $4 a share was declared, absorbing $120,000, leaving $67,194 to be carried forward.

Quebec Central Ry.—Gross earnings for June, $129,359.06; expenses $84,228.34; net earnings $45,130.72, against $121,032.42 gross earnings; $82,117.85 expenses; $38,914.58 net earnings for June 1910. Aggregate gross earnings for 12 months ended June 30, $1,208,948.88; expenses $820,803.12; net earnings $388,145.76, against $1,105,866.77 aggregate gross earnings;; $759,555.75 expenses; $346,311.02 net earnings for same period 1909-10.

Subject to audit, the gross receipts for the year ended June 30, including interest, were $1,217,255 working expenses, $820,803; net receipts, $396,452; interest on first and second debenture stock $165,873; balance $230,579, less full interest on 7% income bonds $115,545, leaving a balance of $115,434, from which the directors recommend a dividend of 3%.

Quinze and Blanche River Ry.—At the recent annual meeting in Ottawa, Ont., the following officers and directors were re-elected for the current year: President, Hon. E. H. Bronson; Vice President, F. P. Bronson; other directors, W. G. Bronson and H. W. Cole; Secretary Treasurer, L. rannell.

Temiscouata Ry.—Profit on operation for June, $7,592, against $6,450 for June 1910. Aggregate profit for six months ended June 30, $21,174, against $21,828 for same period 1910.

Victoria and Sidney Ry.—The Victoria, B.C., city council contends that the V. and S.R. owes $170,000. The Great Northern Ry. interests have taken over the line, and it is said made an offer of $29,000 in liquidation of the debt, that amount being stated to be in excess of income over operating expenses. A special committee of the council has the matter under consideration, and is hoping to secure a satisfactory arrangement by which the whole amount will be recovered.

White Pass and Yukon Ry.—Gross earnings for seven months ended July 31, $539,110 against $627,679 for same period 1910.

Grand Trunk Railway Construction, Betterments, Etc,

New England Lines Proposals.—A special act passed last session of the Vermont Legislature, gave power to the Public Service Commission to arange for the building and operation of a union station by the railways entering Burlington. The Commission sat there Sept. 6, to hear the views of the Central Vermont Ry., and the Rutland Rd., as to which of them should build the station. The C.V.R. has presented a plan for the building of a station to be owned and operated jointly, and for the separation of all grade crossings in the city. The plans is generally approved by the citizens, and the hearing was adjourned until Oct. 24, with the object of enabling the two railways to agree on plans and terms so that a consent order can be made.

Press reports, Sept. 15, state that the G.T.R., through allied interests, has secured control of two trolley lines which will give it a through connection from Portland, Me., to Boston, Mass.

Tracks, Bridges and Buildings.—The Board of Railway Commissioners has authorized the company to build an additional track across Ste. Anne's and Bourdages streets, St. Hyacinthe, Que.; to build an additional passing track at Thedford, Ont.; to rebuild its most southerly track crossing Seventh line road, Oakville, Ont.; to build an additional track across the public road between lots four and five Saltfleet tp., Ont.; to build a branch from its yards at Winona, Ont., to the station of the Hamilton, Grimsby and Beamsville Electric Ry.; to build a branch at Nipissing Jct., Ont., crossing the C.P.R., and connecting with the Temiskaming and Northern Ontario Ry., an interlocking plant to be installed.

The Board has authorized the use for traffic of bridges 15 and 16, over the St. Lawrence River at mileage 55.63 and mileage 54.12, the use of five other bridges on the Eastern Division, and the building of the following bridges: at Brooker's Crossing, Front tp., Ont.; at milepost 89.39, or 9.63 miles south of Richwood station, Ont., at Patton St., Grimsby Ont., and at Front Creek, near St. Marys, Ont.

The Board has approved location and detail plans for stations at Thorndale, Ont., and Winona, Ont., and authorized the building of a station and dwelling at Manilla Jct., Ont.

Kingston, Ont.—The company is reported to have purchased 400 acres of land at Kingston Mills, four miles from the city. Local reports state that it is the intention to remove the station at Kingston Jct. to Kingston Mills, and make that point the connection for its Toronto-Ottawa line via Smiths Falls. The present line from Kingston Mills to the city and outwards to the west is in the form of a loop. For some time the company has had under consideration the straightening of its line from the Mills to Collins Bay, whereby two miles in distance would be saved and two gradients eliminated. No official communications have passed between the company and the civic authorities as to any proposed changes.

Toronto Grade Elimination. — The Board of Railway Commissioners has authorized the building of bridges at Jameson, Dunn and Dowling Avenues, Toronto along the line of this work. The track at the Queen St. subway, Sunnyside, has been tunnelled under, and the abutments are being built. In connection with this work the Sunnyside bathing beach is being expropriated together with some adjoining property. The centre pier of the new bridge over the Humber river is approaching completion. The work of building this pier was a difficult one, as a cofferdam 30 ft. deep had to be built before the 65 ft. piles could be driven for the foundation work. The other work along the whole section to Mimico is well advanced.

Lansing, Mich.—We are officially advised that there is no foundation for the press reports that the erection of a large warehouse equipped with the latest mechanical appliances, is under contemplation for the company's business at Lansing, Mich. (Sept., pg. 831.)

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers to distinctly understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

The Goldschmidt Thermit Co., has issued pamphlet 20, showing the advantages of metals and alloys produced by its Thermit process.

The Northern Electric and Manufacturing Co., Ltd., Montreal, has increased its capital stock from $1,000,000 to $5,000,000, by the issue of 40,000 shares of $100 each.

Roland Yeates, formerly of the Rudel-Yeates Machinery Co., Montreal, is now handling the London Machine Tool Co.'s products, with office at 607 Canadian Express Building, Montreal.

The Safety Car Heating and Lighting Co.'s monthly pamphlet, Safety Heating and Lighting News for September, contains a number of interesting items relating to heating and lighting railway cars.

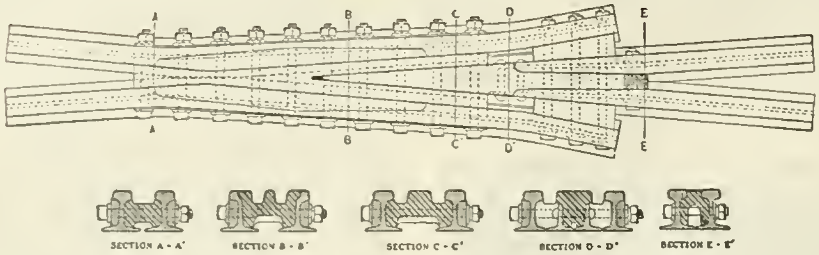
Butterfield & Co., Rock Island, Que., have issued an illustrated catalogue of taps, Reece's and Derby screw plates, stocks and dies, hand and machine reamers, taps and dies for all purposes and tools for engineers and steam fitters, copies of which may be obtained on application to them.

The American Vanadium Co.'s monthly publication, American Vanadium Facts, for September, contains a number of concentrated comments by users of Vanadized metals, chiefly Vanadium steel, together with an article on the epoch of alloys and description of various works in progress where Vanadium steel has been specified.

The Canadian Westinghouse Co., Hamilton, Ont., has issued circular 1028, describing its rotary converters; circular 1190 describing its engine driven alternating-current generators, type E, and folders illustrating its watt-hour meters, types C and OA, the latter for residence loads, and A.C. and D.C. switchboard meters.

◆

During the twelve months ended Aug. 31, the following number of cars were used for the transportation of grain from the Prairie provinces; C.P.R., 57,615, or 60% of the total number; Canadian Northern Ry., 30,677, or 32% of the total number; G.T. Pacific Ry., 6,970 or 7% of the total number, and Great Northern Ry. 1,199, or 1% of the total.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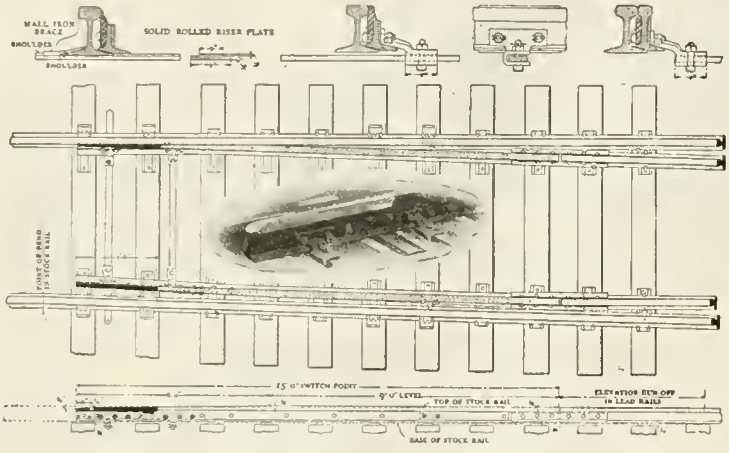
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POINT OF BEND IN STOCK RAIL
15' 0" SWITCH POINT
9' 0" LEVEL
TOP OF STOCK RAIL
ELEVATION RUN OFF IN LEAD RAILS
BASE OF STOCK RAIL

RAMAPO MANGANESE POINTED SWITCH Style No. 12

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Atlantic Division.—D. McNicoll, Vice President, visited St. John, N. B., Sept. 13, and in the course of an interview, is reported to have said that the extension work at West St. John would be undertaken as soon as possible, most probably in the spring of 1912. The company's plans for the development of the coal areas in Queen's county were not sufficiently defined to enable any announcement to be made. The plans are said to include the building of a line from Fredericton to Minto.

The Board of Railway Commissioners has authorized the building of a bridge at mileage 27.4 on the St. Stephen, N.B., branch; the closing of a crossing at the station and a diversion of the highway along Munquart River near Bath, N.B.; and the rebuilding of seven bridges on the Edmundston, N.B. subdivision.

Montreal to Ste Therese.—A contract is reported to have been let to M'Donald and Macdonell, Montreal, for the building of a double track bridge at Ste. Rose, on the line from Montreal to Ste. Therese, Que. The bridge is a steel structure of three spans, 158 ft. each, on masonry piers and abutments. The press reports add that the tourist traffic in the Laurentian Mountains this summer has been so heavy that it has been decided to lay a second track to Ste. Therese in time for next season's business.

Land Purchases in Montreal.—Transfer was registered recently of two blocks of land at Longue Pointe, to the C.P.R., the purchase price being $81,042.75. An area of 434,775 square feet adjoining the Glen yards has also been purchased by the company, with a view to providing for further extensions of the yards and station facilities.

The first of these purchases has to do with the new industrial lines which the company is laying in that district. The Board of Railway Commissioners has authorized the building of a bridge on the line from the Angus shops to Mile End quarry road, and the building of a third track on the north side of the present tracks between the Angus shops and Mile End.

The board of control informed the C.P.R., Sept. 19, that the plans for the new line from Place Viger station to Longue Pointe could not be approved as they involved additional level crossings. The company will submit modified plans.

Western Jct. near Montreal.—The contract for the works proposed to be carried out at Western Jct, near Montreal, to which reference was made in our last issue, has been let, so far as the building construction is concerned, to C. E. Deakin. The rest of the work will be done by the company's own forces. The locomotive house will be of steel and concrete construction and will have a mill roof. The boiler house will be equipped with 200 h.p. boilers, and the coaling plant will serve two tracks.

Ottawa Entrance Plans.—D. McNicoll, Vice President, had an interview with the Ottawa city council Aug. 29, in reference to the plans for the proposed new entrance of railway lines into the city.

Ottawa-Prescott Branch.—The Board of Railway Commissioners has approved of the temporary location on this branch at mileage 9.4 from Ottawa.

Montreal-Toronto Second Track.—In connection with the second track construction now in progress between Smiths Falls and Bathurst, Ont., the Board of Railway Commissioners has authorized the second track to be carried across Erwin St., Perth, and a number of highways.

Georgian Bay and Seaboard Ry.—The Board of Railway Commissioners has authorized the company to build across a number of highways, and road allowances, and to divert a number of road allowances.

Victoria Harbor, which will be the terminus of the line, on Georgian Bay, will on the opening become an important point for the interchange of lake and rail traffic. The company is spending considerable sums upon providing proper facilities for the handling of traffic. Fourteen miles of track has been laid in the yards, and grading for an additional 11 miles has been completed. The buildings, etc., being erected, include a 6-stall locomotive house, with machine shop attached; machine shop, equipped with a 72 in. and a 36 in. lathe; shaper, bolt-cutter and radial drill; oil and storehouse, with 12 oil tanks in the cellar, from which oil is pumped to the store above; bunk house; 70 ft. turntable; two track ashpit; two track coaling plant; laundry, ship stores and office; icehouse; freight shed, 750 ft. long; flour shed, 300 ft. long; 2,000,000 bush. elevator; eight cottages; large boarding house; two boarding houses to accommodate 150 men; and 8,400 lineal feet of wharfage. All the buildings are to be lighted by electricity, and the company is installing its own fire, water and lighting systems.

Nothing definite has been announced as to when the upper lake steamboat service will be transferred from Owen Sound to Victoria Harbor.

A contract was reported let Sept. 20, to G. T. Martin, Smiths Falls, Ont., for the construction of all stations, freight sheds, water tanks, and other buildings on the line.

In a recent interview, D. McNicoll, Vice President, is reported to have stated that when the line was completed, the company would have a dead-level track all the way between the Georgian Bay and Montreal, in addition to having a route shorter by many miles than any other possible connection. As a result the company would use Victoria Harbor as a transfer point to and from Upper Lake steamboats, instead of Owen Sound, as at present.

Toronto Office Building.—A contract is reported let to the Geo. Fuller Co., for the erection of the new office building at the corner of Yonge and King streets, Toronto.

Campbellford, Lake Ontario and Western Ry.—In a recent interview, D. McNicoll, Vice President, is reported to have stated that several parties of engineers were preparing for construction on this line, which is to run from near Smiths Falls, to the lake shore and then on to Toronto via Port Hope.

South Ontario Pacific Ry.—We are advised that good progress is being made with the construction of the line from Guelph Jct. to Hamilton, Ont. The Toronto Construction Co. has the contract for the whole work, and has had a steam shovel at work since June 20, in cemented gravel at mileage 15.7 to the junction with the Toronto, Hamilton and Buffalo Ry. at mileage 16.28. The Toronto Construction Co., is doing all the concrete work itself, and expects to have it completed by Oct 31. The work from Guelph Jct., mileage 0 to Progresston, mileage 6, has been sublet to C. J. Price, who had previously been carrying out some railway work at Cobalt, Ont. J. Baskin, Norwood, Ont., has the sub-contract for grading from mileage 6 to 10.5; no sub-contract has been let for the work from this point at mileage 13, although it is expected to let one at an early date; Taylor and Love, Waterdown, are the sub-contractors for the next mile, on which they have two gangs at work; and L. W. Reade, Hamilton, is grading from mileage 14 to 15.7. The Price and Baskin contracts are expected to be finished this fall, and it is expected to have five or six miles of track laid from Guelph Jct., southerly, by the end of the year.

The Board of Railway Commissioners has authorized the building of the line across a number of highways, to divert certain others, to cross the G.T.R. in West Flamboro tp., and to build a bridge to carry Dundas St. in Waterdown over the line. It has approved detail plans for the bridge over the line at mileage 15.77.

London Improvements.—Work has been started on the new bridge over the Thames at Oxford St., London, Ont. This bridge will be of the solid truss type, and the old link and pin bridge, which it replaces, is being removed to Mattawa, Ont., where it will be re-erected.

The London city council has issued a permit for the erection of the remainder of the buildings in connection with the new roundhouse. They are to be of steel and concrete and will cost about $60,000.

Lake Superior Division Bridges.—The Board of Railway Commissioners has authorized the company to build bridges at mileage 27.34 and 95.15 on this division, and to use bridge at mileage 16.16 Webbwood sub-division.

Fort William Coaling Plant.—The Canadian Stewart Co. started work, Sept. 1, on the big coal handling plant and freight terminal on Island no. 1, Fort William, Ont. The estimated cost of the work is said to be about $2,000,000.

New Buildings, etc., Manitoba, Division.—Tenders are under consideration for trenching and laying pipe lines at Sidney and Newdale, Man., and it is also reported that it has been decided to erect new shops and a roundhouse at Neepawa, Ont.

Lanigan to Prince Albert.—We are advised that there is nothing in the press reports that a line is being located from Lanigan, via Humbolt to Rosthern, Sask. The company has under consideration the building of a line from Lanigan to Prince Albert, Sask., but nothing definite can be said as to when it will be built.

Brandon Station.—The existing facilities consist of two buildings, east and west, placed 50 ft. apart and built 60 ft. from north boundary of Pacific Ave. The ground floor is approximately the track level and is about 12 ft. below Pacific Ave. level. The greater portion of the existing building is to be removed and to be replaced by new work which will connect with the existing east building, and part of it, 50 ft. in width, will extend to the north boundary of Pacific Ave. When the work is completed, all departments will be enlarged and new ones added. On the ground floor, (track level), the refreshment rooms, baggage room, parcel checking room, telegraph office, Dominion Express room and office, men's smoking room and lavatory and store rooms, etc., will be located. On the first floor, (Pacific Ave. level) will be the general and women's waiting rooms, women's retiring room and lavatory, and the ticket office. The second floor will have the various railway operating offices. The exterior will be of brick and stone construction. The interior of the first floor will be finished in oak with marble base and terazzo floors. The contract for the construction of the station has been awarded to the Brandon Construction Co.

Union Station, Regina.—The new station at Regina, for the joint use of the C.P.R. and Canadian Northern Ry., is designed in a free renaissance style of

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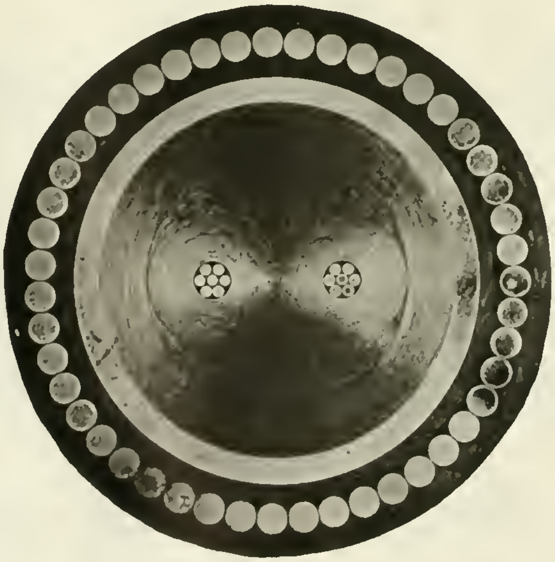

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architecture. The main building, centrally placed, is three stories high, with one story wings on each side, the total length is 316 ft., the width 62 ft. and the height of central portion 48 ft. The accommodation provided includes general waiting room, ticket office, men's and women's smoking and retiring rooms and toilet rooms. These take up the entire ground floor space of the central building, the dimensions being 120 by 59 ft. The ticket office, octagon shaped, is conveniently placed in the centre of general waiting room on the track side and opposite to the entrance vestibule from the front. There are wide doors placed to the right and left of ticket office and give access to the platform and track. The news, telegraph and telephone offices are in full view and placed at one end of the general waiting room. The baggage room, 64 by 58 ft.., is reached from the general waiting room through a wide corridor, on each side of which the public will have access to the baggage checkers, valises, parcels, customs, baggage master and transfer offices. An additional entrance is provided from this corridor to the platform. The C.P.R. and C.N.R. express rooms and offices, which are kept entirely separate, are placed to the right of main station building, the general dimensions being 105 by 57 ft. Large storage for the use of the baggage is placed in the basement, and a freight elevator is provided for the use of baggage department. The staff offices are placed on first and second floors of the main building and are well lighted and conveniently arranged around a central staircase, constructed of steel and white marbel, which leads directly out of the general waiting room. The buildings are to be of reinforced fireproof construction, the whole of the basement walls being of concrete and external walls of superstructure of brick faced with Bedford cut stone neatly tooled and moulded. The roofs are to be covered with tar and gravel and the whole of the interior walls and ceilings plastered. The general waitingrooms, etc., will be finished with white polished oak, the floors with terazzo mosaic, and maple floors will be laid in the baggage and express rooms and in the first and second floor offices. An ornamental glazed copper marquise will be fixed over the entrance to waiting room and glazed awnings over the baggage and express platforms. The buildings are to be heated throughout by a system of steam at low pressure supplied to vertical direct radiators placed in the various rooms. The electrical wiring will be done by the C.P.R. Co.'s own workmen. The contractors for the building are the J. McDiarmid Co., of Winnipeg, and the building was designed in the C.P.R. Assistant Chief Engineer's office, at Winnipeg.

Locomotive and Car Shops, Saskatchewan Division.—Press reports state that it is the company's intention to locate locomotive and car repairing shops for the Saskatchewan Division, at Weyburn, Sask. Some new plant and machinery for locomotive and car repair work is being installed at the roundhouse, and this is regarded as the beginning of the development.

Crave-Colonsay Branch.—The Board of Railway Commissioners has authorized the opening for traffic of this branch between Colonsay and Imperial, Sask. The branch connects via Craven, with the main line at Regina.

Forward to Ogema, Sask.—A train service has been placed in operation on the extension of the branch from Weyburn, towards Lethbridge, between Forward from Ogema. A further extension westerly from Ogema, is under construction.

Moose Jaw, Southwesterly. — The Board of Railway Commissioners has approved location plans of the branch from the main line at Moose Jaw, southwesterly for 35.39 miles. The latest map issued by the company shows that this line will connect up with the branch now under construction from Swift Current southeasterly, and that at or near the junction a branch will run south and join the extension of the line from Weyburn to Lethbridge, which now terminates at Ogema .

Moose Jaw to Macklin, Sask.—A Rosetown dispatch, Sept. 14, states that tracklaying on the extension of the branch from Moose Jaw has been practically completed. It is not expected that the line will be ready for operation until the spring, owing to the fact that the bridge across the Saskatchewan River at Outlook, will not be completed for some time.

Wilkie-Anglia and Wilkie-Kerrobert.—Grading has been completed on the first of these branches southerly from Wilkie, and tracklaying is being proceeded with. Fourteen miles of grading has been done on the second branch, which will terminate at Kerrobert, on the Moose Jaw-Macklin branch.

Castor to Kerrobert.—The Lacombe branch of the Calgary and Edmonton Ry. is being extended from its present terminus at Castor, Alta., to Kerrobert, Sask, and track was reported to have been laid to Coronation, Alta., 20 miles, Sept. 15. Press reports state that engineers are locating northerly and southerly from Coronation.

Cutknife Branch.—Considerable work is being done on the branch northerly from Wilkie, Sask., to the Cutknife district.

Irrigation Belt Branches.—The Board of Railway Commissioners has approved the location of the branch from Langdon,, Alta., northerly, from mileage 40 to 102.1. The branch is in operation as far as Acme, and the company's latest maps show it as effiecting a junction with the Calgary and Edmonton Ry. at Tuttle. From Irricana, on this line, there is a branch running easterly to Standard, from where the company's latest map shows it will be extended to Kininvie; and at the Irricana end to Crossfield. The Board of Railway Commissioners has approved the revised location of a line from Bassano to the Irricana branch, and a portion of the location plans for the same branch, mileage 0 northwesterly for 20.2 miles.

Medicine Hat to Calgary.—The fact that C.P.R. engineers are constantly making examinations of territory to ascertain its development, and making approximate surveys for branch lines, has probably given rise to the report that it is proposed to start work this year on the building of a line from Medicine Hat to Calgary, Alta. We are officially advised that there will be no such line built this year.

Edmonton to International Boundary.—We are officially advised that there is no truth in the report that the company is making surveys for a line from Edmonton, via Swift Current to the International boundary, about 100 miles west of North Portal. The line now being built from Swift Current northwesterly will not cross the Saskatchewan River, and there is no intention of extending the line now being built south easterly from Swift Current, to the International boundary.

Calgary Shops.—Tenders are under consideration for building an extension of the boiler house at Calgary, Alta.

Calgary and Edmonton Ry.—The Board of Railway Commissioners has authorized the carrying of the projected line into Edmonton, Alta., across the Edmonton, Yukon and Pacific Ry., in the Hudson's Bay reserve, the North Saskatchewan river, and Saskatchewan Ave. This is the high level bridge under construction, between Strathcona and Edmonton.

Western Shops.—Sir Thos. G. Shaughnessy, President, on his recent trip west, was questioned at various points as to the location of the proposed western shops. He stated at Calgary, that a special meeting of the direcors would be held to consider the matter shortly after his return to Montreal, and an announcement would be made about Oct. [illegible].

Fort William Terminals.—The increased business and the prospects of future expansion in business, which has to be handled at Fort William, is far greater than the company can meet with its present layout, and owing to the condition becoming somewhat congested, it has been decided to extend the developments on to the east side of the Kaministikwia River on the property that is known as Island no. 1. The company has recently purchased a large area of this island and intends ultimately to construct rather large facilities in the way of coal handling plants, freight sheds, etc. In order to properly serve such facilities, extensive yards will be necessary, also engine terminal facilities. In the lines of this development, the company is now constructing a bascule bridge over the Kaministikwia River on to Island no. 2, and also a rolling lift bridge from island no. 2. The only facility which the company is at present constructing on the island is the new coal handling plant, which, when completed, will have a storage capacity of 800,000 tons, a boat discharging capacity of about 10,000 tons a day and a car loading capacity of about 300 cars a day. The plants will be so designed that all these capacities can be increased when the company desires. There will be about six miles of yard tracks and sidings to serve the coal docks.

Waldo Branch.—The Board of Railway Commissioners has approved of the revised location of this branch between mileage 9.7 and 11.33 on lot 152 kootenay District, B.C.

Vancouver, Etc., Terminals. — The Board of Railway Commissioners has authorized the company leave to expropriate certain lots at Coquitlam, required for its proposed shops and yard facilities there.

Sir Thos. G. Shaughnessy, speaking to the Vancouver board of trade, Sept. 7, said the extensive new yards proposed to be laid out at Coquitlam would greatly relieve the traffic at Vancouver. Plans had been prepared for extensive improvements at the Vancouver station, but after full consideration it had been decided to build a new station, and plans for this were in course of preparation.

Esquimalt and Naniamo Ry.—The extension of the line into Alberni, is expected to be placed in operation Nov. 1. Work on the Cowichan Lake extension is being pushed rapidly. (Sept., pg. 845.)

Three Forks to Lucky Jim Mine.—The spur line under construction from Three Forks to Lucky Jim Mine, B.C., will be 3.5 miles long. The work is very light, the gradient is 3.5%, with 15 degrees of curvature. There is one frame trestle 800 ft. long and 75 ft. high to be built.

Canadian Pacific Railway Second Track Work in Saskatchewan.

The C.P.R. is building 23 miles of second track on its main transcontinental line from Pasqua through Moose Jaw to Caron, Sask., a distance of 23 miles. For a portion of the distance between Pasqua and Moose Jaw, a new double track line is being built, and on

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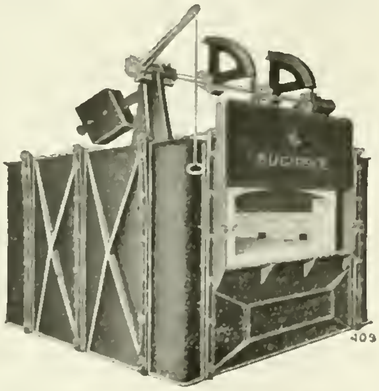

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the remaining distance a second track is being built on the old right of way allowance.

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The quantities on the Pasqua-Moose Jaw section of the work ran to 250,000 cubic yards, principally earth. The contractors were allowed to use all available dirt, which amounted to 110,000 cubic yards, the rest being removed for train filling. A steam shovel has been installed in cuts to get the minor quantity of dirt, and incidentally to widen the cuts, thereby hoping to avoid cuts being filled with snow during the stormy periods of the year. From Moose Jaw to Caron, 16 miles, the work consists of building a second track parallel with the existing track, 13 ft. centres, requiring about 105,000 cubic yards of earth. There are also on the work 16 small bridges over water courses, for which concrete abutments, requiring about 800 cubic yards of concrete, are required. Progress on the first section of the work has been slow on account of the very heavy traffic which does not give the work trains much chance to work steadily. From Moose Jaw to Boharm, eight miles, the track will be laid with all crossed ties, tie plates on all ties, and 85 lb. steel, and the rest of the mileage will be laid with 85 lb. steel on no. 1 ties. The contractor for both sections is the J. C. Hargrave Co., Ltd., Winnipeg, which firm did the second track work between Winnipeg and Portage la Prairie, Man.

◆

Traffic Orders by the Board of Railway Commissioners.

Summaries of other orders are given on another page, under "Orders by the Board of Railway Comimssioners."

Rates on Crude Oil, Stoy, Ill., to Toronto.

14386. May 16. Re application of British American Oil Co. Ltd., for an order declaring that the C.P.R. has unjustly discriminated against crude oil shipments from Stoy, Ill., to Toronto, by refusing to carry them at 20c. per 100 lbs., in accordance with published tariff and Official Classification; that the C.P.R. has overcharged the applicant; and that order 7093, made upon the complaint of the applicant against the G. T. R. is equally binding upon the C.P.R. It is declared that the legal rate chargeable on the said carload shipments was the fifth class joint through rate in effect at the time the shipments moved, as shown in the joint through tariffs published and filed with the Board, and in accordance with Official Classification 29, and subsequent issues thereof.

Rates on Petroleum, Etc., from Ohio and Pennsylvania.

14387. May 16,—Re application of Canadian Oil Companies, Ltd., against the G.T.R. and the C.P.R., complaining that the railway companies unjustly discriminated against them upon shipments of petroleum and its products from certain Ohio and Pennsylvania points to Toronto and other Canadian points, by refusing to carry such shipments in carloads, at fifth class rates in accordance with the Official Classification; that the companies overcharged the applicant and applying for an order prescribing proper tolls. It is declared that the legal rates chargeable on petroleum and its products, in carloads, from points in Ohio and Pennsylvania to Toronto, were the fifth class joint through rates in effect at the time the shipments moved, as shown in the joint through tariffs published and filed with the Board, and in accordance with Official Classification 29, and subsequent issues thereof

Approval of Supplement 2, to Canadian Classification 15.

14495. Aug. 4.—Re application of Canadian Freight Association for order approving proposed Supplement 2, to Canadian Classification 15, embodying a revision of the ratings on plate or mirror glass. It is ordered that the proposed supplement abolishing the form of shippers' "release" hitherto required to entitle shippers to certain ratings for plate or mirror glass of the said classification, and embodying certain amendments in the ratings necessitated thereby, but without advancing any of the said ratings, be approved, to take effect in Canada not later than Sept. 1, 1911.

Approval of Bulk Grain Bill of Lading

14591. Aug. 18.—Re consideration of new bulk grain bill of lading submitted for approval by the Canadian Freight Association on behalf of the railway companies, for use at stations west of Lake Superior, it is ordered that the form be approved, subject to the proviso that section 6 be amended to read as follows:

"Sec. 6. Notice of loss, damage, or delay must be made in writing to carrier at the point of delivery, or to the carrier at the point of origin, or to the claims agent of either, within four months after delivery of the bulk grain herein described, or in case of failure to make delivery, then within four months after a reasonable time for delivery has elapsed. Unless notice is so given the carrier shall not be liable."

◆

Transportation Men in the General Election.

F. N. McCrae (Liberal), President, Lotbiniere and Megantic Ry., was elected in Sherbrooke, Que., by 52 majority.

J. A. C. Ethier, (Liberal), director, Central Ry. of Canada, was re-elected in Two Mountains, Que., by acclamation.

M. L. Hersey (Liberal), consulting chemist, C.P.R., was defeated in St. Antoine, Montreal, by H. B. Ames, by 2,360.

Col. H. H. McLean, K.C. (Liberal), Vice-President, St. John Railway, was re-elected in Sunbury-Queens, N.B., by 238 majority.

D. A. Gordon (Liberal), President, Chatham, Wallaceburg and Lake Erie Ry., was re-elected in East Kent, Ont., by 300 majority.

E. Bristol, K.C., (Conservative), director, Richelieu and Ontario Navigation Co., was re-elected in Centre Toronto, Ont., by 2,124 majority.

Hon. G. P. Graham (Liberal), who has been Minister of Railways and Canals since Aug., 1907, was defeated in Brockville, Ont., by 125.

R. B. Hepburn (Conservative), President and General Manager, Ontario and Quebec Navigation Co., was elected in Prince Edward, Ont., by 281 majority.

Robt. Bickerdike (Liberal), President, Montreal and Great Lakes Steamship Co., was re-elected in the St. Lawrence Division of Montreal by 1,119 majority.

Hon. John Haggart (Conservative), who was Minister of Railways and Canals from Jan., 1892, to July, 1896, was re-elected in South Lanark by some 800 majority.

J. A. M. Aikins, K.C., (Conservative), who was elected in Brandon, Man., by 600 majority, has been C.P.R. Local Solicitor at Winnipeg since the company's inception.

H. B. McGiverin (Liberal), whose firm are solicitors for the Klondike Mines Ry. and who represented Ottawa, Ont., in the last parliament, was defeated by 1,112.

Jules Hone, Jr. (Independent Conservative), general railway and steamship ticket agent, and formerly City Passenger Agent, C.P.R., Quebec, was defeated in Quebec Centre.

C. A. Magrath (Conservative), formerly Land Commissioner, Alberta Railway and Irrigation Co., who represented Medicine Hat, Alta., in the late Parliament, was defeated there by 480.

E. B. Osler (Conservative), director, C.P.R., and President, Niagara Navigation Co., was re-elected in West Toronto, Ont., by 7,965, the largest majority obtained by any candidate in the Dominion.

S. Barker (Conservative), who was re-elected in Hamilton East, Ont., by 1,500 majority, was at one time Solicitor and general counsel for the old Great Western Ry. of Canada, and was for a short time General Manager, Northern and Northwestern Railway.

G. H. Barnard (Conservative), who was elected in Victoria, B.C., by 240 majority, is a son of the late F. J. Barnard, at one time M.P. for Cariboo, B.C., who was the founder of the British Columbia Express Co. and interested in other transportation matters.

Rodolphe Forget (Conservative), President, Quebec Railway, Light and Power Co. and Richelieu and Ontario Navigation Co., who sat for Charlevoix, Que., in the last parliament, was re-elected for this constituency by 530 majority and was also elected in Montmorency, Que., by 54.

Hon. R. Lemieux, (Liberal), who represented Gaspe, Que., prior to dissolution and who was appointed Minister of Marine and Fisheries a short time ago, was elected in Rouville, Que., by 265 majority. He also ran again in Gaspe, where the election was held four days later, and was defeated there.

W. F. Nickle (Conservative), Secretary-Treasurer, Kingston, Portsmouth and Cataraqui Electric Ry., was elected in Kingston, Ont., by 345 majority. He represented the same seat in the Ontario Legislature from 1908 until he resigned to run for the House of Commons. Kingston was represented in the House of Commons from 1902 until the recent dissolution by W. Harty, President, Canadian Locomotive Co., who refused to again be a candidate.

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Use of Soft Ties.—The report of the Roadmasters' and Maintenance of Way Association's committee on the question: "Is it economy to use soft ties for switches, switching leads and track?" as presented at the recent convention, is given in full on page 911 of this issue. In the discussion on the report, T. Hickey, Roadmaster, Michigan Central Rd., St. Thomas, Ont., said the M.C.R. had used cedar ties for many years but had stopped buying them. They were not satisfactory under heavy traffic, and even on branch lines where standard equipment is used they are being replaced by white oak.

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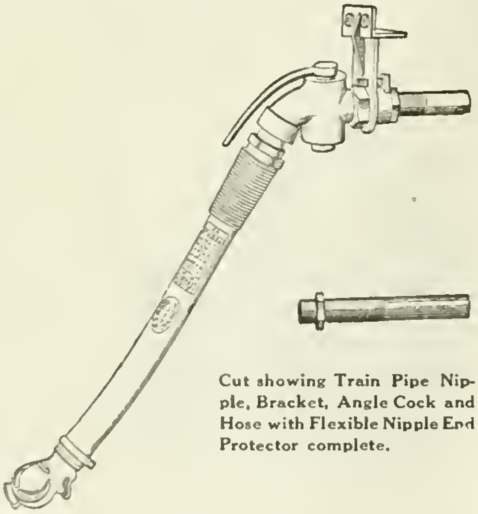

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Canadian Northern Railway Construction, Betterments, Etc,

The Canadian Northern Quebec Ry.—The Board of Railway Commissioners has authorized the building of a 90 ft. deck plate girder bridge across the St. Charles River, at mileage 4.38 from Quebec.

The question of the extension of the company's yards in Hochelaga ward, Montreal, has been before the Board of Railway Commissioners on several occasions recently, and an appeal to the Supreme Court is being made against one of the Board's rulings. In this connection the Montreal city council has been recommended to delay granting roads.

The Board of Railway Commissioners has extended the time for the completion of the line across Notre Dame St., and the Montreal Street Ry. tracks.

Canadian Northern Ontario Ry.—A deed of sale has been registered in Montreal showing the transfer of 500 arpents of land in Longue Pointe ward from Mackenzie, Mann & Co., Ltd., to the C.N.O. Ry. The land adjoins the C.N.Q. Ry. near the approach to the Moreau Rd. terminal.

The bridges on the new short line which is being built from Montreal to Hawkesbury, Ont., are as follows: Riviere des Nordes, mileage 13.5 from Hawkesbury, consisting of five 55 ft., three 60 ft., deck plate girder spans, and one 24 ft. beam span on concrete piers and abutments. Rouge River, mileage 15.5 from Hawkesbury, consisting of two 40 ft. and one 85 ft. half through plate girder spans on concrete piers and abutments. Riviere des Chenes, mileage 30.7 from Hawkesbury, consisting of one 65 ft. half through plate girder span on concrete abutments. Riviere des Milles Iles, mileage 37.9 from Hawkesbury, consisting of 16 half through plate girder spans of 65 ft. each, girders 17 ft. 6 in., centre to centre, with floor systems, on concrete piers and abutments. Riviere des Prairies, (Back River) West channel, mileage 39.6 from Hawkesbury, consisting of five 80 ft. half through plate girder spans, girders 17 ft. 6 in. centre to centre, with floor system; main or east channel, mileage 40 from Hawkesbury, consisting of two 135 ft. centre to centre, and two 185 ft. centre to centre end bearing rivetted through trusses on concrete piers and abutments. These steel bridges will be built to Dominion Government specifications of 1908, class heavy loading, which provides for safe operation of two consolidated locomotives, coupled together, each weighing in working order 180 tons, followed by a train load of 4,750 lbs. per ft. The contract for the first four bridges has been let to the Dominion Bridge Co., Montreal. Contracts for the other two bridges have not yet been let. The concrete work is being done by the general contractor. The Board of Railway Commissioners has approved of the building of these bridges, and also of the revised location of the line from mileage 1.81 to mileage 7.85 from Hawkesbury.

The negotiations for the entrance of the line into Ottawa are proceeding, and it was reported Sept. 13, that the company had completed the purchase of the land necessary for its entrance and terminals. It is stated that negotiations are in progress for the purchase of the site of the Bate warehouse, on the west bank of the Rideau canal, just across from the new central station, for station purposes

Revised plans for the line at Buck Lake, in Storrington and Bedford tps., and from mileage 164.31 to 165.56, have been approved by the Board of Railway Commissioners, which has also approved of plans for a station at Belleville.

It is expected that the first section of the new line from Toronto to Ottawa will be opened for traffic Oct. 1. The mileage of this section from the junction with the Toronto-Sudbury line in the Don Valley just outside Toronto, to Trenton, is 104.4 miles. The company's officers inspected the line at the end of Aug., and the inspection by the Engineers of the Department of Railways was fixed for Sept 23. The Board of Railway Commissioners has authorized the company to connect its tracks with the Central Ontario Ry. tracks at Trenton, mileage 104.4, from Toronto. The Board has also approved of the plans for laying out a freight yard at Trenton.

Application will be made to the Board of Railway Commissioners, Oct. 12, for approval of plans for a station building just south of the new bridge over the Don at Queen St. east, Toronto, and for the approval of the plans for the Toronto-Ottawa line from across the north part of Toronto.

In connection with the Ottawa-Selwood Jct. of the main line, it is stated that the delay in the letting of a contract is due to the fact that certain diversions will have to be made from the route as at present laid out, and that as a consequence it will be some little time before the new plans and specifications can be prepared.

With respect to the Sellwood Jct.-Port Arthur line, which is under contract, the Board of Railway Commissioners has approved of revised location plans for the line from mileage 15.75 to 24.75, and from mileage 32.4 to 50.6, southeast of Port Arthur, and of location plans through unsurveyed territory in Thunder Bay district from mileage 84 to 200, east of Port Arthur. The contractors are reported to have over 500 men at work on the first 70 miles east from Port Arthur, established in ten camps. A steam drill is at work in the rock cut near Current River.

Press reports state that a sub contract has been let to E. Anderson for grading 15 miles out from Port Arthur, to A. McGregor from mileage 15 to 17 and to Vigars and Paanaman from mileage 19 to 23, easterly from Port Arthur, and that J. A. Whalen has been given a contract for building a bridge 59 miles east of Port Arthur.

A press report that C. P. L. Fowler, formerly Manager of the Nelson-Jenks Coal Co., at Great Falls, Montana, had been appointed Purchasing Agent for Foley Bros. and Northern Construction Co., contractors for the C.N.O.R. between Selwood Jct. and Port Arthur, was mentioned in our last issue. We have since been advised that Mr. Fowler has been appointed Chief Accountant, not Purchasing Agent.

C. T. De Lamere has taken charge of the work on Division C, at Nipigon, Ont., in place of R. H. McCoy, who was drowned recently.

Canadian Northern Ry.—Sir Donald Mann, Vice President, in an interview at Port Arthur, Ont., Sept. 11, is reported to have said the present grain elevator there will be doubled in size, thus bringing its storage capacity up to 14,000,000 bush., and that work on the enlargement will be started just as soon as the preliminary work, upon which the contractors are engaged, is completed. The contractors guarantee that a larger section of the additional storage capacity will be ready in Jan. or Feb., 1912. The company also proposes to establish a line of steamers of its own to ply between Port Arthur and the company's terminals on the Georgian Bay. The passenger steamers will be ready in the spring of 1913.

It is reported that the hotel at Port Arthur is to be enlarged at an early date.

The Board of Railway Commissioners has authorized the opening for traffic of the following lines: from Calder to Rhein, for freight at a sped of 18 miles an hour, the Roseburn extension from Rhein to Hamton, and the Delisle branch from Delisle to McRorie, Sask.

A connection between the C.N.R. line and the G.T. Pacific Ry. has been authorized by the Board of Railway Commissioners in s.w. ¼ sec. 36, tp. 30, r. 4, w. 2 m., Sask.

The Board of Railway Commissioners has ordered the fencing of the company's right of way on the Wawanesa subdivision, by July 1, 1912; has approved of plans for building a subway under the company's tracks at 23rd St., Saskatoon, and has approved location plans for the following lines: mileage 0 to 41.76 and mileage 49.94 to 60.45 on the extension westerly in Saskatchewan; mileage 0 to 14.16 from the junction with the Moose Jaw extension, Sask.; mileage 46.68 to 93.40 Alta.; mileage 255.73 to 260.03; and mileage 260.03 to 261.08 on the Calgary extension.

In a recent interview, G. H. Shaw, General Traffic Manager, in summing up the work in progress along the line, said the new station at Brandon is approaching completion, and the new hotel at the same place will be completed early in 1912. The work of relaying the old Qu'Appele, Long Lake and Saskatchewan Rd., with heavier steel rails is practically completed between Regina and Warman. The new line from Vegreville to Calgary is in first class order from the junction with the main line at Vegreville, through Camrose to Stettler, Alta., 104 miles, and a full service of trains was put in operation Sept. 1.

Tracklaying on the branch into Moose Jaw., Sask., has reached a point about three miles south of that town; a large bridge is being erected there, and on its completion, tracklaying will be resumed.

In connection with the Vegreville-Calgary line, Sir Donald Mann, on the occasion of his recent visit to Calgary, said the line will be completed into the city by the end of the year. The Board of Railway Commissioners has authorized the construction of a bridge to carry the tracks over the C.P.R. main line near Calgary. To the south of Calgary there is a good deal of location work being done, and latest reports are that final location stakes are being put in on the route for the lines in the vicinity of Pincher Creek and Lethbridge.

Sir Donald Mann, Vice President, during his recent western trip, stated that a high level bridge will eventually be built to give connection with the country south of Edmonton, but whether it will be built at the east or west end of the city it has not been decided. Every effort of the company is now being directed to the completion of the coast to coast line.

As regards the work on the line from Edmonton to the Yellowhead Pass, late reports state that grading is well advanced to 168 miles west of Edmonton, and it is expected that track will be laid to the Rocky Mountains next year.

Track laying is reported to have been completed on the line to Athabasca Landing, to north of Clyde, Alta., and it is expected that steel will be laid into the Landing by the end of the year.

On the line towards the Peace River country from west of Edmonton, it is expected to have the grading completed to the Pembina River this fall. The Tobin Construction Co., which has the general contract is reported to have let a sub contract to the Bradley Construction Co.

Sir Donald Mann, Vice President, is reported to have stated on the occasion of his recent visit to Edmonton, that construction will be started next summer on a line northeast from Edmon-

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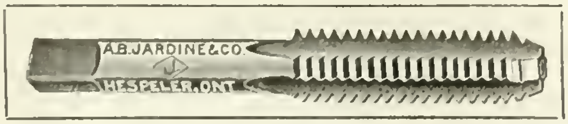

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ton, splitting the wedge of territory between the Athabasca Landing line and the Saskatchewan River. The route will, it is said, follow pretty closely that proposed for the Alberta and Great Waterways Ry., as far as the junction with the line now under construction from North Battleford to Athabasca Landing.

Canadian Northern Pacific Ry.—We are officially advised that a contract has been let for the construction of the line from Kamloops, B.C., to the Yellowhead Pass, to the Northern Construction Co., jointly. The work is to be started immediately and is to be completed by July 1, 1913. A general description of the route has already been given, but there have been some changes made on the revised location surveys which have just been completed. The Northern Construction Co., in conjunction with Foley, Welch and Stewart, has the contract for the 163 miles from Hope to Kamloops, while the Cowan Construction Co., is building westerly from Edmonton to the Yellowhead Pass.

Reports state that good progress is being made with construction on the Hope-Kamloops section, and the subcontractors are getting large gangs of men and big plants on the different sections.

Sir William Mackenzie, President, and Sir Donald Mann, were at the Pacific coast at the beginning of Sept., looking over the work in progress at Port Mann, the terminus of the transcontinental line on the mainland, and at Victoria, in connection with the lines on Vancouver Island, and in interviews, stated that everything was going on satisfactorily.

Canadian North Eastern Ry.—Sir Donald Mann, in a recent interview said the project of extending this line, formerly known as the Portland Canal and Short Line Ry., across the divide into the Naas River Valley had not been lost sight of by the company. It was intended to carry the line through to a connection with the company's lines in Alberta, but the work coul dnot be undertaken until the main trunk line was completed. (Sept., pg. 839.)

Terms of Quebec Central Railway Lease the to C.P.R.

The Secretary has issued the following circular to the holders of securities:

I am instructed by my board to inform you that, subject to your approvel, to be hereafter asked for at meetings of each class of debenture stockholders and the bond shareholders, to be summoned for that purpose, and subject also to the granting of the necessary statutory authority in Canada, they have entered into a provisional agreement with the directors of the Canadian Pacific Ry. Co., to lease your railway and all its assets for 999 years for a rental sufficient to provide for interest and dividends as follows:

Payment of interest on the 4% debenture stock (preserving all existing rights).

Payment of 3½% per annum on the 3% debenture stock (which is to be converted into a 50 year debenture stock at the new interest rate). Payment of principal guaranteed by lessee.

Payment of 5% per annum half yearly on the 7% income bonds (these bonds being converted into new 50 year bonds at the new rate of interest), and a 10% cash bonus being given as compensation to the converting bondholders for reduction of interest. Payment of principal guaranteed by lessee.

Payment half yearly of a dividend of 4% per annum on the shares for the first four years of the lease and a dividend of 5 % per annum thereafter.

All these payments of interest and dividends will, in effect, be the direct obligation of the C.P.R. Co.,

The lease will commence from Jan. 1, or July 1, as the case may be, next after the date when the agreement becomes effective.

The C.P.R. will, it is understood, make such subsequent arrangements as may be necessary with the New York, New Haven and Hartford Rd. in regard to traffic agreement, etc. The control of the company will be with the C.P.R., and it is likely that the directorate will be changed to Canada.

The final steps in the transfer will not be taken by the shareholders until after the necessary act has been passed by the Quebec Legislature.

Canadian Northern Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases, compared with those for 1910-11, from July 1, 1911:—

	Earnings.	Expenses.	Net Earnings.	Net Increase
July	$1,475,900	$1,114,300	$ 361,600	$ 13,400
Inc.	$ 250,800	$ 237,400	$ 13,400	....

Approximate earnings for August, $1,420,650, and for two weeks ended September 14, $696,800 against $1,093,000 and $544,300 for same periods 1910.

Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases, compared with those for 1910-11, from July 1, 1911:

	Earnings.	Expenses.	Net. Profits	Net Increase.
July	$9,661,818.14	$5,958,789.81	$3,703,028.33	$218,408.74
Inc.	$ 792,603.82	$ 574,195.08	$ 218,408.74	....

Approximate earnings for August, $10,073,000, and for two weeks ended September 14, $4,555,000, against $8,926,000 and $4,153,000 for same periods 1910.

Grand Trunk Railway Earnings, Expenses, Etc.

The following figures show the earnings and expenses of the G.T.R., C.A.R., G.T. Western Ry. and D.G.H. & M.R., for July, as compared with those for July, 1910:—

Grand Trunk Railway.

	1911.	1910.
Earnings	$3,336,900	$2,538,400
Expenses	2,523,000	1,826,750
Net earnings	$ 813,900	$ 711,650

Canada Atlantic Railway.

	1911.	1910.
Earnings	$ 177,700	$ 126,000
Expenses	157,000	135,900
Net earnings	$ 20,700	*$ 9,900

Grand Trunk Western Ry.

	1911.	1910.
Earnings	$ 551,500	$ 394,400
Expenses	428,800	335,700
Net earnings	$ 813,900	$ 711,650

Detroit, Grand Haven and Milwaukee Ry

	1911.	1910.
Earnings	$ 171,200	$ 121,200
Expenses	143,400	120,200
Net earnings	$ 27,800	$ 1,000

*Deficit.

Approximate earnings for Aug., $4 502,674, and for two weeks ended Sept. 14, $2,060,101, against $385,049 and $ 1,901,444 for same periods, 1910.

Traffic Receipts of the System.

Aggregate receipts from July 1 to Aug. 31:

	1911.	1910.
Grand Trunk Ry.	£1,414 826	£1,151,928
Canada Atlantic Ry. ..	75,348	59,283
G. T. Western Ry. ..	230,960	183,405
D.G.H. & M Ry.	74,768	57,084
Totals	£1,795,902	£1,451,700

◆

During July 19 employes were killed and 31 injured in the course of their employment in railway service in Canada. Of the fatalities, seven were due to being struck by trains and locomotives, five to being run over, three to derailments, two to being crushed when coupling, and one each to heat prostration and to scalding. In addition to the foregoing, two employes were killed in the course of their work on railway construction, one being due to being run over by a train, and one to falling rock.

Railway Route Plans Approved.

The Minister of Railways has approved of the following route plans:—

Algoma Central and Hudson Bay Ry. July 24; about 100 miles.

Campbellford, Lake Ontario and Western Ry. (C.P.R.) July 24. From east of Cobourg to a connection with Ontario and Quebec Ry. (C.P.R.) near Glen Tay, Ont.; about 109 miles.

Canadian Northern Ontario Ry.—July 24. Revision of Sudbury-Port-Arthur line, 10 miles.

Ottawa-French River line. Revision from Pembroke westerly; about 42 miles.

Canadian Northern Ry.—July 24. Yorkton to Hudson Bay Junction, about 95 miles.

Revision of Moose Jaw-Kindersley branch; about 25 miles.

Canadian Pacific Ry.—July 24. Asquith to Conquest; 42 miles.

July 24.—Lauder to Boissevain; 33.5 miles.

July 24.—Wilkie to Anglia branch; 64 miles.

July 24.—Revision of Moose Jaw southwesterly line; 35 miles.

July 24.—Bassano to Irricana branch, 22 miles.

Grand Trunk Pacific Branch Lines Co.—July 24, Harte to Brandon; about 25 miles.

July 24.—Entrance to Brandon; about 5.4 miles.

July 24.—Biggar-Calgary branch, a slight revision in tp. 31, ranges 23 and 24, west of 3rd meridian, about 10 miles.

Kettle Valley Ry.—July 24. Revision of Midway-Carmi branch; 46 miles.

Aug. 24.—Penticton towards Osprey Lake, first 5 miles from Penticton.

Lake Erie and Northern Ry.—July 24. Brantford to Port Dover, about 35 miles.

Southern Central Pacific Ry.—July 24. From sec. 20, tp. 10, r. 2, to near n.e. corner of sec. 20, tp. 7, r. 2, west of 5th meridian; 22.4 miles.

July 24.—From sec. 26, tp. 6, r. 1, west of 5th meridian to the international boundary near Coutts; 96.5 miles.

Orders Placed for Steel Rails.

We were officially advised, Sept. 20, that the C.P.R. had ordered 1,200 tons of 65 lb. steel rails in the United States for use on branch lines in the Canadian northwest.

The National Transcontinental Railway Commission received tenders up to Sept. 4 for 2,000 gross tons steel rails, 80 lbs., to be delivered at Moncton, N.B. The Dominion Iron & Steel Co.'s tender has been accepted.

In our June issue it was stated that the Grand Trunk Ry. had ordered 37,500 tons of 100 lb. rails, divided between the Algoma Steel Co., and the Dominion Iron & Steel Co. We are now officially advised that a further order has been placed for 12,500 tons of 100 lb. rails, with the Algoma Steel Co., and 5,000 tons of 80 lb. rails have been ordered from the Lackawanna Steel Co., for use on G.T.R. lines in the United States.

A recent press report stated that the G.T.R. was in the market for 10,000 tons of steel rails. We were officially advised Sept. 21, that the management was figuring on the supply for next year, but the quantity to be ordered had not been decided.

◆

The Secretary of the Board of Railway Commissioners, issued a circular Sept. 6, asking railway companies to furnish within 60 days a statement showing the number of snow ploughs equipped with automatic couplers on the front end, and the number that are not so equipped, or that are equipped with the old fashioned bar.

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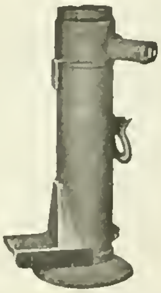

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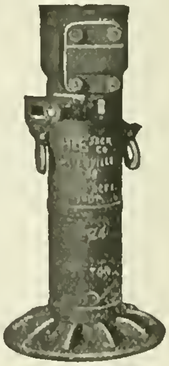

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Mainly About Transportation People.

Mr. Gear, who died in Montreal, Sept. 22, was father of W. I. Gear, Vice President, Robert Reford Co.

Mrs. J. T. Moore, wife of the President of the Alberta Central Railway, died in Toronto, September 6.

Hugh A., Mrs. and Miss R. Allan arrived in Canada by the s.s. Victorian, Sept. 8, from England, on a visit.

C. J. Binney, of the Canadian Freight Association's staff at Winnipeg, was married there, Sept. 6, to Miss R. M. Boulton.

H. H. Colpitts, C.P.R., engineer, Macleod, Alberta, was married recently there to Miss A. F. Johnson, of Monarch, Alta.

Mrs. S. P. Mabee, who died at Port Rowan, Ont., Sept. 5, aged 85, was mother of J. P. Mabee, Chief Railway Commissioner.

E. N. Soper, son of N. Y. Soper, director of the Ottawa Electric Ry., was married to Miss H. A. McDougall, in Ottawa, Sept. 30.

A. J. Gorrie, Receiver for the Quebec and Lake St. John Ry., returned to Quebec, Sept. 1, from Great Britain, by the s.s. Royal Edward.

T. Howell, General Immigration Agent, Canadian Northern Ry., Toronto, returned from Great Britain, by the s.s. Royal Edward, Sept. 1.

Jas. Leitch, K.C., Chairman, Ontario Railway and Municipal Board, returned to Toronto early in September, from a vacation in Great Britain.

W. R. McRae, Superintendent, Motor and Truck Dept., Toronto Railway, returned to Toronto on Sept. 14 with his family, from a trip to Europe.

N. Curry, President, Canadian Car & Foundry Co., Montreal, has been unanimously elected President of the Canadian Manufacturers' Association.

A. F. Murray, of the C.P.R. Architect's Department, Montreal, was drowned while bathing at Isle Cadieux, Lake of the Two Mountains, Sept. 3.

W. J. Connolly, who died at Gillingham, Alta., recently, aged 68, spent several years in railway contracting work west of Winnipeg.

W. Burn, a representative of the Great Western Ry. of England, recently completed a tour of Canada in the interests of his company.

Miss Brownlee, daughter of J. Brownlee, Superintendent, C.P.R., Moose Jaw Sask., was married there, Sept. 6, to Mr. Leach, of Cranbrook, B.C.

F. H. Phippen, K.C., General Counsel Canadian Northern Ry., accompanied by his family, returned to Toronto, Sept. 1, from Great Britain.

G. Hannah, Passenger Manager, Allen Steamship Line, returned to his office in Montreal, Sept. 18, after having been in Great Britain for some weeks.

Lady Shaughnessy and family have returned to Montreal from St. Andrews, N.B., and have closed Fort Tipperary, their summer home, for the winter.

Sir Wm. Van Horne, left Montreal, Sept. 22, for a short visit to St. Andrews, N.B., where Lady Van Horne expects to remain until the end of Nov.

Sir Thos. Tait, was in St. John, N.B., Sept. 13, in company with D. McNicoll, Vice President C.P.R., on the latter's inspection of the lines east of Montreal.

C. Schreiber, C.M.G., Consulting Engineer to the Dominion Government, returned to Ottawa, Sept. 19, after spending a short holiday in New Brunswick.

W. G. Annable, General Passenger Agent, C.P.R. Atlantic Steamship Service, Montreal, and Mrs. Annable arrived in England, Sept. 1, for a short holiday.

D. J. Evans was presented with a diamond ring, Aug. 31, by the office staff of the Canadian Locomotive Co., Kingston, Ont., on his retiring from the position of accountant.

J. M. Bryce, who died in Toronto, Aug. 29, aged 79, is reported to have been driver of the first C.P.R. engine which ran from Winnipeg across the Assiniboine River.

The marriage of C. P. Edwards, of the Dominion Government Radio-Telegraph Service, Vancouver, B.C., to Miss M. G. Dickeson, of Ottawa, is announced to take place in October.

C. S. Mellen, President, New York New Haven and Hartford Rd., is reported to have stated, Sept. 12, that there was no truth in the reports that he was about to resign the presidency.

F. J. Moss, of the Canadian Northern Ry. Emigration Department, London, Eng., spent some time in Aug. and Sept., on a tour through Canada, collecting information for the use of the department.

Lord Strathcona has given $3,000 towards the fund being raised in Vancouver, B.C., to purchase the old British survey ship, Egeria, as a training ship for the Vancouver branch of the Navy League.

Dr. D. M. Lincham, Winnipeg, and Dr. Fraser, Brandon, Man., are reported to have been appointed medical officers in charge of the construction camps on the Dominion Government railway to Hudson Bay.

Frank Grundy, Vice President, Quebec Central Ry., Sherbrooke, Que., who died Nov. 15, 1910, left an estate of $213,713.77, divided equally in shares of $35,618 each among five sons and one daughter.

Lord Strathcona sailed from England, Sept. 23, via New York, for Canada. He may be present at the welcome to H.R.H. the Duke of Connaught, when he arrives to assume the position of Governor-General.

H. N. Frith, at one time in the B.C. Electric Ry. accountants' department, and now Secretary of the Yokuna Valley Transportation Co., is reported to have resigned that position with a view of returning to Vancouver.

J. F. Cameron, of Trickey and Cameron, railway contractors, died in the hospital at Cornwall, Ont., Sept. 3, aged 55. He was a son of the late J. Cameron, who was engaged on the construction of the Hoosac tunnel.

The engagement is announced of Miss M. G. Nanton, daughter of A. M. Nanton, Winnipeg, Managing Director of the Alberta Ry. & Irrigation Co., to D. L. Cameron, son of Hon. D. C. Cameron, Lieutenant-Governor of Manitoba.

A life size portrait of the late R. Reid, who was one of the original members of the National Transcontinental Ry. Commission, has been placed in the Public Library, London, Ont. He was the first chairman of the library board.

H. T. Wilgress, Agent, C.P.R. Trans-Pacific Steamship Line, Yokohama, Japan, accompanied by Mrs. Wilgress, arrived in Canada, Sept. 15, from England, on the C.P.R. s.s. Empress of Ireland, on their return to Japan after a vacation.

J. J. O'Connor, steamship agent, etc., Port Arthur, Ont., has been appointed by the Ontario Government as a magistrate, with jurisdiction along the Canadian Northern Ontario Ry. under construction from Port Arthur to Gowganda Jct.

G. S. Hodgins, who was at one time connected with the C.P.R. Mechanical Department, has resigned the position of Managing Editor of Railway and Locomotive Engineering, New York, on account of ill health, and has gone abroad to recuperate.

S. O. Greening, President of the B. Greening Wire Co., Ltd., Hamilton, Ont., died there, Aug. 3, aged 64. He was one of the directors of the Dominion Power and Transmission Co., owning the electric railways running into and radiating from Hamilton.

Sir William Whyte was chairman of the committee which had charge of the arrangements for the dinner given in Winnipeg, Sept. 28, to Sir Daniel and Lady McMillan, on Sir Daniel terminating his tenure of office of Lieutenant-Governor of Manitoba.

P. A. Laing, a resident engineer on the National Transcontinental Railway construction, was presented with a diamond pin by the staff at Residency 20, near Cochrane, Ont., Sept. 12, on his leaving to take a post-graduate course in engineering in Columbia University, New York.

J. S. Campbell, who died at Byron, Cal., Sept. 10, resided for a number of years in Winnipeg, and was connected with the C.P.R. passenger department. At the time of leaving that company's service in 1898 he was Secretary to R. Kerr, then Assistant Traffic Manager Western Lines.

C. H. Allen, who has been appointed Real Estate Agent, Western Lines, C.P. R., Winnipeg, Man., is a son of T. Carleton Allen, K.C., LL.D., of Fredericton, N.B., and was born at St. John, N.B., Aug. 28, 1880. Prior to entering the C.P.R. Solicitor's office in Jan. 2, 1909, he practised law in Fredericton, N.B.

Sir Thos. G. Shaughnessy, President, C.P.R., has offered $1,000 as a prize for the best 20 lbs. of hard red wheat at the American Land and Irrigation Congress to be held in New York in Nov. The C.P.R. will carry all shipments of wheat for the competition from the Calgary irrigation lands free of charge.

W. McIlroy, City Passenger Agent, C.P.R., Peterboro, Ont., who was appointed by the Canadian Ticket Agents' Association as representative to attend the American Association of General Passenger and Ticket Agents' convention at St. Paul, Minn., Sept. 19, was unable to be present in consequence of a change of staff in his office.

C. J. Rogers, who has been appointed acting Purchasing Agent and Cashier, White Pass and Yukon Route, Vancouver, B.C., was born at Winnipeg, Man., Dec. 22, 1887, and entered W.P. and Y. R. service Sept. 1904, since when he has been, to Nov. 1, 1906, clerk at Dawson, Yukon; Feb. 4, 1907 to July 31, 1911, Assistant Purchasing Agent, Vancouver, B.C.

E. T. Agate, C.E., M. Can. Soc., C.E., who was recently appointed District Engineer, Canadian Northern Ontario Ry., in charge of District 1, Port Arthur-Sudbury line, at Sudbury, was born at Pittsford, N.Y., Dec. 7, 1874, and graduated from Cornell University in 1897. He was with the C.P.R. Construction Department from 1897 to 1906, and from 1906 to 1910 was engaged in railway work in British Columbia and Washington State.

G. T. Rooke, whose appointment as Inspector of Transportation, Eastern Lines, C.P.R., was announced in our last issue, was born at Whitby, Ont., Oct. 21, 1865, and commenced railway work in Aug., 1880, as telegraph operator on the Credit Valley Ry. He remained with the C.P.R. when it took over the C.V.R., and to the date of his present appointment has been telegraph operator, train dispatcher and train and station inspector, consecutively.

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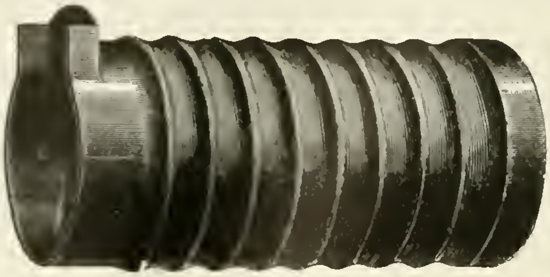

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R. H. McCoy, Division Engineer, Division C, Canadian Northern Ry., Gowganda Jct to Port Arthur line, with S. A. Drum, Resident Engineer, Nipigon, and R. Nelson, rodman, were drowned by the upsetting of their canoe, in Lake Helen, north of Lake Nipigon, about Aug. 30. R. H. McCoy was for some years in the C.P.R. Engineering Department, and latterly was engaged under the Division Engineer, Chicago, Milwaukee and Puget Sound Ry., Spokane, Wash. S. A. Drum was a native of Minneapolis, and had latterly been engaged on the C.M. & P.S.R. in Washington, and R. Nelson was from Duluth, Minn.

A. A. Goodchild, whose portrait appears on another page, was born at London, Eng., June 3, 1866, came to Canada, June, 1886, and entered railway service in July, 1886, since when he has been, to Jan. 1, 1888, in Audit Department, G.T.R.; Jan. 1, 1888, to Oct. 2, 1899, in Comptroller's office, C.P.R.; Oct. 2, 1899, to Jan., 1900, Assistant Auditor of Disbursements, C.P.R.; Jan., 1900, to Dec. 28, 1904, Auditor of Statistics, C.P.R., on which date he was appointed Auditor of Stores and Mechanical Acounts, which position he now holds. He has taken an active part in the Canadian Railway Club's work and is its president for the current year.

R. L. Thompson, District Passenger Agent, C.P.R., Toronto, has resigned, and has been appointed Managing Director, Pacific Realty Co., Ltd., Toronto, which carries on an insurance and real estate business. He was born at Montreal, Aug. 17, 1873, and entered C.P.R. service Aug., 1888, in the General Passenger Department, occupying positions as stenographer, advertising, claims, accounts and rate clerk, to July, 1904, since when he has been, to Nov., 1905, assistant chief clerk, and Nov., 1905, to Jan., 1907, chief clerk to Passenger Traffic Manager, Montreal; Jan., 1907, to Sept. 8, 1908, General Agent, Passenger Department, Cincinnati, Ohio; Sept. 8, 1908, to Sept., 1911, District Passenger Agent, Toronto.

A. B. Calder, whose resignation from the position of General Agent, Passenger Department, C.P.R., Chicago, Ill., was mentioned in our last issue, was born at London, Ont., Aug. 24, 1867, and entered C.P.R. service in 1887, since when he has been, to 1889, in the Passenger Department, Winnipeg; 1889 to Oct., 1893, ticket clerk at Tacoma, Wash.; Oct., 1893, to July, 1895, Travelling Passenger Agent, Tacoma, Wash.; Oct. 1893, to July, 1895, Travelling Passenger Agent, San Francisco, Cal.; Dec., 1897, to Nov., 1904, Travelling Passenger Agent, Seattle and Tacoma, Wash.; Nov., 1904, to Nov., 1910, General Agent, Passenger Department, Seattle, Wash.; Nov., 1910, to Sept., 1911, General Agent, Passenger Department, Chicago, Ill. After a short vacation on the Pacific coast, he will join his father in the general ticket business in Winnipeg. Before leaving Chicago he was given by the passenger staffs of the various railways represented there a case containing an assortment of hats for all occasions.

J. M. R. Fairbairn, who has been appointed Assistant Chief Engineer Eastern Lines, C.P.R., Montreal, was born at Peterboro, Ont., June 30, 1873. He graduated from the School of Practical Science, Toronto, in 1893, and until Aug., 1901, was engaged in survey and construction work, since when he has been, to Nov., 1902, Assistant Engineer, Maintenance Department, Eastern Lines, C.P.R.; Nov. 1902, to Aug. 1904, Resident Engineer, District 4, C.P.R., Ottawa; Aug. 1904, to Aug. 1905, Assistant Engineer, Chief Engineer's office, C.P.R., Montreal; Aug., 1905, to Mar., 1906, acting Division Engineer, Eastern Division, C.P.R., Montreal; Mar., 1906, to Nov., 1907, Division Engineer, Ontario Division, C.P.R., Toronto; Nov., 1907, to Oct., 1908, Division Engineer, Eastern Division, C.P.R., Montreal; Oct., 1908, to Oct., 1910, Principal Assistant Engineer, Eastern Lines, C.P.R., Montreal; Oct., 1910, to Feb., 1911, Engineer of Maintenance of Way, Eastern Lines, C.P.R., Montreal; Feb. to Sept., 1911, acting Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal. .

J. W. Loud, whose retirement from G.T.R. service on account of his having reached the age limit is announced, was born in Warwickshire, Eng., and was in the employ of the Midland Ry. from Aug., 1861, to 1872, in which year he came to Canada, since when he has been, Sept., 1872, to Jan., 1875, clerk, General Eastern Freight Agent's office, G.T.R.; Jan. to Apr., 1875, Agent, G.T.R., Hamilton, Ont.; Apr., 1875, to Sept., 1877, chief clerk, Assistant General Freight Agent's office, G.T.R., Toronto; Sept., 1877, to Nov., 1881, chief clerk, General Freight Agent's office, G.T.R., Montreal; Nov., 1881, to Dec., 1886, Freight Agent, G.T.R., Toronto; Jan., 1877, to Aug., 1889, General Freight Agent, Through Traffic, G.T.R., Montreal; Sept., 1889, to Feb., 1896, Traffic Manager, Detroit, Grand Haven and Milwaukee Ry., Detroit, Mich.; Feb., 1896, to Apr., 1900, General Freight Agent, G.T.R., Montreal; May, 1900, he was appointed Freight Traffic Manager, G.T.R., Montreal, and subsequently, also, Freight Traffic Manager, Central Vermont Ry., and Grand Trunk Pacific Ry.

A. H. N. Bruce, whose portrait appears on the first page of this issue, was born at Ballyscullion, County Derry, Ireland, June 18, 1854, and after studying engineering and taking a practical course in Glasgow, Scotland, came to Canada in 1889, since when he has been, to 1890, on construction of Canada Atlantic Ry. bridge over the St. Lawrence at Coteau, Que.; 1890, assistant engineer on location and construction, St. Lawrence and Adirondack Ry.; 1890 to 1898, Chief Assistant Engineer on location and construction of Ottawa and Parry Sound Ry.; 1899, on location survey of Manitoba and South Eastern Ry.; 1900, on location and construction of 30 miles of Great Northern Ry. of Canada, from St. Jerome, Que., to Hawkesbury, Ont., including the bridge over the Ottawa River; 1901 and 1902, Chief Engineer, Whitney and Opeongo Ry.; 1903 to Mar. 31, 1904, Divisional Engineer on location and construction, Lindsay, Bobcaygeon and Pontypool, Ry., Mar. 31, 1904 to 1905, Chief Engineer, same road; 1905, Assistant Chief Engineer, Toronto and Hamilton Ry.; 1906, Chief Engineer on surveys and construction, Napierville Jct. Ry.; 1907 to 1909, in private practice; 1910, Chief Engineer in charge of surveys, Little Nation River Ry.; and since Feb., 1911, Chief Engineer, Quebec and Saguenay Ry., which is under construction between Cap Tourmente and Murray Bay, Que.

Comparative Freight and Passenger Rates.—A contemporary publishes the following: The statement is frequently made that the freight and passenger rates on United States railways are lower than those for other countries. The average freight rates charged by the Union Pacific and Northern Pacific per ton mile, for ten years figure out .97 cent. and .89 cent., respectively, compared with .76 cent. on the Canadian Pacific. The ten-year average passenger rates, per passenger per mile for three yoads, figure out as follows: Union Pacific, 2.13 cents; Northern Pacific, 2.23 cents; Canadian Pacific, 1.83 cents.

Grand Trunk Pacific Railway Fort William Terminals.

A press report states that the company's plans for terminals at Fort William, Ont., include elevators with a capacity of 60,000,000 bushels and docks. The dock plans show three great piers in the Mission River harbor from which freight can be loaded into lake vessels by working elevators on both sides. It will be possible to drop 75,000 bush. of grain every hour of the day from the elevators into lake boats. Each unit will consist of a working elevator and storage elevators of 10,000,000 bush. capacity when complete. The cars can be unloaded at six places at the rate of 2,400 cars a day of 20 hours. The unloading is done in the track shed, which is part of the working house. Four tracks extend through this shed. The arrangement is such that grain from the various cars cannot be mixed. The unloading is done by power grain shovels of unusual size and strength Even the dock is of concrete and the storage house consists of seventy cylindrical concrete bins, each over 23 ft. inside diameter and with 50 interspace bins. Six vessel loading spouts are provided for loading grain into lake vessels.

C.N.R. Toronto to Trenton.—The Canadian Northern Ontario Ry. has arranged to open its recently completed Toronto-Trenton line for traffic, Oct. 2, when both passenger and freight services will be put into operation, should nothing unforeseen occur. The pasenger service will consist of two trains each way daily, leaving Toronto Union Station, and calling at Queen St., Rosedale, East Don, Malvern, Cherrywood, Greenburn, Brooklin, Oshawa, Bowmanville, Orono, Starkville, Osaca, Port Hope, Coburg, Grafton, Colborne, Brighton and Trenton. The freight service will consist of one train each way, daily. There will be no changes of officials of the Operating Department, the present officials having their jurisdiction extended over the new line.

Railway Commission for the West.—During his tour in Manitoba and the other northwest provinces last summer the Dominion Premier-elect, R. L. Bordon, stated that if returned to power he would create a western division of the Board of Railway Commissioners to deal with western cases. It is expected that legislation to carry this into effect will be introduced at the next session of Parliament and that a separate board, under an Assistant Chief Commissioner will be appointed with headquarters in the west.

The Canadian Railway Club has changed its monthly meetings at Montreal to the second Tuesday in the month, instead of the first Tuesday, as heretofore.

The C.P.R. has changed the name of its Ottawa union station to Ottawa Broad St. station. The central station, owned by the G.T.R., which is also used by the C.P.R. for certain trains is designated in C.P.R. time tables as Ottawa Sparks St. station.

Lt. Col. H. E. Greenwood, Assistant Chief Engineer, Mackenzie, Mann & Co., Ltd., returned to Toronto early in September from Great Britain. While there he engaged a number of young men to act as resident engineers, and in other positions on the Canadian Northern Ontario Ry. construction between Ottawa and Port Arthur. The resident engineers' pay is about $100 a month and board. Applicants for positions were informed that they must provide transit, theodolite level and drawing instruments and pay their passage to Toronto.

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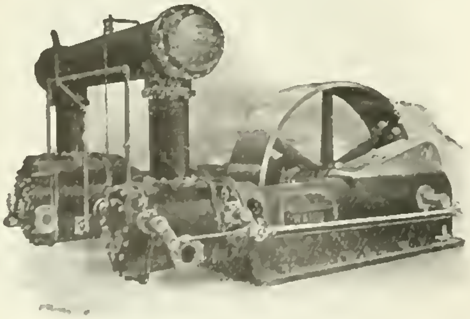

In buying Rand Compressors, you buy future machines, not low price, but high grade, high efficiency, large capacity machines, that mean sustained economy.

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Canadian RAND Co., Limited
COMMERCIAL UNION BUILDING, MONTREAL, CAN.
Offices at: TORONTO COBALT WINNIPEG ROSSLAND VANCOUVER HALIFAX

TRANSPORTATION APPOINTMENTS.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Board of Railway Commissioners.—A. T. Kerr, has been appointed Assistant Engineer for Alberta and British Columbia. Office, Calgary, Alta.

H. A. K. Drury, continues as Assistant Engineer at Winnipeg, for Manitoba, and Saskatchewan, instead of for all territory west of Lake Superior as heretofore.

Canadian Northern Ontario Ry.—A. N. Molesworth, heretofore District Engineer, National Transcontinental Ry., at Cochrane, Ont., has been appointed District Engineer C.N.O.R. Office, Ottawa, Ont.

C. T. DeLamere has been appointed Division Engineer, Division C. Gowganda Jct.-Port Arthur section, vice R. H. McCoy, accidentally drowned. Office, Nipigon, Ont.

Canadian Northern Ry.—R. A. Lennox, heretofore in Canadian Northern Steamships Department, has been appointed Travelling Freight Agent, Toronto, vice M. A. Thompson, transferred to Hamilton, Ont.

M. A. Thompson, heretofore Travelling Freight Agent, Toronto, has been appointed Travelling Freight Agent, Hamilton, Ont.

Canadian Pacific Ry.—A. C. Lytle, heretofore Assistant Trainmaster, District I, Eastern Division, Farnham, Que., having resigned to enter Montreal St. Ry. service, as Assistant Superintendent of Construction, the position of Assistant Trainmaster at Farnham, has been abolished.

C. W. Stackhouse has been appointed Locomotive Foreman at Three Rivers, Que., vice H. Frawley, transferred to Ottawa, Ont.

J. M. R. Fairbairn, heretofore Engineer of Maintenance of Way, and acting Assistant Chief Engineer, Eastern Lines, has been appointed Assistant Chief Engineer, Eastern Lines, vice J. G. Sullivan, appointed Assistant Chief Engineer, Western Lines, Winnipeg, in January.

A. T. Shaughnessy, heretofore in the office of G. M. Bosworth, Vice President, has been appointed Contracting Import Freight Agent, Atlantic Steamship Lines. Office, Board of Trade Bdg., Montreal.

H. Frawley, heretofore Locomotive Foreman at Three Rivers, Que., has been appointed Locomotive Foreman at Ottawa, Ont., vice F. Nowell, transferred to Lake Superior Division.

T. McCann has been appointed Foreman Boilermaker, Carleton Jct. shops, Ont., vice J. Clarke, resigned.

R. L. Thompson, District Passenger Agent, Toronto, has resigned to enter private business in Toronto.

A. P. Walker has been appointed acting Division Engineer, Ontario Division, Toronto, during the absence on leave of M. A. L. Hertzberg.

G. Joyce, city Ticket Agent, Woodstock, Ont., and also agent Dominion express Co. is reported to have resigned to engage in business in Montreal.

E. T. Wright has been appointed Storekeeper at Schreiber, Ont.

D. S. Schofield, heretofore Storekeeper at Lethbridge, Alta., has been appointed Storekeeper at Kenora, Ont., vice W. J. Fidler, transferred to the General Stores Department, Winnipeg.

C. H. Allen has been appointed Real Estate Agent for Western Lines, in charge of all properties owned or used on operated lines, and will procure and keep the necessary documents and all particulars in connection therewith, which particulars he will furnish to any officer interested, on request. He will also have charge of the disposal by sale or lease of any such properties which the company may from time to time decide are not then required for its operating purposes or for sites for the handling of grain, coal and lime. Office, Winnipeg.

G. Pratt, heretofore Maintenance Foreman, Winnipeg shops, has been appointed General Locomotive and Fuel Inspector, Western Lines, Winnipeg.

J. Enman, heretofore in the Bridge and Building Department, Brandon, Man., has been appointed Maintenance Foreman, Winnipeg shops, vice G. Pratt, promoted.

G. Brooke has been appointed Storekeeper at Souris, Man. This is a new position.

R. S. Aylan has been appointed Storekeeper at Hardisty, Man. This is a new position.

H. H. Boyd, heretofore District Master Mechanic, Cranbrook, B.C., has been appointed Superintendent District 2,, Saskatchewan Division, vice E. L. Chudleigh, resigned. Office, Saskatoon.

J. V. McNab, heretofore Resident Engineer Moose Jaw, Sask., has been appointed Resident Engineer at Saskatoon, Sask., vice R. C. Smith, transferred, as reported in our last issue.

R. C. Smith, heretofore Resident Engineer at Saskatoon, has been appointed Resident Engineer at Moose Jaw, Sask., vice J. V. McNab, transferred, as reported in our last issue.

I. Haynes, heretofore Shop Foreman, Calgary, Alta., has been appointed Car Foreman at Lethbridge, Alta., vice J. W. Marshall, transferred to Winnipeg car shops.

N. C. Stibbs has been appointed Storekeeper at Lethbridge, Alta., vice D. S. Schofield, transferred to Kenora, Ont.

F. R. Pennyfather, heretofore Locomotive Foreman, Lethbridge, Alta., has been appointed District Master Mechanic, Cranbrook, B.C., vice H. H. Boyd, promoted.

A Mainprize, heretofore switch foreman, has been appointed Night Yardmaster at Revelstoke, B.C. This is a new position.

T. J. Wall, heretofore City Passenger Agent, Chicago, Ill., has been appointed General Agent, Passenger Department, Spokane, Wash., vice G. A. Walton, transferred to Chicago, Ill.

Grand Trunk Pacific Ry.—R. G. Gilbride has been appointed Locomotive Foreman at Graham, Ont., vice J. P. Hogan, assigned to other duties.

R. Gardiner, heretofore acting Locomotive Foreman, Transcona, Man., has been appointed Locomotive Foreman at Mellville, Sask., vice A. F. Lozo, resigned to enter private business.

J. H. Hanna, who was Division Freight Agent, G.T.R., at Hamilton, until May 1, 1903, when he resigned and went to Calgary on account of ill health, is reported to have been appointed City Passenger Agent G.T.P.R. at Calgary.

Grand Trunk Ry.—C. R. Morgan, is acting as City Passenger and Ticket Agent at Hamilton, Ont., the position held by his late father, C. E. Morgan, not having yet been permanently filled.

H. W. Matthews, heretofore Passenger Trainmaster, Western Division, Detroit, Mich., has been appointed Trainmaster, District 25 (G.T. Western Ry.) and District 29, (Detroit Division). All reports heretofore made to the Assistant Superintendent at Battle Creek, Mich., and Trainmaster at Durnand, Mich., from these Districts, will be made to him. Office, Port Huron, Mich. The position of Passenger Trainmaster has been abolished.

The following agents have been appointed: Severn, Ont., B. Sine (acting); Trout Creek, Ont., J. E. Bell; Lisle, Ont., J. Orr; Glencairn, and Avening, Ont., R. Stephenson; Fergus, Ont., O. Martin; Lucknow, Ont., S. Young; South Indian, Ont., W. J. Buberville; Barry's Bay, Ont., W. P. Bradley; Aubrey, Que., J. Beaupre.

Great Northern Ry.—W. R. Dale, heretofore chief clerk, C.N.R., Seattle, Wash., is reported to have been appointed General Agent, Victoria, B.C., vice E. R. Stephen, resigned to enter private business.

National Transcontinental Railway.—S. N. Parent, Chairman, is reported to have resigned, and it is said the other Commissioners will do the same, in consequence of the defeat of the liberals in the Dominion elections.

H. M. Balkam, heretofore Inspecting Engineer, Ottawa, has been appointed District Engineer, Cochrane, Ont., vice A. N. Molesworth, resigned, to enter C.N.O.R. service.

G. L. Mattice, Assistant District Engineer, North Bay, Ont., has had his office moved to Cochrane, Ont.

Union Pacific Rd., Southern Pacific Co., Oregon Short Line Ry., Oregon-Washington Rd. and Navigation Co. It was stated in our last issue that G. W. Vaux, Travelling Passenger Agent, Toronto, had been appointed Canadian Passenger Agent. A copy of the circular issued by the General Agent, Detroit, Mich, since received assigns him the following territory: points in Ontario, Sault Ste. Marie, Ont., and east to, and including points in Quebec, west of an imaginary line commencing at Riviere du Loup and St. Lawrence River, thence south to the Northern state line of Maine.

Wabash Rd.—G. C. Knickerbocker, heretofore Travelling Freight Agent, Toledo, O., has been appointed Travelling Freight Agent, New York State territory, reporting to General Agent at Buffalo; the New York State territory being divided between him and W. N. Price, District Freight Agent. Office, Ellicott Square Bldg., Buffalo. N.Y.

White Pass and Yukon Ry.—O. L. Diskeson, Vice President, has also assumed the duties of General Manager, vice A. L. Berdoe, resigned.

G. H. Miller has been appointed acting Auditor, vice W. B. King, resigned. Office, Skagway, Alaska.

C. J. Rogers has been appointed acting Purchasing Agent and Cashier, vice H. H. Phillips, resigned. Office, Vancouver, B.C.

Creosoting Ties.—The Canadian Northern Ry. has, we are officially advised, made an arrangement with Alex. Bruce & Co., for the preservative treatment of 500,000 ties, by the Bruning & Marmetsche process. The plant, which is to be erected at Fort Frances, Ont., will have a capacity of about 2,000 ties a day, and the C.N.R. has agreed to deliver enough 8 ft. ties to keep the plant employed till the contract is completed. This year 100,000 ties are to be delivered. and the balance during 1912, the whole 500,000 to be treated by Dec. 31, 1912.

C.N.R. Elevator at Port Arthur.—Hugh Sutherland, Executive Agent, Canadian Northern Ry., Winnipeg, is reported to have stated there, Sept. 6, that the company would shortly increase its storage capacity at Port Arthur. Estimates are being prepared, but it is said that work will not be commenced this year owing to the lateness of the season.

A conciliation board will shortly be appointed to consider the question of the G.T.P.R. machinists and boilermakers for a similar wage and time schedule to that which prevails on the C.P.R. and C.N.R.

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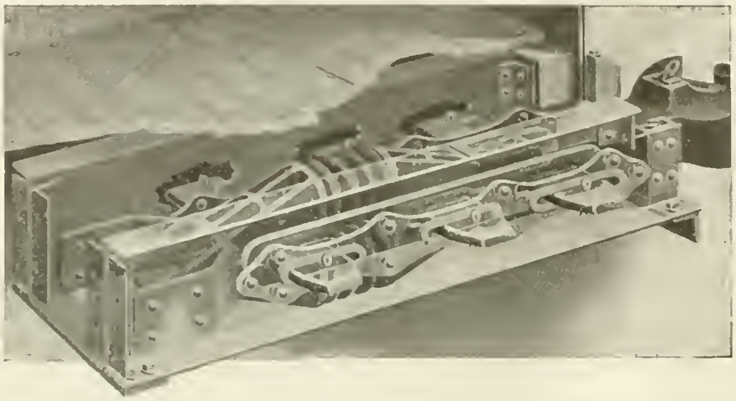

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4 Steel Side Links
6 Steel Draft Keys

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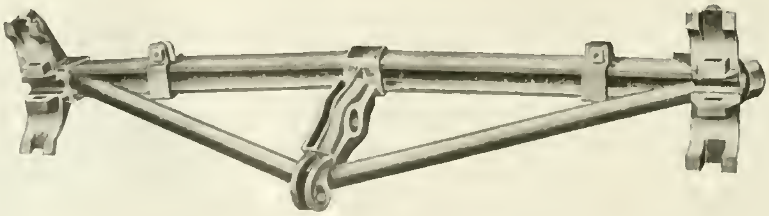

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Brake Beams for All Classes of Cars, Locomotives and Electric Equipment

The Retirement of Sir William Whyte from the C.P.R. Service.

The withdrawal of Sir William Whyte, Vice President of the C.P.R., from active railway work, after 46 years continuous service in Canada, first with the G.T.R. and for 28 years with the C.P.R. and its acquired lines, is an event of really national importance, and the announcement has been received with deep regret, not only throughout the vast territory of empire extent west of Lake Superior, where he has had general charge of all the company's great interests, but in every part of Canada, his name being a household word from the Atlantic to the Pacific.

After most satisfactorily serving the C.P.R. in various operating positions in Ontario and Quebec, Mr. Whyte went to Winnipeg in 1886, as General Superintendent of the then Western Division, in charge of all lines between Lake Superior and British Columbia's eastern boundary. In the following year he was made Manager of all lines west of Fort William to the Pacific Coast and in 1901 was appointed Assistant to the President. In Dec. 1903 came the crowning point in his career, when he was appointed Second Vice President in general charge of the maintenance and operation of the Western Lines, and, under the President's direction, of the administration of the company's affairs in the territory between Lake Superior and the Pacific Coast. Never has any other railway appointment in Canada been so popularly acclaimed. The people and the press throughout the west unanimously gave expression to the general feeling of satisfaction and a new era of relations between the company and the western public was inaugurated.

In the years that have elapsed the wisdom of the C.P.R. directorate in placing Sir William at the head of its western affairs has become plainer day by day. He has administered its great interests with conspicuous ability and unwearying devotion, and while maintaining the company's position has carried the public with him, by his absolute candor and fairness. The public confidence in his integrity has been a most valuable asset to the company and has enabled him to carry through many negotiations in a manner that very few indeed, if any other, men could have done. A notable instance of how he could maintain the company's position without alienating public opinion occurred in the eighties, when the Northern Pacific Rd., backed by the Manitoba Government, the Winnipeg Board of Trade and in fact the citizens generally, attempted to lay a track across the C.P.R. in the Fort Rouge suburb of Winnipeg. Mr. Whyte having been apprised of what was to be attempted, was on the spot with a small army of men, before the N.P.R. forces arrived. He effectually prevented the laying of the crossing, for which there was no legal authority, but so judiciously handled the delicate situation that he made no enemies for himself or the company. The historic name, Fort Whyte, will ever be a reminder of this memorable incident, when most serious trouble might easily have occurred had the protection of the company's interests been in the hands of a less diplomatic man.

Among the other officers and employes of the Western Lines there is the deepest regret at the severance of the tie with their chief of so many years. Absolutely fair in every respect, Sir William has for years been looked on as the friend of everyone on the pay roll and everyone knew that he could always get a patient and fair hearing and that he would not be the victim of any injustice or hasty action.

The history of Sir William's administration of the vast territory under his jurisdiction is practically the history of its general development and expansion. From a comparatively small mileage, he has seen the company's lines west of Lake Superior grow many times over, until the Western Lines alone have today more mileage than many of the more important systems on this continent. Most of the mileage has been constructed on his initiative and recommendation, in which and many other respects he has taken a foremost position as a great empire builder.

Sir William Whyte.

Under ordinary circumstances, Sir William would have retired three years ago, at the age of 65, but as Sir Thomas Shaughnessy stated in announcing the retirement at a dinner in Winnipeg a short time ago, he personally solicited Sir William to remain in office for a few years longer. It is most gratifying that Sir William's great experience and ability will still be at the company's service as a director and we trust that he may be spared for many years to enjoy the rest and leisure which he has so well earned. In retiring, he carries with him the best wishes of the entire people; he has the satisfaction of knowing that he has done his duty, and his whole duty to the fullest extent, and that he is without any exception, the most respected and most popular man in the entire west.

The following extracts from leading western papers endorse everything we have said:

Winnipeg Free Press: "The retirement of Sir William Whyte, marks the end of an era in the development of the country and of the railway company. . . . . With the era which may be said to have closed, no name is more closely associated than that of Sir William. His personal faith in the value of the prairie provinces never wavered, and from the beginning he pressed consistently for the speedy construction of further mileage and the supply of better equipment. When others were despondent and disposed to believe that the investment in the C.P.R. might prove a poor one, he urged a continuance of the policy of expansion. In all the large undertakings of a commercial nature, he took a deep interest, and while on every occasion seeking to protect the interests of the railway company, he sought also to aid and assist those who were doing the work necessary to develop the country. . . . . He has gained a knowledge of the west which is not possessed by any other resident of the country, and his personal acquaintanceship west of Lake Superior is probably more widespread than that of any other citizen. In his contact with western people he has always inspired a spirit of hope and optimism, and has shown both in word and deed a readiness, so far as it was possible for him, to furnish to communities and to individuals the opportunity for advancement. So far as the employes of the C.P.R. are concerned, it may probably be said with truth that no railway official in Canada was ever regarded with esteem equal to that in which Sir William is held. Men in all positions in the employ of the corporation have been disposed to believe in his fairness and justice, and to accept his statements as final. He will carry with him into private life the warmest and kindest regard of thousands of workmen as well as of the officials with whom he has been so closely associated for so long a time."

Winnipeg Tribune: "Western Canada learns with profound regret that Sir William Whyte is about to retire. The company and Canada will lose the services of a man who ranks as a railway statesman, a man of the broadest ideas, progressive, conciliatory and considerate, one who has maintained the respect and esteem of every section of the people since the first day that he set foot on Manitoba soil. . . . . Sir William has been the living example to the C.P.R. men. The courtesy, the thoughtfulness for public comfort, the care of life and limb, the general good conduct of the thousands of men in the C.P.R. service in Western Canada, all of these things may be set down in a large measure to the credit of Sir William. . . . . He has earned the greatest reward that comes to any man on this side of time, namely, the highest esteem and profoundest respect of his fellow man."

Vancouver News Advertiser: "Sir William Whyte will be remembered as essentially a public man and regarded as one of the makers of Canada. . . . He saw from the first what the country would be, and became a source of inspiration to his company, and on the other side to the settlers, business men and investors in the west. Personally identified with all sorts of movements looking toward the development of Western Canada, both in material things, and in the higher lines of advancement, Sir William, with a great corporation behind him, and the unlimited resources of his own initiative and enthusiasm, became a power in the land. It is easy now to go on with this campaign, but it is not surprising that the older prairie people and the public of Winnipeg, who have been through the struggle, have been nominating Sir

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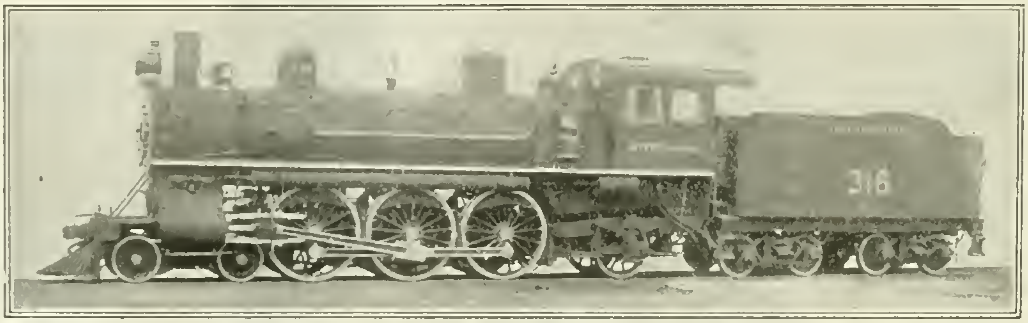

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Levis,	24.10	St. John,	11.20	Halifax,	22.00	Montreal,	7.35

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Through Sleeping Cars Between Montreal, St. John and Halifax. Dining car service unequalled.
Daylight views of the Matapedia and Wentworth Valleys. Direct connection for Prince Edward Island and the Sydneys.

William for everything in sight."

Victoria, B.C., Colonist: "The retirement has been expected for some little time, but it will be none the less regretted by every person who has any business transactions with him. Sir William had not only great qualifications for the very important post that he filled, but is a genial, whole-souled, public-spirited gentleman.."

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Railway Rolling Stock Notes.

The G.T.P.R. has received four consolidation locomotives.

The G.T.R. has ordered 25 locomotives from the Canadian Locomotive Co., Kingston, Ont.

The G.T.R. is asking tenders for four mogul locomotives for its Detroit and Toledo shore lines.

The 250 box cars which the Canadian Northern Ry. has ordered from the Crossen Car Manufacturing Co., Cobourg, Ont., as mentioned in our last issue, will be of 60,000 lbs. capacity, 36 ft. long, and will be equipped with Simplex bolsters and brake beams and Westinghouse air brakes.

The Canadian Car and Foundry Co., Montreal, is building 15 Hart convertible ballast cars for the Hart-Otis Car Co., Montreal; one snow plow for F. H. Hopkins and Co., Montreal; 30 six-ton mining cars for the Great Northern Mining Co., and two 30-ton flat cars for the Canadian Explosives Co.

The Canadian Northern Ry., between Aug. 15 and Sept. 16, ordered the following additions to rolling stock: six cabooses from the Crossen Car Manufacturing Co., Cobourg, Ont., and 150 flat cars; also 10 refrigerator cars and 20 stock cars, for the Duluth, Winnipeg and Pacific Ry., from the United States.

The 20 stock cars which the Duluth, Winnipeg and Pacific Ry. (C.N.R.) has ordered in the United States, will be equipped with Simplex truck bolsters and brake beams, R. E. Janney couplers, Westinghouse air brakes, McCord journal boxes, steel back brake shoes, class A truck springs and axles of open hearth steel.

The C.P.R., between Aug. 18 and Sept. 12, ordered the following additions to rolling stock: 76 box cars, seven stock cars, one van, 15 first class cars, 10 sleeping cars, five dining cars, six tourist cars, two double track snow ploughs, seven flangers and three D.10 locomotives from its Angus shops, Montreal, and 15 single track snow ploughs from the Canadian Car and Foundry Co., Montreal.

Following are the chief details of the 10 second class coaches which the Canadian Northern Ry. is having built by the Canadian Car and Foundry Co., Montreal, as mentioned in our last issue:—

Length over end sills	72 ft. 6 ins.
Width over side sills	9 ft. 10½ ins.
Width over all at eaves	10 ft. 2¾ ins.
Width between deck sills	5 ft. 6 ins.
Height, top of sill to bottom of plate	6 ft. 8½ ins.
Platforms	Standard Coupler Co., type A-3
Body bolsters	Double cast steel

The Canadian Northern Ry., between Aug. 15 and Sept. 15, received the following additions to rolling stock: 42 flat cars, 149 box cars, two first class cars and three dining cars, from the Canadian Car and Foundry Co., Montreal; 46 refrigerator cars (freight) from the Crossen Car Manufacturing Co. Cobourg, Ont.; five second class and baggage cars from the Preston Car and Coach Co., Preston, Ont.; 130 box cars from the Nova Scotia Car Works, Halifax, N.S., and 350 box cars for the Duluth, Winnipeg and Pacific Ry., from the United States.

The C.P.R., between Aug. 18 and Sept. 12, received the following additions to rolling stock: 350 wooden box cars, 32 stock cars, 29 vans, one freight, refrigerator cars, two compartment sleeping cars, one baggage and smoking car, two horse express cars, one business car, five switching locomotives, four D.10 locomotives and one Mallet locomotive from its Angus shops, Montreal; 503 steel frame box cars from the Canadian car and Foundry Co., Montreal; eight N.3 locomotives from the Montreal Locomotive Works; five N.3 locomotives from the Canadian Locomotive Co., Kingston, Ont., and 92 steel frame box cars and 72 coal cars from the U.S.

The Algoma Steel Co., has ordered two six wheel switching locomotives from the Montreal Locomotive Works. Following are the chief details:—

Cylinders, diar. and stroke	19 by 24 ins.
Driving wheels, diar	50 ins.
Boiler pressure	185 lbs.
Firebox	84 by 33¾ ins.
Tubes, no. and diar.	218-1 ins.
Tubes, length	11 ft.
Wheel base, driving	11 ft.
Weight, total	123,000 lbs.
Heating surface, tubes	1246 sq. ft.
Heating surface, firebox	107 sq. ft.
Heating surface, total	1353 sq. ft.
Grate area	19.7 sq. ft.
Maximum tractive power	27,250 lbs.

Following are the chief details of the 10 freight refrigerator cars which the Duluth, Winnipeg and Pacific Ry. (C.N.R.) has ordered in the United States:—

Length over end sills	36 ft. 9¾ ins.
Length inside	33 ft. 10 ins.
Width over side sills	9 ft. 0¾ ins.
Width inside	8 ft. 1 in.
Body and truck bolsters	Simplex
Couplers	R. E. Janney cast steel
Air brakes	Westinghouse
Brake shoes	Steel back
Brake beams	Simplex
Journal boxes	McCord
Springs	Simplex
Axles	Open hearth steel
Galvanized ice boxes	4 in each end of each car

Following are additional details of the 10 Richmond compound consolidation locomotives which the G.T.R. recently ordered from the American Locomotive Co., Schenectady, N.Y., as mentioned in our last issue:—

Weight on front truck	26,400 lbs.
Weight on first pair drivers	48,350 lbs.
Weight on second pair drivers	44,430 lbs.
Weight on third pair drivers	48,720 lbs.
Weight on fourth pair drivers	43,300 lbs.
Weight on drivers, total	184,800 lbs.
Weight on front tender truck	65,600 lbs.
Weight on rear tender truck	77,700 lbs.
Weight of engine, loaded	211,200 lbs.
Weight of tender, loaded	143,300 lbs.
Wheel base, engine and tender	57 ft. 3½ ins.
Total length, engine and tender	67 ft. 6½ ins.

Following are chief details of the 10 consolidation locomotives, type D.4, which the C.P.R. has ordered from the Montreal Locomotive Works, as mentioned in our last issue:—

Cylinders, diar., and stroke	23½ by 32 ins.
Driving wheels, diar.	63 ins.
Boiler pressure	180 lbs.
Tubes, no. and diar.	270-2 ins. & 24-5 ins.
Wheel base, driving	16 ft. 6 ins.
Wheel base, total	25 ft. 5 ins.
Weight on drivers	195,000 lbs.
Weight, total	220,000 lbs.
Heating surface, tubes	2620 sq. ft.
Heating surface, firebox	165 sq. ft.
Heating surface, total	2785 sq. ft.
Grate area	40 sq. ft.
Maximum tractive power	43,000 lbs.

The Canada Iron Corporation has ordered two six wheel switching locomotives from the Montreal Locomotive Works. Following are the chief details:—

Cylinders, diar. and stroke	19 by 26 ins.
Driving wheels, diar.	50 ins.
Boiler pressure	180 lbs.
Firebox	102 by 33 ins.
Tubes, no. and diar.	218, 2 ins.
Tubes, length	11 ft.
Wheel base, driving	11 ft. 6 ins.
Wheel base, engine and tender	40 ft. 10 ins.
Weight in working order	124,000 lbs.
Heating surface, tubes	1480 sq. ft.
Heating surface, firebox	140 sq. ft.
Heating surface, total	1620 sq. ft.
Grate area	23.4 sq. ft.
Maximum tractive power	28,720 lbs.

The Algoma Central and Hudson Bay Ry., has 180 steel under frame cars, 80,000 lbs. capacity, and 25 steel under frames on order with the Canadian Car and Foundry Co., Montreal; 50 Otis type general service cars, with the Hart-Otis Car Co., Montreal; five consolidation freight locomotives with cylinders 22½ by 28 ins., with the Montreal Locomotive Works, and five similar locomotives and five 10-wheel locomotives, with the Canadian Locomotive Co., Kingston, Ont. The 25 steel under frames will be completed as flat cars in the company' shops at Sault Ste. Marie, Ont. Of the locomotives mentioned, the 10 consolidation ones are to be delivered this fall, and the five 10-wheel ones in the spring, while the company has, in addition, received five consolidation locomotives from the Montreal Locomotive Works this year. Further orders for rolling stock are under consideration, but we are advised that the plans are not yet completed.

The G.T.R. has ordered 10 switching locomotives in the United States, for use on its U.S. lines. Following are the chief details:

Weight	139,500 lbs.
Cylinders	20 by 26 ins.
Drivers, diar	56 ins.
Boiler, type	Straight, 66 ins.
Boiler, pressure	190 lbs.
Heating surface, tubes	1772 sq. ft.
Heating surface, firebox	148 sq. ft.
Heating surface, total	1920 sq. ft.
Tubes, no. and diar.	264-2 ins.
Tubes, length	12 ft. 9½ ins.
Firebox	98½ by 40⅛ ins.
Grate Area	27.44 sq. ft.
Capacity, water	4,500 galls.
Capacity, coal	8 tons
Axles	Steel.
Bell ringer	G.T.R. standard.
Boiler lagging	Franklin Railway Supply Co.
Air brakes	Westinghouse.
Brake beams and shoes	G.T.R. standard.
Brick arch	Supported on water tubes.
Driving boxes	Cast iron.
Sanding device	G.T.R. standard.
Sight feed lubricators	Detroit Lubricator Co.
Wheel centres	Cast steel.

Following are chief details of the 10 six wheel switching locomotives which the G.T.R. has ordered from the Montreal Locomotive Works:

Cylinders, diar and stroke	20 by 26 ins.
Driving wheels, diar.	56 ins.
Boiler, outside diar, 1st course	66 ins.
Boiler, pressure	190 lbs.
Firebox	98½ by 40⅛ ins.
Tubes, no. and diar.	264-2 ins.
Tubes, length	12 ft. 9½ ins.
Heating surface, firebox	140 sq. ft.
Heating surface, tubes	1772 sq. ft.
Heating surface, total	1920 sq. ft.
Grate Area	27.44 sq. ft.
Capacity, water	4,500 U.S. galls.
Capacity, coal	8 tons
Weight	139,500 lbs.
Wheel base, engine	12 ft. 8 ins.
Wheel base, engine and tender	42 ft. 4 ins.
Weight of tender	110,000 lbs.
Inside finish	Birch, stained mahogany
Lighting	Commercial Acetylene Co.
Heating	Gold Duplex with Frumveller heater
Fire extinguishers	Miller, No. 8
Air brakes	Westinghouse P.M. 1612
Trucks	C.N.R. standard 6-wheel, 60,000 lbs.
Wheels	36 in., steel tired, cast steel centres
Axles	M.C.B. steel, 4¼ by 8 ins.
Bolster springs	36 ins. double elliptic
Equalizer springs	8½ by 10 ins., 3 coils
Brake beams	Simplex high speed
Journal boxes	McCord malleable
Journal bearings	Canadian Bronze Co.

The Reid Newfoundland Co., is building at its shops at St. John's Nfld., eight 10-wheel locomotives. One of these has been completed, and was recently given a trial run to Killigrews and back, with satisfactory results. This was the first locomotive built in the colony. Following are the chief details:—

Gauge	3 ft. 6 ins.
Cylinders	17 by 22 ins.
Cylinder valves	Balanced
Boiler, type	Straight, radial stayed
Boiler, material	Steel, ⅝ in. thick
Boiler, diar.	56 ins.
Boiler, pressure	180 lbs.
Firebox	97¼ by 33¾ ins.
Firebox, material	Steel
Firebox, depth	Front, 54 ins., back 48¾ ins.
Firebox, sheets	Sides and back, ⅜ in., crown, 7-16 in., tube, 9-16 in.
Tubes, no. and diar.	184, 2 ins.

Tubes, length	12 ft.
Heating surface, firebox	92.5 sq. ft.
Heating surface, tubes	1,200 sq. ft.
Heating surface, total	1,292.5 sq. ft.
Driving wheels, diar.	50 ins.
Journals	7 by 8 ins.
Truck wheels, diar.	26 ins.
Journals	4¼ by 8 ins.
Wheel base, driving	11 ft.
Wheel base, engine	20 ft. 5 ins.
Wheel base, engine and tender	48 ft.
Weight on driving wheels	74,000 lbs.
Weight on front truck	17,000 lbs.
Weight, total engine	91,000 lbs.
Weight, total engine and tender	147,000 lbs.
Tender type	8-wheel
Wheels, diar.	30 ins.
Journals	4¼ by 8 ins.
Capacity, water	2,800 galls.
Capacity, coal	5½ tons
Air brake	Westinghouse standard automatic
Air signal and pump	Westinghouse
Steam heating	Gold improved
Lubricators	Nathan Mfg. Co. triple sight feed bull's eye

The Grand Trunk Ry. is asking prices on ten 30-ft. and ten 40-ft. steel underframe flat cars.

The Grand Trunk Ry. has placed a contract with the Canadian Car and Foundry Co., Montreal, for 1,000 box cars, nos. 19,000 to 19,999, having a capacity of 60,000 lbs., with length over all, 36 ft. 9¾ ins., length inside, 36 ft., width 8 ft. 6 ins., height inside, 8 ft., underframes, steel, air brakes, Westinghouse.

Telegraph and Cable Matters.

The Canadian Northern Telegraph Co. has opened offices at Lampman and Parkman, Sask., and has closed its offices at Bresaylor, Jameson and Langbank, Sask.

A London, Eng., press dispatch of Sept. 15, stated that the Anglo-American Cable Co., the Western Union Telegraph Co., and the Direct United States Cable Co. have amalgamated.

The C.P.R. is renewing its telegraph line between Chilliwack and New Westminster, B.C. A two circuit line is being erected with new poles. This line was for some time operated by the B.C. Telephone Co. as a telegraph and long distance telephone line, but was abandoned some time ago in favor of another route.

A cable message was sent around the world recently by the New York Times in 16½ min., It was relayed at San Francisco, Honolulu, Midway Island, Manilla, Hong Kong, Saigon, Singapore, Madras, Bombay, Aden, Suez, Port Said, Alexandria, Malta, Gibraltar, Lisbon and the Azores. In all, 21,397 nautical miles (24,963 land miles) of submarine cable and 3,650 land miles of telegraph line were traversed.

The erection of the telegraph line in the St. Barbe district, Nfld., is proceeding, the work having been completed as far as St. Barbe, and it was expected connection would be made with Flower's Cove before the end of Sept. From the latter point the line will be carried along the shore to Cape Norman. The poles for the last section are ready, but work has been somewhat delayed owing to the difficulty of getting men.

The 42nd annual report of the Dominion Telegraph Co., shows assets of $1,310,530 and liabilities of $1,016,860, with a balance to credit of profit and loss of $293,670. Following are the officers and directors for the current year: President, T. Swinyard; Vice President, Sir Henry M. Pellatt; Secretary-Treasurer, F. Roper; other directors, B. Brooks, T. F. Clark, R. C. Clowry, Æ. Jarvis, C. O'Reilly and A. G. Ramsay.

The Newfoundland Government has opened telegraph offices at Daniel's Harbor and Port au Choix, in connection with the telegraph line extension which was completed to those points last year. Further extensions are being made this season, wires having been erected beyond Port au Choix to within a few miles of Brig Bay. It is anticipated that before the close of the season the line will be completed round Cape Norman, and offices opened at Brig Bay, Flower's Cove and Cape Norman.

The Marconi Wireless Telegraph Co., of Canada's report for the year ended Jan. 31, 1910, recently issued, shows total traffic receipts of $36,100, and it is stated that there is every anticipation that the receipts for the current year will be about 20% in excess of that figure. The directors propose to create and issue $2,500,000 thirty year first mortgage 6% gold bonds, $1,000,000 to be issued immediately, the proceeds to be used to pay off the company's indebtedness, the balance of the bonds only to be issued when the further development of the company requires further capital. The report is signed by A. A. Allan, Montreal, President.

The Marconi Wireless Telegraph Co.'s annual report shows gross trading profit of £127,452, and after deducting a number of expenses, including salaries, directors' fees and managing director's remuneration, there is a net profit of £60,513. After payment of preference dividend amounting to £16,600, there is a balance of £49,119. The assets show an amount owing by the Marconi Wireless Telegraph Co. of Canada, of £163,865, which the reports' states has not been paid owing to the recent prosecution of officers of the United Wireless Telegraph Co., having disturbed the financial atmosphere concerning wireless telegraphy.

Among the Express Companies.

The Dominion Ex. Co. has closed its offices at Royal Muskoka and Port Cockburn, Ont., for the season.

T. H. McGarrell, agent, Dominion Ex. Co., New Liskeard, Ont., was married to Miss L. F. Traynor at Grand Forks, N.D., recently.

F. N. Wiggins, heretofore in Canadian Northern Ex. Co. service at Winnipeg, has been appointed Superintendent, C.N. Ex. Co., Ontario Division, in charge of lines east of Port Arthur and west of Ottawa. Office, Toronto.

The Canadian Northern Ex. Co. has inaugurated its service on the C.N.O.R. between Toronto and Trenton, and has opened offices at Malvern, Brooklin, Oshawa, Bowmanville, Orono, Port Hope, Cobourg, Grafton, Colborne, Brighton and Trenton.

The Canadian Northern Ex. Co., will re-open its offices, Oct. 2, on the C.N.O.R. between Parry Sound and Sudbury, as follows: Bayswater, Bolger, Burton, Coniston, Cranberry Lake, Deer Lake, French River, Key Jct., Mowat, North Magnetawan, Pickerel River, St. Cloud, South Magnetawan, Still River, Sudbury Jct., Waterfall and Waubamik.

The Board of Railway Commissioners has approved standard mileage tariffs of the Dominion, Canadian, Great Western, United States, American, National and Pacific Ex. Cos., and for express traffic on the Alberta Ry. and Irrigation Co.'s line, and has extended to Oct. 15, the time for the filing of the Dominion Ex. Co.'s standard mileage tariffs of maximum tolls.

The Canadian Northern Ex. Co. has put its service into operation on the Central Ontario Ry., and the Dominion and Canadian Ex. Co.'s which previously operated over the line, have retired. Offices have been opened at Anson Jct., Bancroft, Bannockburn, Birds Creek, Bloomfield, Central Ontario Jct., Coe Hill, Conseon, Eldorado, Frankford, Gilmour, Hillier, L'Amable, Marmora, Maynooth, Millbridge, Ormsby Jct., Picton and Wellington.

Rates on Oysters From New Haven, Conn.

The Board of Railway Commissioners passed the following order, 14723, Sept. 9:—Re complaint of H. Walker & Son, of Guelph, Ont., alleging discrimination in express rates on oysters originating at New Haven, Conn., destined to Guelph, as against the rates to Brantford, St. Thomas and London, Ont. It is ordered that all joint tariffs on oysters from New Haven, Conn., Providence, R.I., and other shipping points of the Adams Express Co., taking the same rates, containing higher through rates than $1.50 per 100 lbs. to Toronto, and $1.55 per 100 lbs. to Guelph, be disallowed.

That the Canadian and Dominion Express Companies on or before Nov. 1, file with the Board joint tariffs providing a through rate of $1,50 per 100 lbs. to Toronto, and $1.55 per 100 lbs. to Guelph; provided that the concurrence of the Adams Express Co. and the American Express Co. can be obtained thereto, and if such concurrence is withheld by either or both of said companies, then the Canadian and Dominion Express companies shall notify the Board thereof, giving the particulars of such refusal (if any) on or before Oct. 21, 1911.

That if any dispute arise as to the division of the said new rates, or any portion thereof, between the Dominion Express Co. and the American Express Co., then the Board will dispose of same upon application by any party interested.

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Locomotive Spark Arresters. — The Board of Railway Commissioners has appointed twelve fire wardens to investigate the spark arrester and other appliances with which locomotives are equipped with the view of deciding what further, if anything, must be done so as to minimize the danger of fires being started in forests and elsewhere along the tracks.

Montreal and Southern Counties Ry.—That no action can be taken on the company's application for rights on additional streets in Montreal until the resumption of negotiations between the city and the Montreal Street Ry. was the decision reached by the Montreal board of control, Aug. 30. (Sept., pg. 879.)

Temiskaming and Northern Ontario Ry.—Gross revenue for July, $149,783.11; expenditure, $117,832.40; net earnings, $31,950.71; hire of equipment, $592.17; outside operations, $300; net result, $31,058.54; percentage of revenue against operation, 78.06.

Canadian Railway Club.—At the recent meeting of the Canadian Railway Club, a paper was read by A. A. Goodchild, Auditor of Stores and Mechanical Accounts, C.P.R., on the accounting department in connection with the mechanical and stores departments.

Alberta Ry. and Irrigation Co.—Notice is given that the company will on Jan. 1, 1912, pay off and redeem the amount of 5% debenture stock outstanding at the final closing of the books, Dec. 4.

Sir Thos. G. Shaughnessy returned to Montreal, Sept. 22, from his inspection trip over the company's lines to the Pacific Coast.

The Board of Railway Commissioners has authorized the operation of trains over the first 100 miles easterly from Prince Rupert at 30 miles an hour instead of 15 as formerly. (Sept., pg. 835.)

The s.s. Princess Alice, the latest addition to the C.P.R.'s British Columbia coast fleet, left Newcastle-on-Tyne, Eng., Sept. 22, for Vancouver, via Cape Horn in charge of Capt. A. Lindgren, who took the s.s. Princess Alice over the same route some months ago.

The Accounting Department in Connection with the Mechanical and Stores Departments.

By **A. A. Goodchild**, Auditor of Stores and Mechanical Accounts, C.P.R., Montreal.

"By their fruits ye shall know them." This truth is as applicable to the various departments of a railway today as it was to those to whom it was spoken, nearly 2,000 years ago.

Whether it be the mechanical, traffic, transportation, maintenance, or any other department of a railway, the results obtained, as set forth in the balance sheet, are the final revelation of their fruit-bearing qualities. The accounting and auditing departments may be briefly described as the unbiased exhibitor of these fruits, without any desire to make them appear more or less worthy of the proprietor's approval than their inherent worth may justify. Some may, perhaps, carry the simile further, with allusions as to the method of preparation for the purposes of exhibition, etc., but in so far as these may infer a desire to overvalue, underrate, or in any manner mislead, they may be dismissed as illusions or delusions of unsuccessful cultivators. The function of accounting and auditing is the accumulation and statement of facts or conditions by means of which the proprietors and managers may know the financial and operating features of a corporation, or of any portion of its business, and it is generally recognized that the head of the department in charge thereof must have a very complete knowledge of the workings of every other department as well as his own, owing to the fact that all of them, whether revenue producing or otherwise, will be found to come under his surveillance in some manner or another. The method by which this surveillance is exercised, however, varies considerably in the many railways of this continent, and in no case is it more noticeable than in connection with the mechanical and storekeeping departments, to which our attention is especially directed at this time. It is the practice of a number of railways to leave considerable actual accounting in the hands of these departments, a balance sheet or other summary being sent to the head office periodically, for incorporation in the accounts of the company; indeed, in so far as the storekeeping department is concerned, the majority of roads may be said to adhere to this practice. Such a condition cannot be said to conform with sound business principles; it would be quite as logical for a departmental store, for example, to permit its various departments to employ and control their own staff of accountants, as it is for a railway to permit its mechanical superintendent or storekeeper to do this. The impropriety is readily recognized in the one case, and it is difficult to justify it in the case of a railway, where the expenditures, etc., are enormously larger than the largest departmental store.

The argument usually met with in justification of such methods is that the work is very largely of a technical nature, and it is necessary to be more familiar with material and its uses than is possible for the general staff of accountants to be. Whatever element of truth there may be in this claim, can, and should be, largely, if not entirely overcome by a proper classification and itemising of material. One of the most essential features of material accounting forces itself upon our consideration right at this point; for whether the work is carried on in the stores, or in a central accounting office, such accounts should undoubtedly lend themselves to proper analytical process, in the same manner as the operating expenses do. Under any circumstances such an argument does not apply more forcibly, if as strongly, in justification of the storekeeping department doing the necessary accounting than in favor of the accounting department, for there is no branch of business life today which necessitates more exact knowledge of details, and correct principles of work than that of the accounting department. Extensive and varied training and experience is required to enable one to become proficient in such matters, and it is not possible for a storekeeper, be he ever so able, to properly meet such demands upon his time. This statement is made without the least desire to detract from the well-known ability of many forceful and energetic men holding, or who have held, such positions of responsibility in many of the railways of this continent.

These are days of specialization in professions of every class and description, and it is but natural that we should look for and expect to find it in all branches of railway work. Instances may be cited where an individual has been endowed with remarkable faculties of combining expert knowledge of a variety of professional duties, and such an individual will almost naturally be found in the high places of professional life; but to the ordinary mortal, to excel in one special line of work may be said to entail the full use of his faculties. Apart, however, from this subject of individual capacity must be considered the actual requirements of the profession—I am referring now to the railway profession—and only to a few—a very few—can the positions of president or general manager ever be more than a mere chimera.

A. A. Goodchild,
Auditor of Stores and Mechanical Accounts, C.P.R., and President, Canadian Railway Club.

Railways today require a large number of specialists and few generalizers. Their organization resembles that of an army. One general in chief, two or more generals of divisions, a limited number of colonels, an increasing number of captains, and a further increasing number of lieutenants. Each officer must be proficient and possess sufficient initiative to enable him to act as though the entire result of any movement depended entirely upon his particular unit to command. Brilliancy is not absolutely essential, but a perfect knowledge, to enable a junior lieutenant to carry out his orders, is entirely necessary.

This question of the relationship of the accounting department to the stores and mechanical departments has been the subject of discussion at various conventions, also of consideration by many of the higher officials in the railway world, evidence of which may be found in the appointment of auditors or other accounting officers, to take full charge of all stores and mechanical accounts, for we may safely assume such changes would not be made except after mature consideration. Of course, the question is one of comparatively minor importance to a number of our smaller railways, for reasons which will at once occur to you. Let us discuss for a few moments the duties, responsibilities, and qualifications of a storekeeper, and in doing this, we shall deal with only the general practice of roads whose storekeepers are the custodians of unused material. The larger question as to the duties of taking cognizance of all material until actually used may be left to some future consideration.

These duties bring him in constant touch with the entire operating department of a road. Locomotive, car, bridge and building, transportation, and other branches of the service are dependent upon him for supplying the necessary materials with which to carry on the work, whether it be construction of a thousand box cars, or the putting on of a patch to the side of a car, the building of cars or monster locomotives, or the supplying of a tender truck box cover wherever we find material being used, there also we find the storekeeper an interested party, and this interest entails upon him the need of cultivating a very close acquaintance with the heads and the requirements of various departments. He is above all also an operating official, and should be able at all times to supply the material needs of the entire road. These needs are varied. No line of business can be excluded from its voracious maw. Hardware, glass, oils, paints, drugs, acids, the precious metals, lumber from the cheapest to the most expensive, minerals, coals, coke, road and shop tools of every description, office supplies, flour, cement, silks, furniture, carpets, and so on, ad lib., all serve to appease, but never satisfy the hunger of our railway systems. What kind of man is required to cater to all these varied needs, and to cater intelligently, in order that he may furnish the maximum amount of satisfaction at a minimum expense to his employers, be ever ready to fill the order and never overload himself with material which the æsthetic taste of a superintendent of motive power, or a master car builder refuses to attempt to digest? Surely a man to fulfill such requirements must be a paragon, surely such duties in themselves entail a large enough field for the most industrious cultivation, and the requisitioning for, receiving, storing, and disbursement of such material, calls for the very highest ability taxed to its utmost capacity.

Having those requirements in mind, let us glance briefly at the various steps one must tread before he can reach the topmost rung of the storekeeping ladder. Let us enter one of our large stores and as we pass along we find our man trucking castings or unpacking boxes of various materials, may be, sweeping away refuse. Later on he is found loading material into cars or getting articles down from the shelves, assisting a storeman. He advances steadily, and is, perhaps given charge of certain divisions or sections of the store house, and in the fulness of time is called upon to assume charge over the entire section or store.

The completion of this paper, read before a recent meeting of the Canadian Railway Club, Montreal, will be given in our next issue.

ELECTRIC RAILWAYS

Canadian Street Railway Association.

President, James Anderson, General Manager Sandwich, Windsor and Amherstburg Ry.; Vice President, P. Dubee, Secretary Montreal St. Ry.; Secretary-Treasurer, Acton Burrows, Managing Director Railway and Marine World.

Association's Office, 70 Bond St., Toronto.

Executive Committee.—E. P. Coleman, Manager of Railways, Dominion Power and Transmission Co.; H. M. Hopper, General Manager, St. John Ry.; J. E. Hutcheson, Superintendent, Ottawa Electric Ry.; C. B. King, Manager, London St. Ry.; D. McDonald, General Manager, Montreal St. Ry.; M. N. Todd, President, Galt, Preston and Hespeler St. Ry.

Assistant Secretary, Aubrey Acton Burrows, Secretary and Business Manager Railway and Marine World.

Official Organ, The Railway and Marine World.

The Toronto Railway Co's Lansdowne Avenue Car Shed.

The rapid growth of Toronto, demanding a constantly increasing number of street cars, made necessary the construction of a new shed to accommodate the growing equipment. The pinch being most keenly felt among the lines terminating in the north-western section of the city, that locality was selected for the new shed, plans for which were begun in 1908, the location being settled upon for Lansdowne Ave., at the corner of Paton Rd., a short distance above Bloor St. This site is midway between the termini of the Bloor and Carlton St. lines, each of which operates a heavy service. All the Bloor and Bathurst cars are accommodated here, also the Spadina, Belt Line, and half the Carlton St. cars. Previously, these cars were spread around among the nearest sheds, the Bathurst at the Roncesvalles shed; Belt Line at Yorkville shed, Carlton at Dundas, and the Bloor at Dundas. The building was completed and moved into in May of this year, under charge of A. J. Edmunds, Divisional Superintendent, who was well qualified for his new duties, having served in a similar capacity at the King St. and other sheds previously.

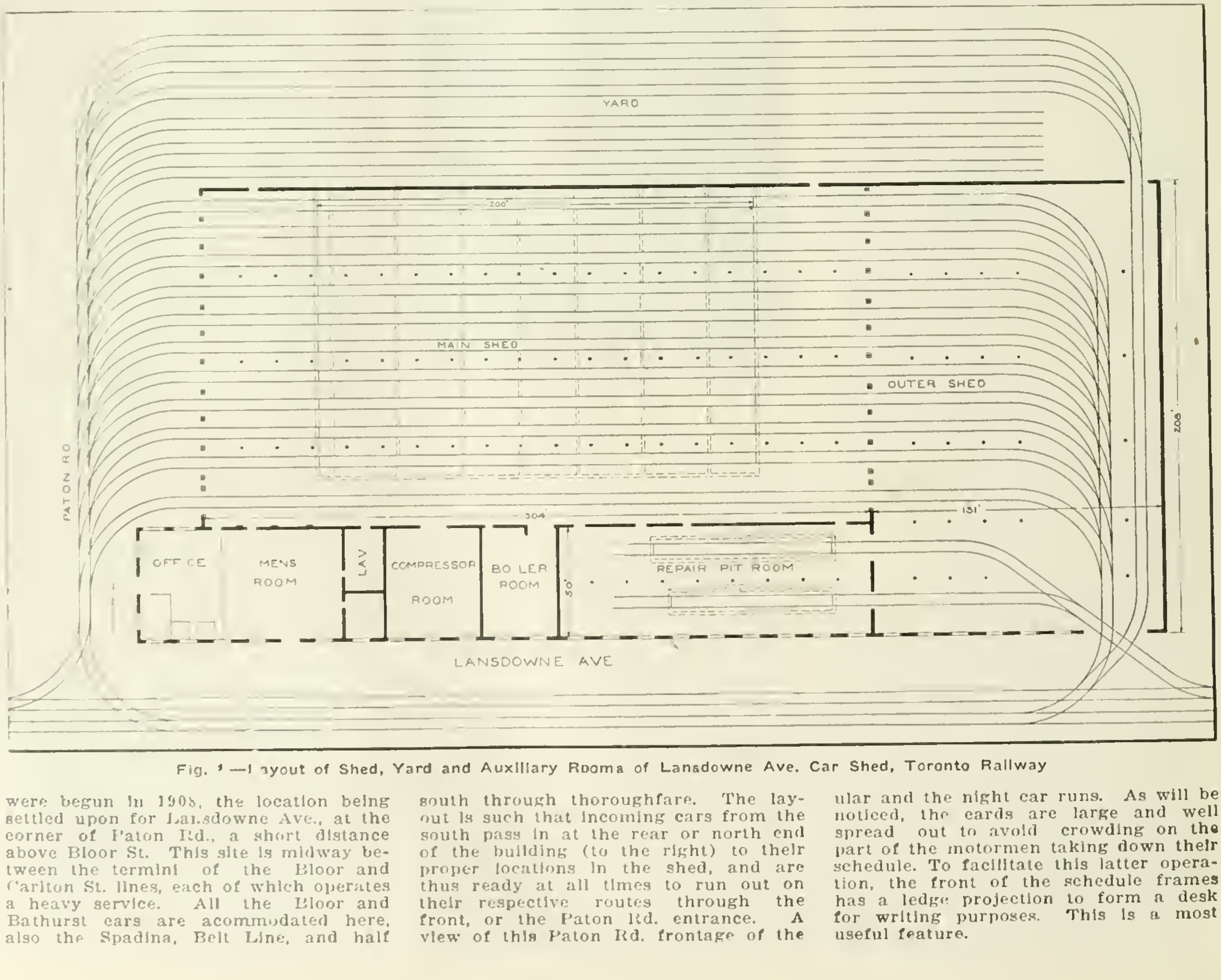


Fig. 1.—Layout of Shed, Yard and Auxiliary Rooms of Lansdowne Ave. Car Shed, Toronto Railway

As mentioned, the plans for the new building were prepared in 1908, following a consideration among the company's superintendents, etc. The idea was to build the best possible shed for the purpose, it being therefore necessary that the ideas of all might be gleaned, the composite idea taking shape in the final plans evolved. It is acknowledged by all, however, that Jno. McCulloch, Division Superintendent, is entitled to credit for many of the new ideas. The plans were prepared by the Imperial Construction Co., which built the shed and offices, the company doing the interior work direct.

The general plan and layout of the shed and yard, is comprehensively shown in fig. 1. It is of the slow-burning mill-building design throughout. As will be noticed, the shed lies along Lansdowne Ave., a principal north and south through thoroughfare. The layout is such that incoming cars from the south pass in at the rear or north end of the building (to the right) to their proper locations in the shed, and are thus ready at all times to run out on their respective routes through the front, or the Paton Rd. entrance. A view of this Paton Rd. frontage of the shed is given in fig. 2. This will present a neater frontage when paved, as it will be in the near future.

Office and Men's Room.

Along the Lansdowne Ave. side of the building are located the various auxiliary rooms of the shed. The more southerly of these—a large room 50 by 92 ft.,—has a cross partition of glass, dividing the office from the men's room. The small rooms indicated in the office are used for divisional superintendent's office, lavatory for office staff and vault. Behind the glass partition on the office side are located the ticket counters. Fare boxes and transfers for each conductor are arranged together in pigeonholed racks directly behind the clerks, convenient for passing out through the wicket. Two such wickets and racks are in use.

To the north of the glass partition is the men's room, a corner of which is shown in fig. 3. It is a spacious room, arranged with the creature comforts of the men in mind. The two rooms to the north contain lavatory facilities of the most modern type. One feature of particular interest in the men's room is the manner of displaying the routing cards as indicated in fig. 3, where the weekday, Saturday and holiday running schedules are posted for the four regular and the night car runs. As will be noticed, the cards are large and well spread out to avoid crowding on the part of the motormen taking down their schedule. To facilitate this latter operation, the front of the schedule frames has a ledge projection to form a desk for writing purposes. This is a most useful feature.

COMPRESSOR ROOM.

The compressor room to the north of the rooms just described, is at present equipped with but one compressor unit, a Reavell compressor direct-connected to a motor, as shown in fig. 4 and operating at a speed of 250 r.p.m., with an air displacement of 186 cu. ft. per minute. A similar air unit is at present being installed.

The air storage consists of four long steel drums of relatively small diameter, stacked in a pile along the south wall. The three upper ones carry the high pressure, or 315 lbs. per sq. in., and have a total capacity of 332 cu. ft., while the lower one with a capacity of 80 cu. ft., carries a 40 lb. pressure.

Air is supplied to the cars from a connection between each of the front doors, two on the street outside the barn, and two at the corner of Bloor St. and Lansdowne Ave., a couple of blocks away, where the Bloor car supply is replenished. The air is also used for car cleaning.

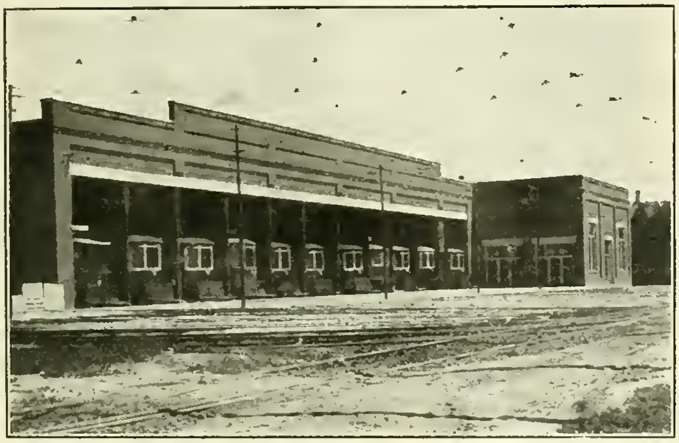


Fig. 2.—Paton Road Frontage on the Lansdowne Ave. Car Shed.

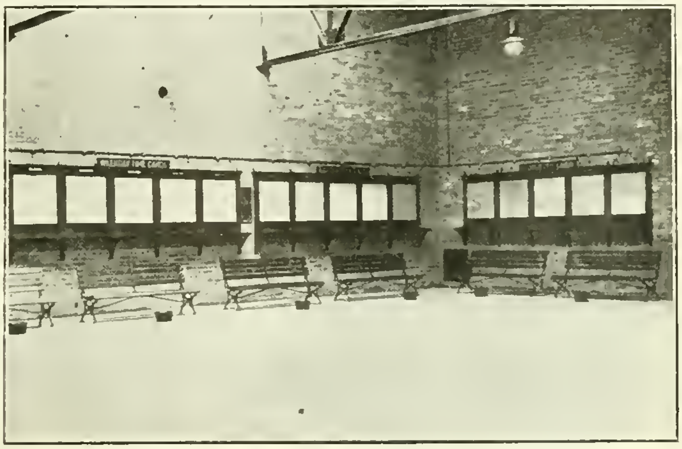


Fig. 3.—Men's Room, with Desk-front Routing Cards.

BOILER ROOM.

The boiler room, located directly north of the compressor room, in a fireproof division with incombustible ceilings and fitted with firehose, contains the complete heating system of the plant. The total volume of air within the main part of the car shed is 2,500,000 cu. ft., and it was the aim of the designers to maintain a temperature of 65 degrees F., with an outside temperature of zero. This point appears to have been attained to the satisfaction of those in charge.

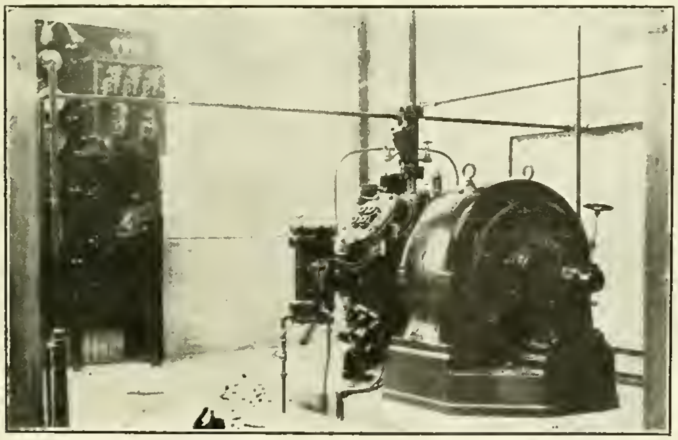


Fig. 4.—Direct-connected Compressor with Switchboard.

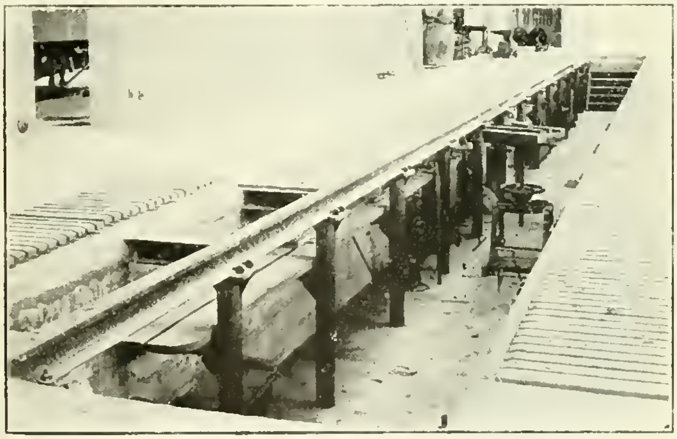


Fig. 5.—A Repair Pit showing Workmen's Platforms.

The heat generators consist of two 72 in. by 18 ft. return tubular boilers, each containing 72-4 in. tubes. A short steel stack is all that is required, forced draft being used. A 6 by 4 by 7 in. brass-fitted hot-water pump with receiver tank complete on one base, returns all the water of condensation to the boiler. It is also arranged with the necessary by-passes to pump water directly to the boiler from the city mains when necessary. Special care has been taken to eliminate all traces of oil from the condensed water by means of unusually large area oil separators.

The heating of the shed is effected by what is known as the plenum or blast system through tunnels constructed under the floor to all parts of the building as will be described later, in the description of the main car shed. The main equipment consists of two vertical pipe heaters, located over the boiler, each containing 10,000 ft. of 1 in. pipe, tested after installation to 100 lbs. cold water pressure. Two 120 in. bottom horizontal multivane exhaust fans with a capacity of 78,000 cu. ft. of free air at 200 r.p.m., direct-connected to two 8 by 7 in. McEwan fly-wheel governor engines, draw the air up a shaft from the pit in the main shed, through the heating coils, and discharge it through the ducts mentioned.

The induced draft for the boilers is obtained from a 100-in multivane top discharge exhaust fan with a capacity of 32,000 cu. ft. at 200 r.p.m., direct-connected to a 8 by 7 in. McEwan engine running under control of a reducing valve on the main steam header. It is so arranged that when the steam in the main drops below a specifid pressure, the engine automatically speeds up until the increased draft causes the pressure to rise to its normal position again, when the draft fan again drops to its normal speed. All this equipment is located over the boilers. Bowser oil tanks are used for storing the engine and cylinder oils.

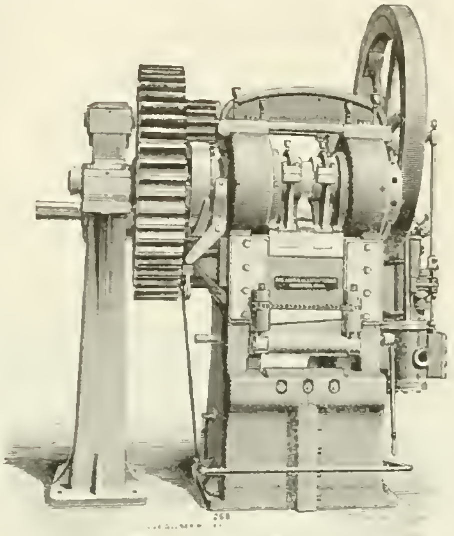
REPAIR PIT ROOM.

The repair shop, 140 by 50 ft., contains two repair pits, as shown in figs. 5 and 6. These pits are of a special construction, as fig. 5, a view of the westerly pit indicates. The rails are carried on the top of cast-iron bracketed posts, so that the walls may be set back from the rails, leaving a clear space. On the brackets which project outwardly from the centre of the track, a platform is placed about 18 ins., below rail top. This facilitates repair work for the mechanic. When not in use, the open space above the platform is protected by a wooden grilling, made in sections for easy removal. The construction of the platform is more clearly shown in the pit illustration, fig. 6. A convenient pit truck is also illustrated in fig. 5.

The pit nearer the Lansdowne Ave. side, contains a flat-wheel grinding attachment, as indicated in fig. 9. This is a standard attachment and need not be described. The driving motor is set back into a recess in the front wall for the sake of convenience. The jackshaft for driving the grinding wheels, is so arranged as to be easily removed when not in use, leaving a clear, unhampered pit. The removable sections of rail immediately over the grinding wheels, are so disposed as to be easily taken out and replaced.

MAIN SHED.

The main shed is a structure 304 by 154 ft., and containing 11 tracks, 10 of which are over the large pit covering the greater portion of the area of the shed. This pit is 200 by 133 ft. and forms an immense room under the shed floor as indicated in fig. 7, which is a photograph taken under the shed floor.



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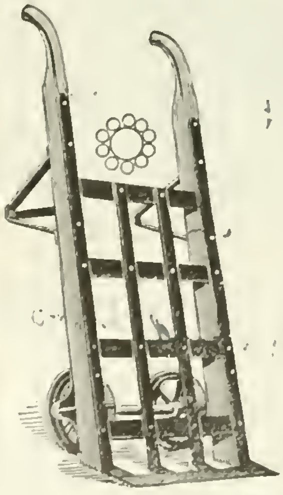

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This pit is 4 ft. 11 ins. deep at the middle and 4 ft. 8 ins. at the ends, providing a small drainage slope.

The roof structure is supported at frequent intervals, as shown in fig. 1, by wooden posts, the main features of which are indicated in fig. 8. The post caps are designed and constructed to give an equivalent wood bearing value for end thrust and side compression for the post and roof members respectively. The design of foundation cap is particularly good. The cap is cupped both top and bottom to receive post and foundation. The foundation abutment being built of concrete, tends to chip at the top, but by this construction, it is constrained from so doing by the retaining cap. Cupping both faces of the cap also gives the post a permanent location.

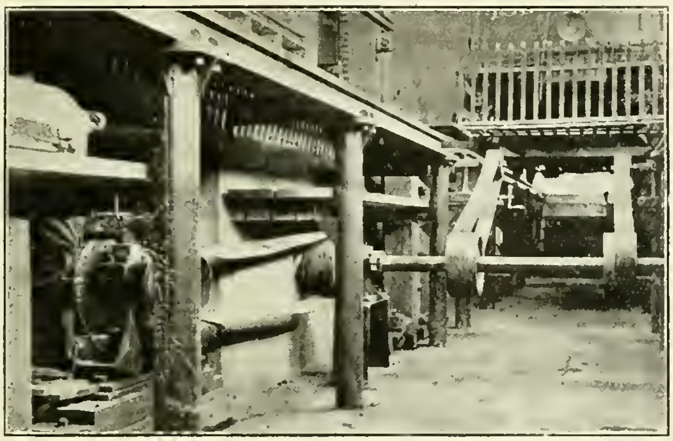

Fig. 6.—Repair Pit fitted with Flat-wheel Grinder.

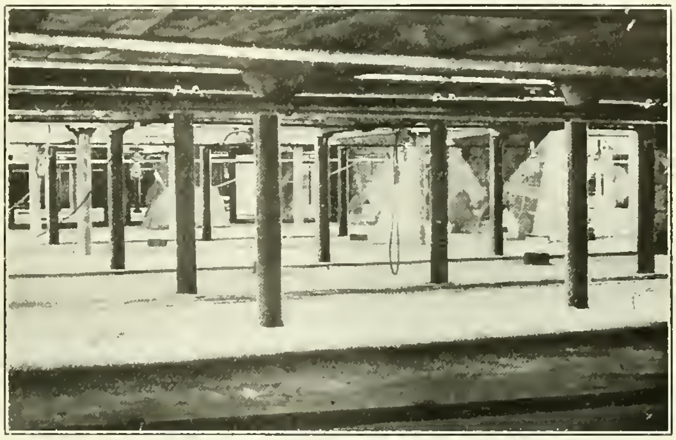

Fig. 7.—Under Shed Floor, showing Pit Construction.

Among the special features of design is that of the door posts, a section of one of which is given in fig. 9. The curved section faces outward to receive any impact from striking cars. The design is such that the post is so reinforced that a collapse under a side impact is practically impossible. Fig 8 also shows how the end posts next to the side walls are retained in position. The end posts are made in half-sections, and are held up against the brick wall of the building by the dotted straps shown, which is built into the wall structure.

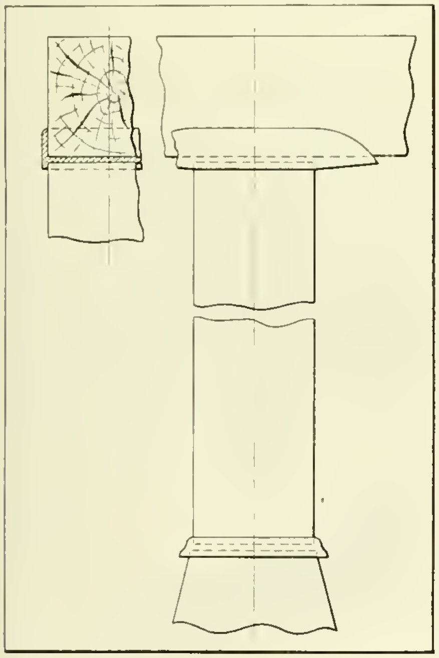

Fig. 8.—Roof Post, showing Cap and Base Construction.

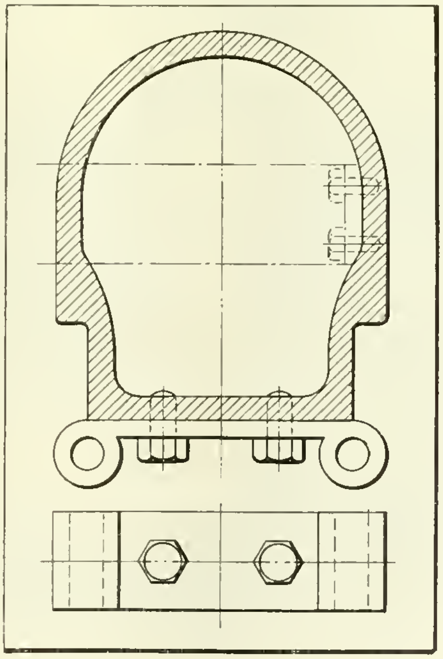

Fig. 9—Door Post of Reinforced Construction

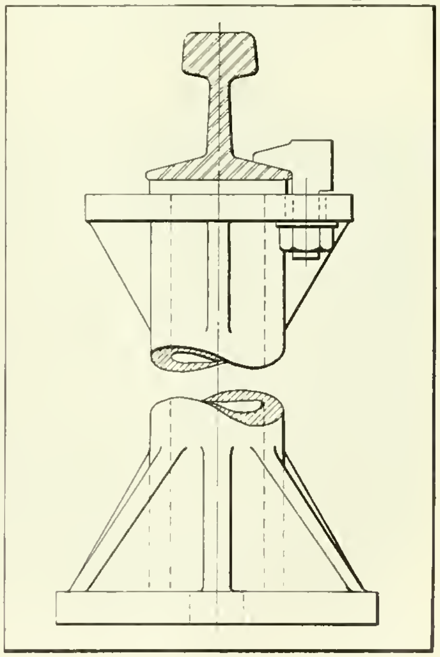

Fig. 10.—Underfloor Post Contruction in Pit.

The pit construction is decidedly unique, as an inspection of figs. 1 and 7 will show. In the former illustration, the pit is shown dotted under the floor of the main car shed. The whole underfloor space is open except for concrete arches to be seen in the background in fig. 7, and which are located every 30 ft. through the length of the pit. These arches are in width equal to the distance between the outside rails of adjoining tracks, so that the space between the rails through the full length of the pit is open. Between arches are four cast iron posts of a construction indicated in fig. 10. This illustration shows the method adopted for bolting down the rail, a special type of bolt being used.

Near the northerly end of the pit, the devil-strip between all the tracks over the pit is depressed, as indicated in fig. 11, in order to facilitate inspection and light repairs on the cars in the barns. This depression is of just sufficient length to accommodate the newer type of cars being built by the company.

Figs. 7 and 11 show the provision for lighting in the pit. Between each arch, under every track, three protected hand lamps, with cable of convenient length, are provided.

The devil strip over the pit is constructed throughout of reinforced concrete. Adjoining rails are tied together, making ties between the individual rails of a track unnecessary.

Various minor features for facilitating work have been introduced at different points in the shed. For example, fig 12, illustrates the idea devised for facilitating the carman's work of placing the route signs on the car. An elevated stand secured to the roof posts is used. This illustration at the same time shows the roof construction of the building.

Another feature worthy of notice is the car starter's sign racks, shown in fig. 3. Here all the car numbers, routing signs and destination cards are kept in a convenient location near the office door. To the right of the point in the illustration, on the office wall, the car starter has his routing board, on which the conductor's number, car and track on which car is located, are previously scheduled, so that no confusion exists when all the cars start out as they do, in quick succession.

The heating system employs concrete passages moulded to shape, with 6 in. walls. From under the boiler room floor a duct 6 ft. 5 ins. by 4 ft. leads right across to the underside of the pit floor, tapering down to an opening 5 ft. 8 ins. by 4 ft., where it opens into two

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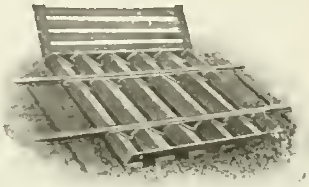

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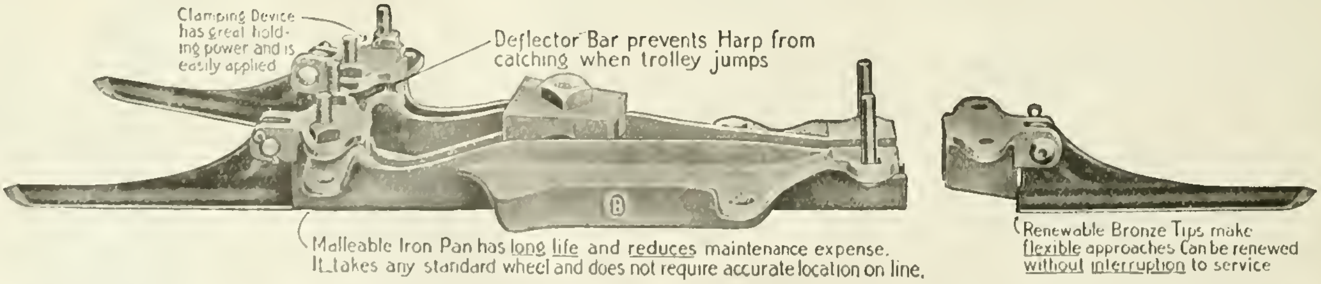
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parallel passages, the two forming the same size passage. These two parallel passages run directly across the building tapering to small size at the far side. Under each devil strip under the pit floor, lengthwise passages branch out from the two main ducts. Each of these lengthwise passages has two openings into the pit between each concrete arch. These openings are through special cast iron grids of a form shown on the pit floor in figs 7 and 11. The heat rising from these grids, strikes the underside of the devil-strip and is deflected each way up into the running-gear of the car where the heat is most required. A perfect system of heating is thus obtained, the means of heating being at the same time so located as not to inconvenience the workmen. The heating is only accomplished in the pit. The heating of office and rooms is independent.

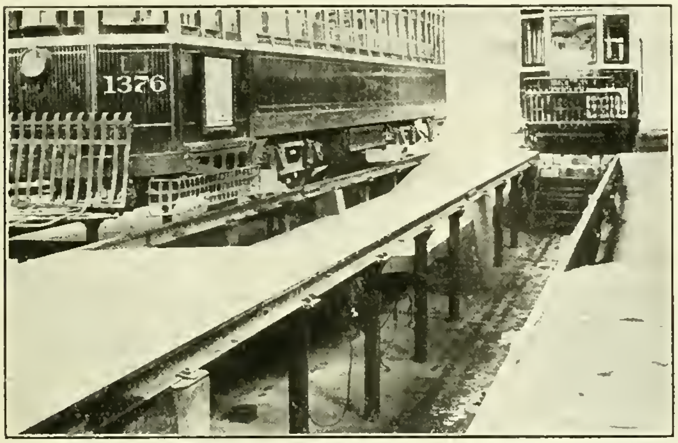

Fig. 11.—Depressed Devil-strip for Side Inspection of Trucks.

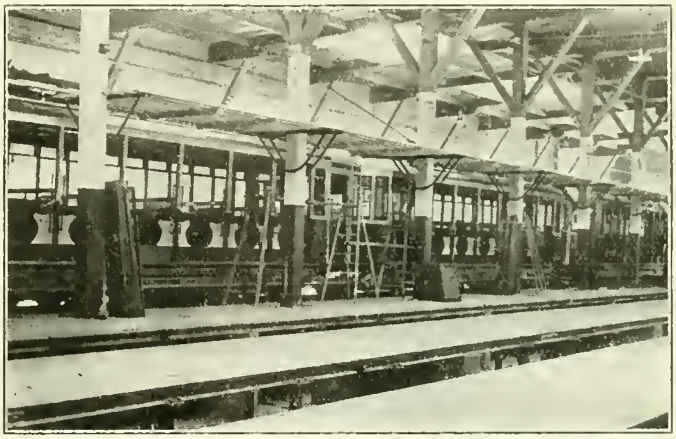

Fig. 12.—Stands for Placing Signs on Cars.

OUTER SHED.

The original intention of the designers was to leave open the 131 ft. to the north of the main shed. It was finally decided, however, that it would be preferable to cover, and thereby increase the capacity of the barn, a course that was followed, the framework being steel throughout as indicated by fig 14. Comparing figs. 12 and 14, it will be observed that the construction of the two parts is quite different.

An interesting operating feature is also shown in fig. 14, which is a view from the rear entrance on Lansdowne Ave. Each track is numbered over the entrance to the main shed. The cars as they enter from the rear are scheduled on to a certain track. To facilitate locating the switch belonging to the proper track—a confusing detail where there are so many switches—each of the switches corresponding to the track, is numbered at the turnout, as shown in the illustration. Much time and confusion is thereby avoided.

CAPACITY.

The main shed has a capacity of 100 large cars or about 150 small cars on its 11 tracks. Counting the 6 tracks in the yard to the west, and the trackage in the outer shed, about 200 cars of all sizes can be accommodated, which is the number at present reporting there.

The Calgary Municipal St. Ry. added four cars to its rolling stock during Sept., making 30 in all. Out of the money to be raised under a bylaw to be shortly voted upon, it has been arranged to purchase 20 more cars, some 41 and others 46 ft. long.

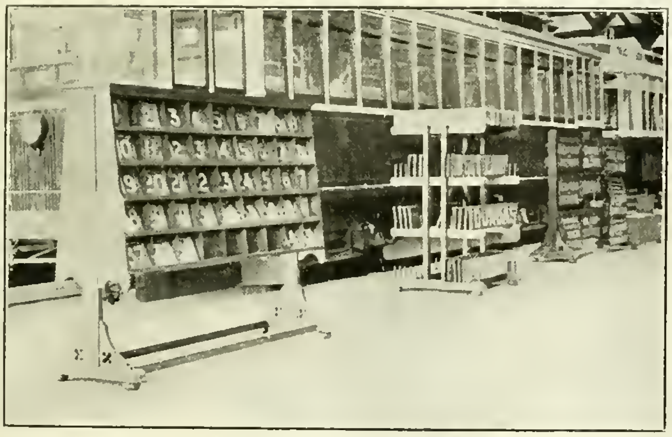

Fig. 13.—Car Starter's Racks for Routing Signs.

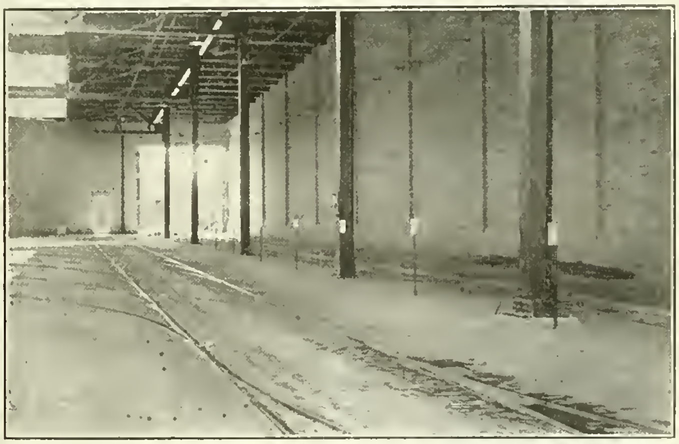

Fig. 14.—Outer Shed, showing Numbered Switches.

The Use of Tee Rails in Street Railway Construction.

By F. G. Simmons.

(CONTINUED FROM SEPTEMBER ISSUE).

The numerous references and quotations cited show conclusively that the use of tee rail in the permanent paving of city streets is not an experiment, although its use has been given many setbacks through the selection of improper material and improper methods of installing the paving where tee rail tracks are laid. Therefore, in concluding this paper the author wishes to give his ideas as to the proper construction of tracks in city streets, the proper paving to be laid in connection with these tracks and the proper method of laying such paving.

To begin with tee rail of proper section should be selected, this being admittedly the most nearly perfect mechanical type.

The track should be so laid that while not absolutely rigid it yet permits only a very minor deflection, scarcely more than vibration.

The paving should not be of the sheet variety for the most obvious reasons (previously quoted), and it should be laid with extreme care as to every detail.

The author's specification for an ideal construction follow:

Sub-grade in trench prepared by thorough rolling and checking, an 8-ton roller to be employed.

Installation of a tile in the centre between double tracks about 8 inches below base of tie, same to be connected with sewers at about 100-foot intervals.

Wood ties to be chemically treated with some adequate preservative; to have not less than a 6-in. face and to be laid with not to exceed 16 in. open space between ties.

Rails to be of the 7-in. Shanghai tee rail type, not under 90 lbs. per yard in weight, 60 to 66-ft. lengths and preferably of open hearth steel.

Joints to be cast welded in a thorough and workmanlike manner.

Track to be ballasted on at least 6 ins. of Portland cement concrete, mixture no leaner than 1-2½-5 and to be well tamped to place. Concrete to be continued up to the proper level for the installation of the paving.

Paving to be as follows:

On streets where commercial vehicular traffic is very heavy, granite stone paving.

Where the traffic is still commercial but not so heavy, either sandstone or vitrified brick.

On residence streets vitrified brick or creosoted block. As previously stated there is sufficient field for sheet asphalt on boulevards and other streets, either residence or retail business, where street railway tracks do not exist.

The sand cushion on which the paving is placed should be in no place less than 1 in. in thickness and should be well compacted before the paving is set. The blocks or bricks at the gauge line of the rail should be depressed and projected under the head of the rail crowning up within 17 ins. to a level with the

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THE LESSON

taught by this widespread use of Pay-As-You-Enter Cars is obvious. Increased Revenue, Accident Elimination and Schedule Improvement have been demonstrated in every case. Isn't all this sufficient to show that it always pays to operate the Pay-As-You-Enter Car? Why not remodel some of your present cars?

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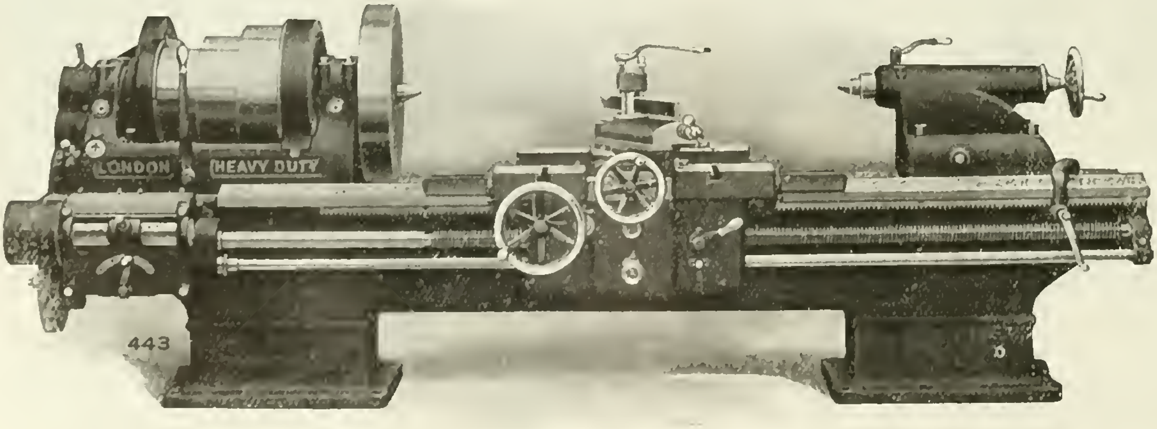

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top of the rail and then extending practically level until within 17 ins. of the other gauge line. The outside stem of the rail should be properly filled with a creosoted strip or cement blocks, and the entire pavement filled with a one-to-one cement grout very carefully applied and allowed to thoroughly set before any traffic is permitted.

The author believes that while some objection may be found to various of the details in this construction that it embodies a method which most nearly equalizes the requirements of the city and the company and produces a result giving the maximum of wear with the minimum of obstruction.

The author will be pleased to go into this matter further with anyone who is actively interested and will endeavor to elucidate to the best of his ability any of the details that have not been thoroughly explained.

Electric Railway Notes.

The Ottawa Electric Ry. is the fifth largest taxpayer in Ottawa.

The ratepayers of Kildonan, Man., will vote Oct. 7, on a bylaw permitting the operating of street cars in the municipality.

The Regina, Sask., Municipal Ry., has in operation on its lines, four single truck and two double truck pay-as-you-enter cars.

F. H. Deacon, Toronto, has been elected a director of the Duluth-Superior Traction Co., Duluth, Minn., in succession to R. Forget, Montreal, resigned.

The operation of the Regina, Sask., Municipal Ry. is in charge of H. Doughty, as Superintendent, with E. W. Bull as Superintendent of the power plant.

The Edmonton Radial Ry. has received two 30½ ft. pay-as-you-enter car bodies, 43½ft. long over all, mounted on 27-G-1 trucks, from the Ottawa Car Co., Ottawa, Ont.

The Montreal City Council has notified the Incline Ry. that unless it is prepared to enter into a contract with the city, the line must be removed from Mount Royal Park.

The Board of Railway Commissioners has extended to Nov. 1 the time for equipping the Hull Electric Ry. cars with power brakes as required by the Board's general order.

The Pay-as-you-Enter Car Corporation is reported to have sold its European patents, in connection with which the International Pay-as-you-Enter Car Co. is to be organized in Great Britain.

The Quebec Public Utilities Commission, in the application of the Shawinigan Water & Power Co., and with the approval of the Shawinigan Falls Terminal Ry. Co., has authorized a crossing of the railway and a diversion of a roadway.

The Niagara, St. Catharines and Toronto Ry. had to cease operations for several hours, Aug. 27. The cable carrying power, which is laid across the Welland canal at Thorold, Ont., was broken by an anchor thrown out to stop a vessel which had broken away from her moorings.

The St. Thomas, Ont., Electric Ry. and the London and Lake Erie Ry. and Transportation Co. have some differences over right of way for their cars. The city owns the line, and has leased a right of way for the L. and L.E. Ry. and T. Co.'s cars through the city. The difficulty arises when the city cars and the through cars between London and Port Stanley arrive at a crossing point together.

A. C. Lytle, formerly General Superintendent and Freight and Passenger Agent, Orford Mountain Ry., and since the absorption of that railway by the C.P.R., Assistant Trainmaster, District 1, Eastern Division, C.P.R., at Farnham, Que., has been appointed Assistant Superintendent of Construction, Montreal St. Ry.

G. H. Bentson, Secretary-Treasurer London St. Ry. Co., died in the Victoria Hospital, London, Ont., Sept. 9, of acute liver trouble, after having only been in the hospital two days.. He was born at Toledo, Ohio, Aug. 26, 1879, was in the service of the Toledo Traction Co., and afterwards with the Toledo Railway and Light Co. as cashier. In 1895 he was appointed Secretary-Treasurer, London St. Ry. Co.

Wilford Phillips, whose portrait appears on this page, was born in Prince Edward County, Ont., Oct. 8, 1858, and commenced electric railway work on the Metropolitan Ry., North Toronto, now the Metropolitan Division, Toronto and York Radial Ry., in March, 1890, in which service he remained until July, 1802, since when he was, to March, 1893, Engineer and Superintendent, North Toronto Water Works and Electric Light; March, 1893, to 1896, Mechanical and Electrical Engineer, Niagara Falls Park and River Ry.; 1896 to June, 1900, Manager same company. In August, 1900, he was appointed Manager, Winnipeg Electric Ry., which position he now holds.

Wilford Phillips,
Manager, Winnipeg Electric Railway,

A Winnipeg dispatch, Sept. 24, says: "Following a conference between Sir Wm. Mackenzie and the special committee of the city council for the purpose of discussing certain details demanded by the solicitors before drafting the agreement, the arranging of a basis of audit and ultimate purchase of the Winnipeg Electric Railway has been agreed upon. General satisfaction is expressed by both parties interested. The proposed purchase involves the payment of some $24,000,000 for all the Mackenzie & Mann interests in Winnipeg pertaining to the electric railway, light, power and gas plants. The agreement cannot become law, until the ratepayers vote favorably.

The B.C. Electric Ry. put in effect, Sept. 1, a general reduction of passenger rates over the interurban lines connecting Vancouver and New Westminster, except as to the Burnaby interurban line, which is operated under a Dominion railway charter, and the revised rate on which will go into effect as soon as the permission of the Board of Railway Commissioners can be obtained. The new rate from Vancouver to New Westminster is 25c. single fare and 50c. round trip. Proportionate reductions are made covering all points on the lines where interurban rates prevail. The company has also recently put in force a reduced freight tariff covering its South Fraser Valley extension, which covers the 76 mile stretch between Vancouver and Chilliwack, and connects the rich agricultural district lying on the south side of the Fraser River with the B.C. coast cities.

Electric Railway Finance Meetings, Etc.

British Columbia Electric Ry.—Gross earnings for July, $409,330; working expenses, $258,265; net operating earnings, $151,065 renewal funds, $38,012; net earnings, $113,053; approximate income from investments, $25,000; net income, $133,053, against $283,535 gross earnings; $173,850 working expenses; $109,685 net operating earnings; $23,820 renewal funds; $85,865 net earnings; $22,000 approximate income from investments; $107,865 net income for July 1910.

The Cape Breton Electric Co. has been authorized by the Nova Scotia Legislature to guarantee the payment of the principal and interest on bonds or other securities of any corporation, the majority of the capital stock of which is held or controlled by the company.

Calgary Municipal Street Ry.—Passenger earnings for July, $38,301.90; miscellaneous earnings, $845.85, making altogether, $39,147.75 against $23,474.15 for July, 1910. Operating expenses, $15,187.22, against $9,443.56 in July, 1910. After providing $5,263.33 for interest and sinking fund charges, and setting aside 5% of the gross revenue for sinking fund there remains a net profit for the month of $16,739.82 against $10,141 for July, 1910.

Edmonton Radial Ry.—Gross rereipts for Aug., $26,848.86, against $17,062 for Aug., 1910. Passengers carried, 643,005, against 389,631, in Aug. 1910.

Halifax Electric Tramway.—Receipts for Aug., $25,594.16, and for three weeks ended Sept. 21, $18,690.11, against $22,781,86 and $14,365.54 for same periods, 1910.

Montreal St. Ry.—Passenger earnings for Aug. $426,252.67; miscellaneous earnings, $16,855.31; total earnings, $443,107.98; operating expenses, $232,529.56; net earnings, $210,578.42; city percentage on earnings, $52,562.98; interest on bonds and loans, $15,463.55; rental leased lines, $607.10; taxes, $5,000; total charges $73,633.63; surplus, 136,944.79; expenses per cent. of earnings, 52.48, against $382,817.76 passenger earnings; $16,010.81 miscellaneous earnings; $398,828.57 total earnings; $216,314.19 operating expenses; $182,514.38 net earnings; $46,707.72 city percentage on earnings; $14,482.71 interest on bonds and loans; $552.90 rental leased lines; $4,000 taxes; $65,743.33 total charges; $116,771.05 surplus; 54.24 expenses per cent. of earnings, for Aug. 1910. Aggregate total earnings for 11 months ended Aug. 31, $4,319,819.20; operating expenses $2,478,724.76; net earnings $1,841,094.44; total charges $549,606.62; surplus, $1,291,487.82; expenses per cent. of earnings, 57.38, against $3,889,475.05 aggregate total earnings; $2,237,830.24 operating expenses, $1,651644.81 net earnings;

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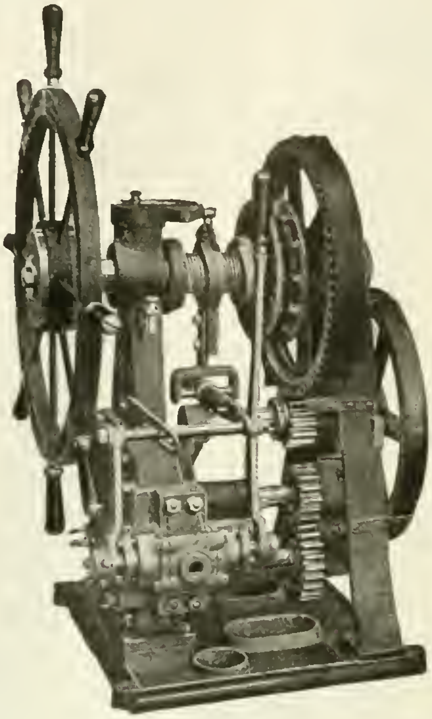

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$485,289.82 total charges; $1,166,354.99 surplus; 57.54 expenses per cent. of earnings for same period 1909-10.

A meeting of the shareholders has been called for Oct. 5, to ratify the acquisition of the Montreal Park and Island Ry. and Montreal Terminal Ry., and the contract transferring these properties and the property of the M.S.R. to the Montreal Tramways Co., the title of the new company. In connection with this meetings of the shareholders of the Montreal Park and Island Ry., and Montreal Street Ry. were called for Sept. 28, when the Tramways Co. released each of the two companies of their indebtedness, covenanted to pay all debts and liabilities, and to indemnify each of the companies against all loss or damage arising in respect thereof. The Board of Railway Commissioners is being asked to ratify the amalgamation of the several companies.

Quebec Ry., Light, Heat and Power Co.—The annual meeting, which was to have been held Sept. 12, was postponed on account of the general election, in which the President, R. Forget, was engaged.

The Regina Municipal Ry. started regular operation, July 29. The receipts for August, including July 29 and 30, were $7,718.50; operating expenses, $3,328.48; net earnings, $4,390.02. Car mileage, 12,815 miles; gross earnings per car mile, 60.23 cents; operating expenses, 25.97 cents; net earnings, 34.26 cents; passengers carried, 151,104.

The Sherbrooke Ry. and Power Co.'s capital is $1,500,000 stock and $1,500,000 of bonds, and there have been issued $1,000,000 of each. The last $1,500,000 of each issued being to provide for the purchase of the Stanstead Electric Light Co., and the Eastern Tonwships Light and Power Co.

The gross earnings for the three months ended July 31, were $12,960.46 against $9,578.05 for the corresponding months in 1910. Only the lines taken over from the old company were being operated during that period, the extensions not being operated over until the end of July.

Toronto Ry.—Gross earnings for Aug. $421,973.75, expenses $210,962.33, net earnings $210,991.42; against $380,934 gross earnings, $195,883.22 expenses, $185,050.78 net earnings for Aug., 1910. Aggregate gross earning for eight months ended Aug. 31 $3,052,968.07, expenses $1,551,378.12, net earnings $1,501,589.95; against $2,767,357.94 aggregate gross earnings, $1,433,380.71 expenses, $1,333,977.23 net earnings for same period 1910.

For the 12 months ended Aug. 31, the company paid the city $751,870.38, made up of $668,730.38 percentage on earnings, and $83,140 mileage rent. The amount paid to the city for the previous year was $661,399.58. During the past year 101,788,323 tickets were sold realizing $3,873,710, and $753,221.45 was taken in cash fares. The total receipts were $4,643,651.94, an increase of $451,636.65 over the previous year. The directors have declared a quarterly dividend of 2%.

Winnipeg Electric Ry.—Gross earnings for July, $322,751; expenses $152,108; net earnings, $170,643, against $252,014 gross earnings; $119,754 working expenses; $132,260 net earnings for for seven months ended July 31, $2,204,- July 1910. Aggregate gross earnings 357; net earnings $1,096,193, against $1,784,210 aggregate gross earnings and $887,140 net earnings for same period 1910.

Mayor Evans is reported as stating Sept. 14, that while some delay has been experienced in connection with the negotiations for the purchase of the company's lines by the city, it was hoped that with an independent audit sufficient information will have been compiled, so that the purchase by the city may be carried out to the advantage of all concerned.

◆

Electric Railway Projects, Contruction, Betterments, Etc.

Alberta Electric Ry.—Press reports state that application is to be made to the Dominion Parliament to change the name of the company to the Alberta Interurban Ry. The report further states most arrangements are being made for the building of about 30 miles of line from Calgary eastward, in the direction of Bassano, and that the route will be on the main highways for the greater part of the distance, and adds that individual unit cars, fitted with internal combustion engines will be used. May, pg. 453.)

Berlin and Waterloo St. Ry.—It is reported that an addition will be built to the car house, in which a hydraulic motor lift will be installed. (Jan., 1910, pg. 57.)

Brandon, Man.—Considerable work has been done in the way of building an electric railway on Ninth St., by the city council, and the work is being pushed forward rapidly. (Aug., pg. 783.)

British Columbia Electric Ry.—A start was made, Sept. 7, upon the building of a second track on the Vancouver and Lulu Island Ry., and tenders are being asked for the grading between King Edward Ave. and Eburne, four miles. Heavy steel is to be laid on the new track, and the steel rails on the present track are to be replaced with rails of corresponding weight. The Burnaby municipal council decided, Sept. 11, to consider the question of taking legal proceedings with the view of having the validity of the company's franchise tested.

A contract has been let to C. C. Moore & Co., Seattle, for the extension of the auxiliary steam power plant at Main and Branard Streets, at an approximate cost of $250,000. The equipment covered includes four Babcock and Wilcox boilers, each of 500 h.p., which will operate a 2,000 k.w. Allis-Chalmers turbo-generator. The contract also covers condensers, piping, etc., necessary for the operation of the new unit. A special feature of the work is the erection of a reinforced concrete stack 256 ft. high, similar in detail to the stack of the same height which was built for the company's steam auxiliary plant a few years ago. The additional equipment will increase the available power from the steam auxiliary plant to 12,000 horse power.

The company has also called for tenders for a large car barn at Queen's Ave. and 12th St., New Westminster, nearly opposite the company's shops. The plans call for alternate bids on reinforced concrete or wood frame with galvanized iron covering. The barn is to be 240 by 104 ft. and will consist of two units each having four tracks. Provision is made for pit tracks, workshops, etc., in connection with the project, the plans covering the demands for an up-to-date car barn in every particular. The work will be rushed to completion as soon as the contract is awarded.

The new interurban station and office building at New Westminster was opened Sept. 5. The building is two stories high, of brick construction, the lower floor being used for passenger and freight traffic and the upper for the company's offices. From the station are operated the Westminster city lines, interurban lines connecting New Westminster with Vancouver over the three routes of the company between the cities, and Fraser Valley branch running through the South Fraser Valley to Chilliwack

A contract for grading 18 miles of a new interurban line on Vancouver Island running north from Victoria, has been awarded to Moore & Pethick, who have been doing work for the company in connection with the Jordan River power plant. They will start work at once and are to complete the work within a year. The Saanich extension will be 22 miles in length, connecting Victoria with Deep Bay on the west shore of the Saanich peninsula near its northern point. The estimated cost of the line complete is from $600,000 to $750,000. It will open up a large area of land which is ripe for settlement and development, but which has previously been sparsely setled owing to inadequate transportation facilities. Considerable preliminary clearing work has already been done on the right of way by the company. From the northern terminus of the line it is probable a ferry will be operated connecting fertile islands on the Gulf with the mainland. (Sept., pg. 877.)

Calgary Municipal Street Ry.—A bylaw is being prepared for submission to the ratepayers for the purpose of raising $400,000 to met the cost of second track work on certain streets, extensions of lines, and general improvements. It was expected to have added 25 miles of track to the system by Sept. 30, bringing the total length of lines built to 40 miles, of which 10 miles are double track. (Sept., pg. 877.)

The Chilliwack Tramway Co. is reported to have been formed with a capital of $25,000 to build an electric railway within the limits of the city of Chilliwack, B.C. The company is formed under the provisions of the general Railway Act passed last session, but it does not appear to have been formally registered.

Coteau Power Co.—Press reports from British Columbia, Sept. 15, state Sir Wm. Mackenzie, Sir Donald Mann and associates have purchased the Coteau Power Co.'s rights and interests. The company was formed by W. C. Ricards, G. A. Henderson and others interested in the development of the Okanagan Valley, with a view to providing electric power for industrial, lighting and heating purposes, and to build a system of electric railways throughout the valley. M. Neilson, Montreal, recently made an examination of the route covered by the company's powers and is said to have made a favorable report thereon. J. E. Rothery, manager of the Toronto Eastern Ry., a Mackenzie-Mann project, was also in B.C. recently, and probably also looked into the C.P. Co.'s scheme. The route of the line as projected will be from Shuswap Falls, through the White Valley, and Coldstream, linking up the various Okanagan Valley towns, and reaching out to Enderby on the north and Kelowna on the south. (June, pg. 555.)

Dartmouth and Cow Bay Electric Ry.—The line which this company is authorized by the Nova Scotia Legislature to build is to extend from Dartmouth to Cow Bay Beach in Halifax county, and it may be built "along, alongside of or across the public highways." The provisional directors are: R. Stanford, I. W. Vidah and A. Pyke, Dartmouth, N.S. (June, pg. 555.)

Dunnville, Wellandport and Beamsville Electric Ry.—It is reported that about $100,000 of the capital stock has been subscribed for, and that about $15,000 has been paid in. Bonds for $40,000 are understood to have been issued, and municipal bonuses amounting

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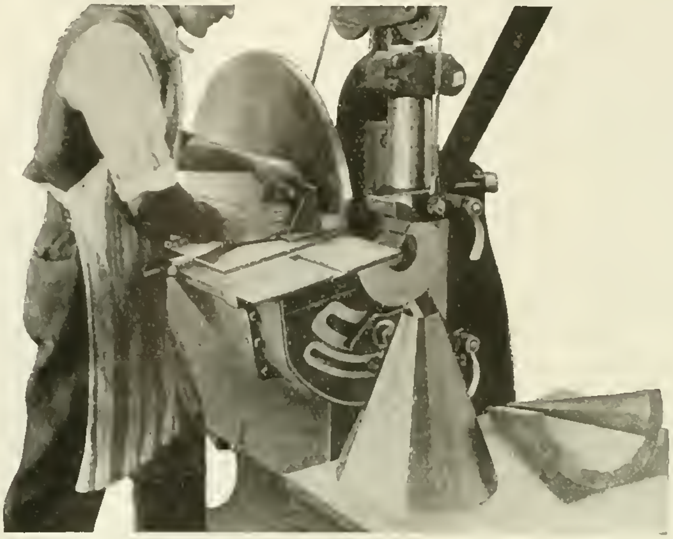

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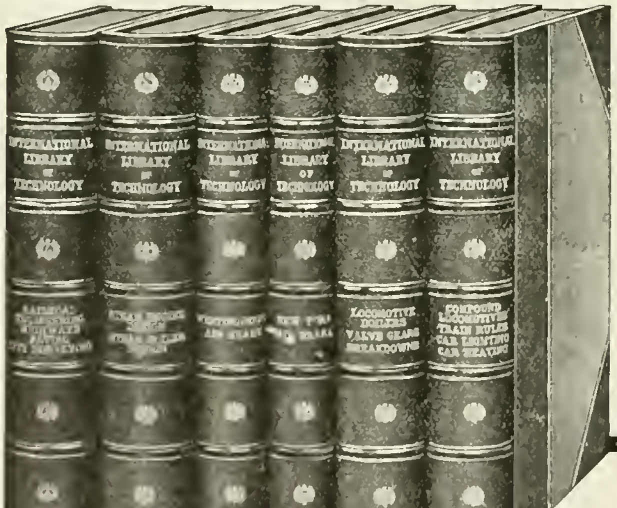

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to $20,000 are said to have been paid in. The company has some real estate, and has expended a considerable sum on grading, bridges, plant, etc. For some time past construction has been at a standstill. (Aug., pg. 783.)

Lake Erie and Northern Ry.—The Brantford, Ont., city council, Sept. 12, directed the preparation of a bylaw for submission to the ratepayers authorizing the guarantee of the company's bonds to the extent of $300,000. The town of Simcoe and the village of Port Dover are being asked to guarantee an additional $50,000 of bonds each, and it is proposed to issue $900,000 of bonds or at the rate of $30,000 a mile for the 30 miles of line proposed to be built between Brantford and Port Dover. The estimated cost of construction is $40,000 a mile.

We are advised that it is intended that the line shall be built entirely over a private right of way, and that all the surveys made have been across country, running via Mount Pleasant, Boston, Waterford and Simcoe, a distance of 32 miles, which it is expected to shorten by two miles on revision. It is proposed to start construction this fall, or early next spring.

The officers and directors are: President, J. Muir, Vice President, J. Sanderson, Secretary-Treasurer, W. S. Brewster Chief Engineer, W. P. Kellett; other directors, R. E. Ryerson, D. W. Schultz, all of Brantford, Ont. (Sept., pg. 879.)

Moncton Tramways, Electricity and Gas Co.—We are advised that owing to the misunderstanding of a cablegram, at Moncton, the information given in our last issue that steel rails had been ordered in the United States, was incorrect. Grooved girder rails, 84 lbs. to the yard, for two miles of track have been ordered in Great Britain. Track work has been proceeded with and about a mile of roadway has been opened and is ready for the rails. It is the company's intention to lay two miles of track and have it in operation in the fall. (Sept., pg. 879.)

Montreal Street Ry.—In connection with the opening of the Canadian Light and Power Co.'s new plant, at St. Timothee, Que., Aug. 31, E. A. Robert, President of both companies, stated that the street railway problems would be solved within a short time, and that the various lines would be extended, one of the extensions being to Beauharnois. (Sept., pg. 879.)

Nanaimo, B.C.—Notice has been given that a bylaw providing for the granting of a franchise for an electric railway in the city, will be introduced at an early meeting of the city council. (Sept., pg. 879.)

Nipissing Central Ry.—The Mayor of Liskeard, Ont., received a leter from J. L. Englehart, President N.C.R., and Chairman of the Temiskaming and Northern Ontario Ry. Commission, Sept. 12, stating that engineers were in the field locating the proposed extension from Haileybury to Liskeard, Ont., and stating that construction would not be delayed any longer than could be helped.

Reports from Cobalt state that it is proposed to divert the line in North Cobalt, in order to avoid a section upon which expensive repairs have constantly to be made. The new route will be shorter and more convenient. (Sept., pg. 879.)

Ottawa Electric Ry.—Questions affecting the extension of lines in Ottawa were considered by the city council's street railway committee, Sept. 11, and the committee's report is now before the council. Superintendent J. E. Hutcheson, is reported as stating that nothing can be done as to the Ottawa South extension until after the completion of the Bank St. bridge by the city, which he expects will take about a year to build. (Sept., pg. 879.)

Ottawa, Smiths Falls and Kingston Ry.—Press reports state that it is proposed to operate this line, when constructed, with cars and trains which will generate power for themselves. Each car or locomotive will be equipped with a gasoline engine for the purpose of driving a dynamo for generating power. (Sept., pg. 879.)

Peoples Ry.—The Guelph, Ont., city council passed a resolution Sept. 5, notifying the company that if the line be not completed within three months, the agreement between the city and the company will be cancelled. The agreement which was ratified by the Ontario Legislature in 1910 provides for the construction of certain lines in the city, and extensions to various points, which are to be completed at specified times, the whole to be finished by June 30, 1913, and further that if the city or the Guelph Radial Ry. considers that substantial or satisfactory progress has not been made with construction, three months' notice may be given to terminate the agreement, but "no part of such three months shall extend beyond Dec. 1, or commence earlier than April 1, in any year.' (Aug., pg. 783.)

Regina Municipal Ry.—We are advised that two miles of the electric railway built by the city council have been in operation since Aug. 1, although traffic on a regular schedule was not started until Aug. 14. The construction program for the current year covers the building of six miles of track, and it is expected that this will be ready for operation early in Oct. A 7½ minute service is being given in the centre of the city, and a 15 minute service elsewhere.

The city council has let a contract to A. E. Downs for the erection of car barns at a cost of $22,975. The work is to be completed early in Oct. The main building will be 200 by 88 ft. and 24 ft. high. It will be of stone and reinforced concrete, with roof of steel truss construction, and will have four rows of desk lights running the entire length. There will be 10 pairs of windows in the west side of the building. Adjoining will be repair and machine shops and an office section.

A bylaw was given its third reading by the city council Sept. 6, authorizing the raising of $40,000 for street railway construction.

The construction work is being carried out under the direction of L. A. Thornton, city engineer. (Sept., pg. 879.)

Saskatoon, Sask.—The city council is preparing to start work on grading the streets on which it is proposed to lay the first sections of the projected electric railway. M. E. Evans, submitted plans showing the proposed routes to the city council on Aug. 28, and these have been approved of. (Aug. pg. 785.)

Toronto and York Radial Ry.—The new bridge over the Mimico Creek, on the Lake Shore division has been completed, and cars are being operated over the new double track line constructed on private right of way there. (July, pg. 685.)

Toronto Civic Lines.—The Toronto city council is asking for tenders for the building of certain subways with the view of ascertaining the probable cost of the same preparatory of submitting a bylaw to the ratepayers in Jan. It is proposed to abandon the projected Yonge St. subway, and to build one instead from Front St. along Bay, Terauley extended, St. Vincent, Chapel and North streets to Bloor, and northerly to Yonge St., at Birch Ave., and then along the surface level to St. Clair Ave., provided an arrangement can be made with the Metropolitan Ry. for the use of its tracks in exchange for the use of the city tracks between certain points. (Sept., pg. 879.)

Toronto Eastern Ry. — The Board of Railway Commissioners has authorized the line to be built across 11 highways in Pickering tp., between mileage 0.9 and 7.7; and to build across the Oshawa Electric Ry. at Simcoe St., Oshawa, Ot. (July, pg. 685.)

Winnipeg Electric Ry.—Tracklaying on the extension of the line on Marion St., Norwood, was expected to be started, Sept. 25. (Sept., pg. 847.)

American Electric Railway Associtaion.

As previously announced in these columns, the annual convention of this association and its affiliated associations will be held at Atlantic City, N.J. Oct. 9 to 13.

James Anderson, Manager, Sandwich, Windsor and Amherstburg Ry., Windsor, Ont., and President, Canadian Street Railway Association, has been appointed a member of the transportation committee in connection with the convention. The Eastern Canadian Passenger Association has made the following concessions in rates: Lowest one way first-class fare and one-half; from Kingston, Sharbot Lake, Renfrew and west, tickets will be sold on Oct. 5 to 9, inclusive; from east of Kingston, Sharbot Lake and Renfrew, tickets will be sold on Oct 6 to 10 inclusive; return limit to reach original starting point not later than Oct. 10. Tickets are to be validated by agent of terminal line at Atlantic City, N.J.

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No tender will be received for less than one-half mile sections.

Envelopes containing tenders must be plainly marked on the outside "Tenders for Proposed Subway Construction."

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2. Canadian Engineer, B-33 Board of Trade Bldg., Montreal.
3. Canadian Engineer, Room 404 Builders' Exchange Bldg., Winnipeg.
4. Engineering News, 220 Broadway, New York.
5. Engineering Record, 239 West 39th St., New York.
6. Engineering Contracting, 537 S. Dearborn St., Chicago, Ill.

Each tender must be accompanied by a marked cheque for Two Thousand ($2,000) dollars for each one-half mile section tendered on.

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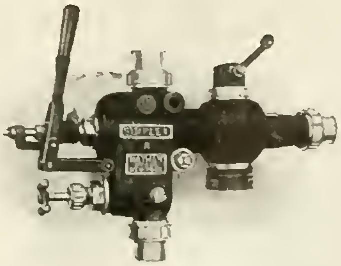

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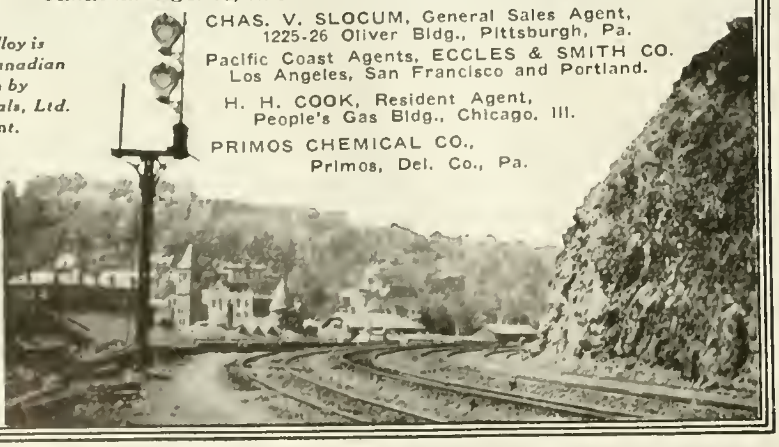

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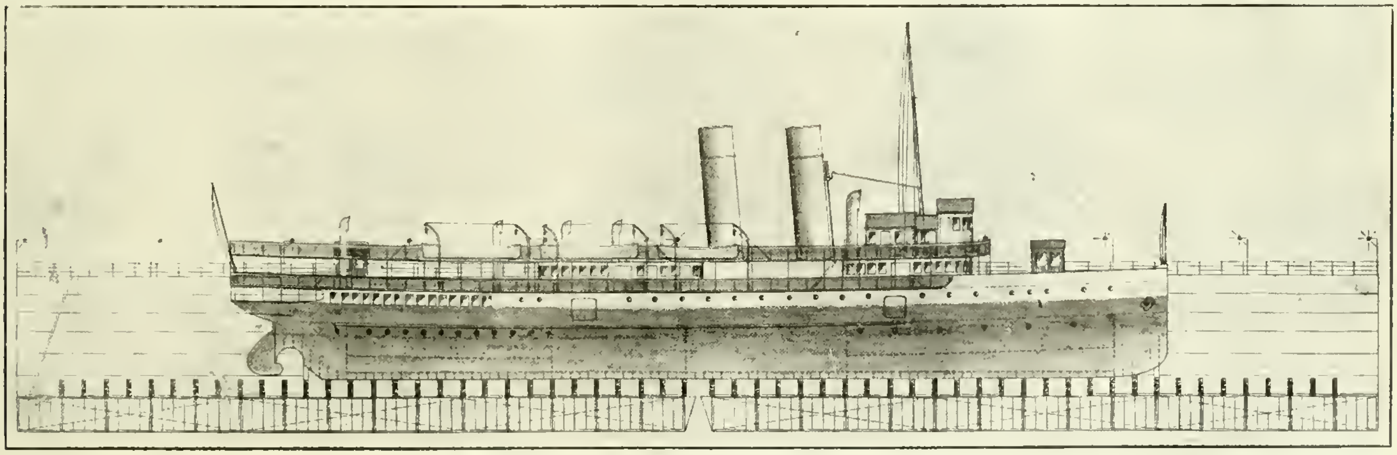
◆

Floating Dry Dock and Repair Plant for Toronto.

The Dominion Government recently granted Polson Iron Works, Ltd., Toronto, a 3% bonus yearly for 20 years on $900,000 to be spent in building a floating dry dock and a repair plant at Toronto. The dock will be located at the foot of Frederick St., just west of and adjoining the company's present plant. The company has leased from the city, 136 ft. of land just west of the present property on which a basin will be blasted to a depth of 28 ft. to accommodate the floating dock. The company has also recently acquired the property to the east of its present plant and to the east of the Sherbourne St. slip, and it is the intention to use this property outside of Lake St., as a basin for the accommodation of steam boats which may come to the dock for repairs, and this space will provide ample dock accommodation for all vessels which may be waiting their turn to use the dock.



Longitudinal Section of Floating Dry Dock for Toronto.

The floating dry dock is ultimately to be of the following dimensions:—

Length	600 ft.
Length over outrigger	642 ft.
Breadth over all	100 ft.
Breadth at deck inside	80 ft.
Breadth at top inside	84 ft.
Depth over all	35 ft.
Depth to dock deck	8 ft.
Lifting capacity	9,000 tons

At present, two sections 150 by 100 ft. are being built, making an overall length of 336 ft., having a lifting capacity of 4,500 tons, and easily able to accommodate any vessel on Lake Ontario. In the future, when larger vessels are expected to be on these waters, a 300 ft. section will be built and added to the dock, making a total length of 642 ft., and having a lifting capacity of 9000 tons.

The dry dock is of the U-shaped section, and each 150 ft. part is divided transversely by two watertight bulkheads, spaced 50 ft. apart. These bulkheads are fitted intercostally between the three longitudinal bulkheads which are run continuously from end to end, the centre one being non-watertight, and the side ones at 20 ft. from the centre line being watertight. These bulkheads are composed of ⅜ in. plating, 5 by 3 by ⅜ in. vertical stiffeners, spaced 30 in. apart and 5 in. by 3 by ⅜ in. horizontal stiffeners spaced about 7 ft. apart, and shell and deck angles of 3½ by 3½ by ⅜ in.

The framing consists of both longitudinal and transverse systems, the former being carried out between the wing bulkheads in the centre and the latter outside the wing bulkheads and on the walls. Solid floors are fitted transversely every 10 ft. between the longitudinal bulkheads, and consist of ⅜ in. plating, with connecting angles of 3 by 3 by ⅜ in. and vertical stiffeners of 5 by 3 by ⅜ in. spaced 30 ins. apart. Between these solid floors are fitted the longitudinal frames which are 6 by 3½ by ⅜ in. on the bottom and 12 by 25 in. channel at the top. The former are fitted intercostally between the solid floors, but the latter run continuously from bulkhead to bulkhead. This longitudinal system of framing is completed by a continuous series of lattice work of 4 by 4 by ⅜ in. angles with ⅜ in. cross ties and brackets securely connecting them to frames and vertical stiffeners. The longitudinal framing amounts to a non-watertight centre bulkhead, two side wing bulkheads, both watertight, and 14 rows of frames and bracings. The transverse framing consists of a series of lattice work frames opposite every solid floor of 6 by 3½ by ⅜ in. angle frames, ⅜ in. brackets and 4 by 4 by ⅜ in. bracings. The side frames of outer and inner walls extend from top to bottom continuously, and have beams securely bracketed to them about every 7 ft. The intermediate frames are fitted between each solid floor, spaced 30 in. and extend from wing bulkhead to top and are of 6 by 3½ by ⅜ in. angles with ⅜ in. brackets connecting beams and stanchions.

The bottom plating is 7-16 in. worked transversely in way of longitudinal framing at centre, and longitudinally in way of transverse framing at sides. The outer wall is ⅜ in. plating with top and bottom strakes of 7-16 in. The inside wall is of ⅜ in. plating and the top is 7-16. The deck plating is ⅜ in., worked in the same manner as the bottom plating in connection with the framing. The corner angles at the deck, top and bilge are 4 by 4½ in. All shell landings will be joggled and linears dispensed with. The end plating is ⅜ in., and is connected to deck and bottom by 4 by 4 by ⅜ in. angles with 5 by 3 by ⅜ ins. vertical stiffeners spaced 30 ins. and horizontal stiffeners of 5 by 3 by ⅜ ins. The gangways are fitted in each section in each side; the opening being 20 by 15 ft., with plating ⅜ in., and connecting angles 3 by 3 by ⅜ in. The rivets in the whole construction are ¾ in. in diameter, the plate landings being double rivetted and the laps quadruple rivitted.

Ladders are placed at each side of each pontoon and rails and stanchions are fitted all around the top. Cast iron bollards are placed in each corner of each section and securely bolted into place. Three cast steel brackets are placed on each side of each section securely fastened to heavy brackets and special connection between the two sections are fitted so as to give rigidity to the whole dock when lifting operations are under way.

The connecting links are made of forged iron and secured by bolts and held by strong lugs. The outrigger platform which extends 15 ft. from each end of dock is made up of ⅜ in. plating and has brackets and stays every 30 ft. with a fender all round its edge. On the top deck, two manholes with hinged covers are fitted to each watertight compartment. Ladders of 2½ by ½ in. flat, are placed in way of each manhole on the bulkheads.

Bilge and keel blocks are placed at suitable distances apart having an oak base 60 ft. long on which the bilge blocks can slide. This base will be bolted through clips 5 by 3 by ⅜ in. securely riveted to deck. The sliding blocks are of pine and the best arrangement of guides, pulleys, and chains will be fitted so as to make the work of docking as easy as possible.

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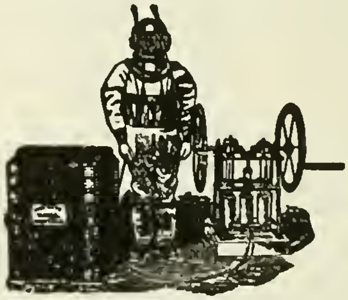

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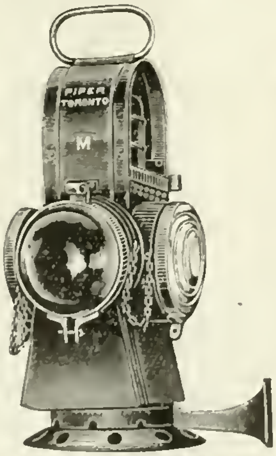

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PEOPLES GAS BUILDING,

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The pumps are the horizontal centrifugal type with 16 in. suction located in the bottom of the dock and are driven by a vertical shaft connected to a 50 h.p. motor, located on top of dock. Two pumps are fitted in each section and all parts are interchangeable. The pumps have a capacity of 7,000 imperial gallons a minute at 300 revolutions. The two pumps in each section are to empty that section in about 1 hour, 20 minutes. The motors are 50 h.p., located on suitable base plate at top of dock. The pumps are located in the bottom of the docks, discharging through the side ot the dock about 3 ft. above the bottom. The casing is of cast iron and about 7 ft. in diameter.

The suction nozzle is 16 ins. in diameter and the discharge 15 ins. diameter, the latter having a 15 in. screw check valve between end and sea valve. A cast iron manifold is fitted close to each pump for the end compartments, and two similar manifolds for the middle compartments, and from these the different branch lines run. The branches to the centre compartment are 6 in. and to the wing compartments 10 ins., each valve being fitted with a quick opening gate valve close to the manifold. Suction boxes are fitted on end of each pipe and placed in a gutterway of special construction built in the bottom of the dock, so that it can be drained dry. A 16 in. pipe connects the two pumps so that one pump can operate the whole section in case of emergency. The two flooding valves are 18 ins. in diameter. The flooding and discharge valves are operated by a spindle, with hand wheel on stand, with different heights of stands so as to be easily distinguished.

As previously stated, it is expected that at a future date, a 300 ft. section will be added to the first 300 ft. dry dock, and so accommodate the largest vessels that are expected to be on these waters, but in case of the smaller vessels, up to 150 ft., the sections will be separated and only one used for lifting. In operating docks of this description, considerable care has to be taken previous to the submersion of the dock, particularly with regard to the position of the bilge blocks, which should be as far away from the centre as possible. Also all chains and guides must be seen to be clear of all obstructions.

At the corners of the dock are vertical rollers which are of great assistance to the vessel if she is being docked in bad weather, and should they be struck by the vessel, instead of doing the damage that a square corner might do, they assist rather than retard her headway. The dock will be usually sunk about 2 ft. deeper than the draft of the vessel to be raised, and after the vessel has been securely moored by ranging lines fore and aft and by mechanically governed side shores, the pumping operations will be begun and the dock and vessel raised.

The dock will have a complete installation of electric light on the top deck, and every convenience for the rapid handling of all kinds of repairs.

It is expected to have the two sections now under construction completed so that vessels may be docked on the opening of navigation.

The company is also building a new boiler shop 300 by 120 ft, composed entirely of steel, except the boiler walls. Two large compartments are to be built, one 60 by 40 ft., for a pump and compressor room, the other 60 by 60 ft., for a flange fire shop.

◆

During July, 18 employes were killed and nine injured in the course of their work in connection with the navigation of Canadian waters. Of the fatalities, 17 were due to drowning and one to being caught in machinery.

The Loss of the s.s. Sechelt.

The enquiry into the loss of the Sechelt Steamship Co.'s s.s. Sechelt, which foundered with all hands, Mar. 24, off South Bedford Island, Beecher Bay, Straits of Juan de Fuca, was concluded Sept. 1, at Victoria, B.C., and judgment delivered by Mr. Justice Martin, concurred in by Capts, Neurotsos and Reed as nautical assessors. Following is a summary ot the judgment:—

While in the absence of direct testimony it is impossible to state definitely what brought about the disaster, yet it seems to be clear that from some unexplained cause the ship got into the trough of the sea, with a heavy westerly wind and hard squalls prevailing, which caused her to heel to such an extent as to allow the water to flow into the body of the ship through the apertures on the main deck communicating with the engine and boiler space, and forehold, and it is probable that cargo on the main deck, of light iron rails, car wheels and axles, shifted in the heavy rolling to an extent sufficient to deprive the ship of ability to right herself.

The ship, though given a certificate to carry 40 passengers under sec. 1, part VII, of the Inspection Rules, was not fitted for the Victoria-Sooke route, for which she was licensed, and the Inspector of Hulls, J. C. Kinghorn, should not have given her permission to run on it. A grave error in judgment was made in classing the route in question as being one within "the island waters" of Canada, as defined by sub-sec. (g), sec. 72 of the Canada Shipping Act, because it comes clearly within the exception "salt water ways and gulfs on the sea coast" specified in that section, and though part of the route, viz., from Victoria to Race Passage, would in general be more or less sheltered, except from southeasterly gales, yet after passing through that passage a ship would be exposed to the full force of prevailing westerly gales from the Pacific ocean. The Sechelt was quite unable to cope with such conditions or with the ordinary stress of wind and weather to be encountered in that locality, because of her peculiar construction, whereby the main deck was in effect made the weather deck, and also because of the insecurely protected apertures above mentioned, which properly come within the scope of sec. 14 of part VII, of the Inspection Rules, requiring that "gangways and openings on or below weather deck" should "be fitted with covers in such a manner that they can be quickly and efficiently secured;" with other similar provisions respecting coamings and hatch covers intending to safeguard the bouyancy of the ship, which were insufficiently observed or ignored, though the section declares them to be "important items to be noticed by the inspector in steamboats subject to heavy seas."

The vessel was originally designed as a tug for service on Lake Washington, but had had much additional superstructure for the accommodation of passengers which tended to lessen her original stability, and encouraged the carrying of freight on the main deck.

Though sec. 24 of the Inspection Rules provides that the steering gear shall be inspected and thoroughly examined at least once a year by the Inspector of Hulls, there is no specific evidence that this was done, which is the more to be regretted as it was suggested that the cause of the ship unaccountably getting into the trough of the sea was owing to some defect in the steering gear. It is surprising to observe that in the printed form of return of inspection no reference is to be found to this essential matter. Though the Sechelt has been stranded in the Vancouver Narrows, Aug. 7, 1910, and again on Bowen Island, Nov. 5, 1910, and her main engine had broken down on Dec. 8, 1910, suffering on each occasion a material degree of injury to her hull or machinery as defined by secs. 15 and 21 of the Canada Shipping Act of 1908, which injuries were, in two cases at least, reported to the Inspector of Hulls, yet permission was given to her owners to change her run from Vancouver to Sechelt to a more dangerous one, viz., from Victoria to Sooke, without any inspection, though full powers are given to the inspector in such cases. With reference to the issuance of a certificate that a vessel is fit to ply, the limits within which she may ply must be defined and a duplicate of the certificate posted in a conspicuous part of the steamboat. In this case the certificate states that the Sechelt is permitted to run on the waters between Vancouver and Sechelt, therefore she was running on a route for which she had in fact no certificate.

The judgment concludes with a number of recommendations, for the appointment of additional inspectors, and for the establishment of rules that no vessel should be allowed to carry freight or passengers for hire without having first obtained the certificate of a board of inspection collectively, that she is in all respects suitable for the route on which she is to ply, instead of the two individual and inadequate certificates now in use.

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Canadian Notices to Mariners.

The Department of Marine has issued the following:—

94. Aug. 23. 252. Quebec, Ottawa River, Vaudreuil bay, Vaudreuil village wharf, day beacons. 253. United States of America, Lake St. Clair, light vessel removed. 254. United States of America, Lake, Huron, north channel Potagannissing bay, shoal reported.

95. Aug. 25. 255. Quebec, Chaleur bay, Carleton, Tracadigash point, lighthouse rebuilt. 256. Quebec, Chaleur bay, Cascapedia bay, New Richmond, change in position of buoy. 257. Quebec, River St. Lawrence below Quebec, off Cape Tormente, gas buoy removed. 258. Quebec, River St. Lawrence below Quebec, northward of Ile aux Reaux, gas buoy placed temporarily for dredging purposes.

96. Sept. 2. 259. Quebec, Saguenay river, buoys established below Chicoutimi. 260. Quebec, River St. Lawrence, below Montreal, Tetreauville, range lights established.

97. Sept. 7. 261. British Columbia, Queen Charlotte Islands, Hecate strait, Moresby island, Houston Stewart channel, gas lighted beacon established. 262. British Columbia, Queen Charlotte Islands, Houston Stewart channel, Flat rock, gas lighted beacon established.

98. Sept. 11. 263. New Brunswick, Bay of Fundy, Chignecto channel, Cumberland basin, Barnes point, lighthouse established. 264. New Brunswick, Chaleur bay, Miscou island, Miscou harbor, change in position of Harper Point light. 265. Nova Scotia, off Madame island, Green island, height of light. 266. Nova Scotia, Cape Breton, St. Peter bay, Jerome point, change in illuminating apparatus. 267. Prince Edward Island, north coast, off Malpeque harbor, bell buoy established. 268. Newfoundland, east coast Conception bay, Carbonear, light established on wharf.

99. Sept. 12. 269. British Columbia, Strait of Georgia, Active pass, Mayne island, Georgine point, temporary fog alarm.

100. Sept. 12. 270. Nova Scotia, Cape Breton, Baleine cove, bell buoy established. 271. Newfoundland, west coast Hawke bay, range beacons established. 272. England, west coast, Scilly Isles, St. Mary's island, light established, St. Agnes island, light discontinued.

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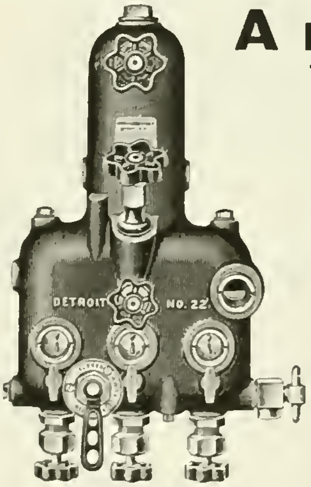

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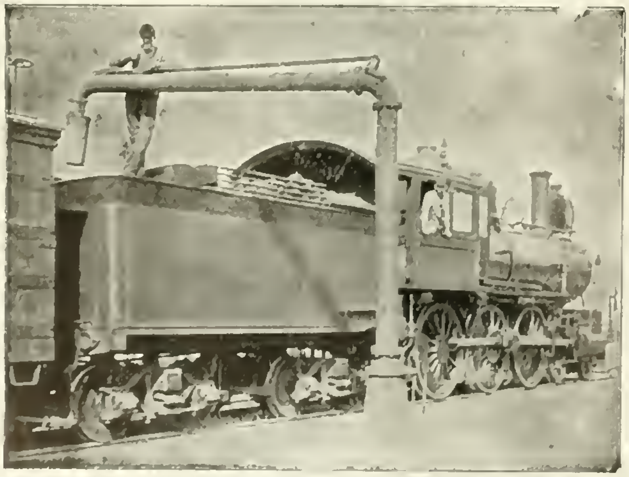

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Notice to Contractors.

SEALED TENDERS for the following supplies addressed to the undersigned and endorsed "Tender for track materials for the Hudson Bay Railway," will be received at this office until 16 o'clock on Monday, the 16th day of October, 1911.

30,000 gross tons steel rails 80 lbs. per yard.

1,700 gross tons splice bars.

2,100 kegs track bolts and nuts 200 lbs. per keg.

8,000 kegs track spikes 200 lbs. per keg.

Specifications, drawings, forms of tender, and form of contract to be entered into can be seen on and after Tuesday, August 22nd, at the office of the Chief Engineer of the Department of Railways and Canals, Ottawa, and at the office of the Chief Engineer of the Hudson Bay Railway, Winnipeg, at which places forms of tender may be obtained.

Contractors are requested to bear in mind that tenders will not be considered, unless made strictly in accordance with the printed forms, and in the case of firms, unless there are attached the actual signature, the nature of the occupation, and place of residence of each member of the firm.

An accepted bank cheque equal to 5 p.c. of the tender made payable to the order of the Minister of Railways and Canals must accompany each tender, which sum will be forfeited if the party tendering declines entering into contract for the work, at the rates stated in the offer submitted.

The cheque thus sent in will be returned to the respective contractors whose tenders are not accepted.

The cheque of the successful tenderer will be held as security, or part of security, for the due fulfilment of the contract to be entered into.

The lowest or any tender not necessarily accepted.

By order,
L. K. JONES,
Secretary.

Department of Railways and Canals,
Ottawa, September 6, 1911.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.

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New Steamship for Halifax-Boston Route.

The Canada Atlantic and Plant Steamship Co., has ordered in Glasgow, Scotland, a steamship for service between Halifax and Boston. The contract calls for delivery at Halifax, N.S., by June 1, 1912. She is being built to Lloyds' requirements with all the latest improved equipment. Her dimensions will be, length 350 ft., breadth 46 ft., depth, molded to main deck, 33 ft. The hull will be of steel, with double bottom and seven water tight bulkheads divided into six compartments. There will be five decks, lower, main, awning, boat or promenade and navigating and bridge. There will be 265 staterooms, with accommodation for 650 passengers, and cargo capacity of 1,500 tons. The deck houses will be of steel with teak doors and finish. On the bridge deck there will be captain's and officers' quarters, wireless telegraph office and operator's room, and on the promenade deck will be situated a smoke room, 40 by 25 ft., finished in oak and morocco leather, aft of which will be the main entrance leading to the awning deck, and also 50 staterooms. The whole of the awning deck will be devoted to passenger accommodation, with wide promenade on each side. A social hall will be provided, 56 by 30 ft., the forward part constituting an observatory with a clear view looking forward. Adjacent to the social room, six suites of rooms will be provided, and there will be other staterooms aft. The dining saloon will be on the main deck forward, being 35 by 45 ft., with seating accommodation for 150 persons. The remainder of this deck will be taken up with staterooms, bridal suites, and toilet accommodation. The crew's quarters, galley, etc., will be on the lower deck. The most improved systems of steam heating and electric lighting will be installed. The vessel will be driven by twin screws and equipped with engines capable of developing a speed of 18 knots an hour.

Atlantic and Pacific Ocean Marine.

The Newfoundland Shipping Co., has chartered the s.s. Rescue, owned in Goole, Eng., to load fish at St. John's for Spain and Italy.

The Uranium Steamship Co.'s s.s. Uranium, bound from Rotterdam to New York, after calling at Halifax, had to delay her voyage there, owing to trouble with her engines.

A Montreal press report states that a Liverpool, Eng., firm, will shortly inaugurate a steamship line between the Maritime Provinces and Mediterranean ports, starting from Halifax, N.S., and calling at St. John N.B. and New York or Philadelphia, mainly in the fish trade.

A Liverpool, Eng., press dispatch announces an increase of 10% in freight rates by steamship companies operating across the Atlantic, to go into effect Sept. 11, but it is stated that it was doubtful if the change can be put into force before the commencement of the winter traffic.

The new vessels which the C.P.R. has ordered for its Pacific service will be built with cruiser sterns, that is, the underbody aft will be cut away, and the rudders will be of a type which has not been used generally in the merchant service, but has been adopted on the channel service vessels between England and France.

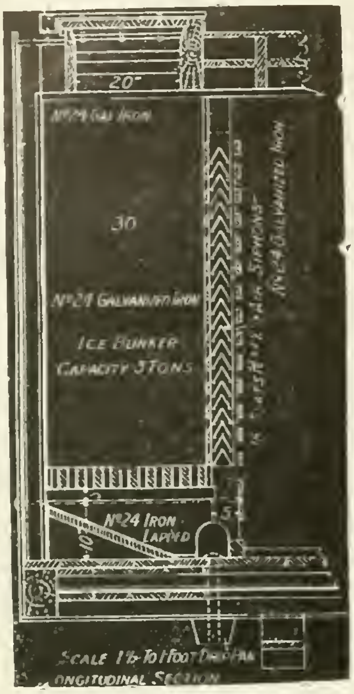
It is reported from Jacksonville, Fla., that a steamship line is to be started between Halifax, N.S., Savannah and Charleston, with a possible extension of

LIST OF STEAM VESSELS REGISTERED IN CANADA DURING JULY, 1911.

Name	No.	Where and When Built.	Engines, etc.	Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
A. L. Conrad.	130,676	Tancook, N.S , 1911........	Screw ½ n. h. p..	40.4	10.6	5 2	12	11	Lunenburg, N.S......	A. Conrad, Rose Bay, N.S.
Adelphi	130,694	Vancouver, B.C., 1911......	" ⅓ " ..	37.7	11.2	5.5	11	9	Vancouver, B.C......	W. J. Thicke, Vancouver, B.C.
Annie Boss...	130,695	....	" ½ " ..	30.6	7.2	4.0	6	4	"	H. Curtis and R. Asbcroft, Vancouver, B.C.
Axa.....	130,341	Bredalbane, P.E.I., 1911 ...	" 1 " ..	26.9	7.6	4.9	6	5	Charlottetown, P.E.I.	W. P. Murry, Bredalbane, P.E.I.
Cuprum......	130,558	Vancouver, B.C., 1911......	" 2½ " ..	59.5	11.4	5.8	29	19	Vancouver, B C......	Britannia Mining Co., Britannia Beach, B.C.
Dotken	130,376	Lindsay, Ont., 1907	" ½ " ..	24.8	5.8	2.4	3	2	Peterboro, Ont.......	C. P. Routley, Peterboro, Ont.
Elsie C.	130,690	Tancook, N.S., 1911.......	" ½ " ..	40.2	9.8	5.0	11	10	Lunenburg, N.S.....	W. Cross, Tancook, N.S.
F. N. & B....	130,641	Sturgeon Falls. Ont., 1911..	" 1½ " ..	28.0	9.6	3.2	12	8	Ottawa, Ont.........	F. E. Clark, Sturgeon Falls, Ont.
Gambier.....	130,696	Vancouver, B.C., 1911......	" ½ " ..	28.2	9.0	3.2	9	6	Vancouver, B.C ...	T. H. Burgess, M.O., Vancouver, B.C.
Gaudiose.....	130,527	Verdun, Que., 1911.	" 1 " .	27.7	7.9	2.6	5	3	Montreal, Que.......	E. Thornton, Verdun, Que.
George P.....	130,323	Rockport, Ont., 1905	" 1 " ..	31.6	8.3	3.0	7	5	Kingston, Ont.	F. Williams, M.O., Newport, Ont.
Grosbeak.....	130,379	Hastings, Ont., 1911	" 2 " ..	39.2	11.7	4.7	14	10	Peterboro, Ont......	Randolph Macdonald Co., Toronto
Hope Tranfer	130,486	Vancouver, B.C., 1910......	" ½ " ..	28.2	8.1	2.0	7	5	New Westminster, BC	L. Gibson, Hope, B.C.
Ivola.........	130,378	Peterboro, Ont., 1909.	" ½ " ..	26.0	5.3	2.2	2	1	Peterboro, Ont. ..	L. A. Potvin, Peterboro, Ont.
J. W. Dickie	130,559	United States.......	" 1 " ..	24.0	8.0	2.5	6	4	Vancouver, B.C	D. W. Taylor, Vancouver, B.C
Jolly Mac....	130,69⁴	Vancouver, B.C., 1911......	" 1 "	53.2	11.0	5.0	26	18	"	A. Houston, M.O., Vancouver, B.C.
Lady Fraser..	130,484	Rosedale, B.C., 1910	" 1½ "	35.2	9.0	1.2	12	8	New Westminster, BC	L. Gibson, Hope, B.C.
Little Queen.	130,327	Cape Vincent, N.Y., 1911 ...	" 1 " .	41.6	9.8	5.5	13	10	Kingston, Ont........	G. Pyke, Wolf Island, Ont.
Loafer........	130,524	Montreal, 1910	" 2¼ " ..	32.0	7.8	3.2	7	5	Montreal	R. Burnett, Montreal
Long Sault...	126,853	Sorel, Que., 1911........ ...	" 28 " ..	65.0	17.6	6.6	69	28	Sorel, Que.	G. Dansereau, Grenville, Que.
Lottie B. L. .	130,570	Tancook, N.S., 1910	" 1 " ..	42.0	10.4	5.3	12	11	Lunenburg, N.S......	A. Levy, Little Tancook, N S.
Louis Joseph.	126,931	Ste. Anne de Chicoutimi, 1911	" 4¼ " ..	70.8	17.9	4.9	61	40	Quebec Que..........	E. Gagnon, Ste. Anne de Chicoutimi, Que.
Mersyde......	130,342	Summerside, P.E.I., 1911...	" ½ " ..	63.8	16.0	5.6	40	37	Charlottetown, P.E.I.	D. A. Pickering, Summerside, P.E.I.
Nakano......	130,691	Steveston, B.C., 1911	" 2 " ..	48.0	11.8	5.2	24	16	Vancouver, B.C......	R. Nakano, Steveston, B.C.
Numida	126,918	Indian Harbor, N.S., 1911..	" 1½ " ..	38.0	11.2	5.6	14	*	Halifax, N.S.........	J. Hackenley, Indian Harbor, N.S.
Osso	130,326	Kingston, Ont., 1911........	" 9 " ..	60.3	9.6	4.8	24	15	Kingston, Ont........	J. H. Davis, Kingston, Ont.
Rebecca M.L.	130,569	Tancook, N.S., 1911	" ½ "	41.4	10.3	5.3	12	11	Lunenburg, N.S	N. Levy, Little Tancook, N.S.
Samuel G.....	126,777	Richibucto, N.B., 1911.....	" ½ " ..	37.6	11.8	5.5	14	10	Richibucto, N.B....	A. Loggie, Richibucto, N.B.
Scotty	130,692	Steveston, B.C., 1909.	" 1 " ..	34.4	8 1	3.2	9	6	Vancouver, B.C......	G. C. Jackson, Vancouver, B.C.
Sterling D....	130,693	Vancouver, B.C., 1911.....	" 3 " ..	34.4	10.6	6.2	13	9	....	J. Plowman, North Vancouver, B.C.
Valinda	130,244	Liverpool, N.S., 1911.... ..	" 19 " ..	95.0	21.5	9.3	118	60	Liverpool, N.S:	Hendry Limited, Liverpool, N.S.

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA DURING JULY, 1911.

Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners
Cecile B.........	126,919	West Chezetcook, N.S., 1911..	Scbr.	51.2	17.0	6.3	32	Halifax, N.S.........	J. Bellefontaine, M.O., West Chezetcook, N.S.
Cormier........ .	126,780	Aldouane, N.B., 1907	"	30.0	12.0	5 0	10	Richibucto, N.B....	J. Cormier, Richibucto, N.B.
Cunner	130,677	Tancook, N.S., 1911	"	40.8	10.0	5.2	11	Lunenburg, N.S......	V. Langille, Tancook, N.S.
E. L. Comeau . .	130,366	L'Ardoise, N.S., 1910	"	42.0	12.5	5.8	14	Arichat, N.S....... .	E. L. Comeau, Petit de Grat, N.S.
Eva E. L.........	130,687	Little Tancook, N.S., 1909...	"	39.6	10.2	5.4	11	Lunenburg, N.S......	L. Awalt, Bayswater, N.S.
F. No. 2........	130,485	Fraser Mills, B.C., 1910.......	Barge	101.0	32.5	8.2	244	New Westminster, BC	Canadian Western Lumber Co., Fraser Mills, B.C.
Harper	130,678	Little Tancook, N.S., 1908...	Scbr.	40.8	9.8	5.0	10	Lunenburg, N.S......	H. Publicover, M.O., Blandford, N.S.
Hay Boy	130,328	Wolfe Island, Ont., 1911	Scow	65.2	20.0	5.1	77	Kingston, Ont.	G. Pyke, Wolfe Island, Ont.
Hullo	130,684	Tancook, N.S., 1911..........	Schr.	42.8	10.1	5.5	12	Lunenburg, N.S......	A. Stevens, M.O., Tancook, N.S.
Hugbie, V L	130,673	Little Tancook, N.S., 1910....	"	39.6	10.2	5 4	11	" . ..	R. Levy, Little Tancook, N S.
Hydraulic	130,653	Loggieville, N.B., 1911......	Scow	85.0	27.0	5.0	146	Chatham, N.B.	A. Loggie, M O., Dalhousie, N.B.
K. 26	130,660	New Westminster, B.C., 1911.	"	62.7	26.0	6.9	102	Vancouver, B.C......	G. C. McKeen, Vancouver, B.C.
L'Acadienne	130,337	Lameque, N.B., 1911	Schr.	37.0	13.3	5.8	18	Chatham, N.B	J. S. Noel, Shippigan Island, N.B.
Laurin & Leitch, No. 4	130,528	Montreal, 1910	Scow	65.2	22.0	6.7	89	Montreal	T. Bastien et al, J.O.. Montreal
Laurin & Leitch, No. 3	130,529	" 1910	"	57.0	22.0	6.6	89	"	" "
Libby P.	130,343	North Rustico, P.E.I., 1911 .	Schr.	35.7	11.7	5.1	11	Charlottetown, P.E.I.	J. N. Pino, North Rustico, P.E.I.
M. A. McDonald.	130,362	Ingonish, N.S., 1911	"	38.3	12.9	6.6	17	Sydney, N. S.	N. McDonald, South Bay, N.S.
Matilda H.	130,676	Tancook, N.S., 1906.........	"	40.0	10.1	5.2	12	Lunenburg, N.S....	C. Heisler, Tancook, N.S.
Oriole, L........	130,683	" 1909.........	"	39.4	10.0	5.0	10	"	W. Levy, Little Tancook, N.S.
Ricbibucto, Pearl	130,661	Peters Mills, N.B., 1911	"	35.0	11.0	6.0	12	Richibucto, N.B.....	C. Mazroll and T. Arseneault, Peters Mills, N.B.
Reggie P. P.	130,674	Eastern Points, N.S., 1910....	"	40.0	10.6	5.6	11	Lunenburg, N.S......	N. Publicover, Blandford, N.S.
S. F. Levy.......	130,685	Little Tancook, N.S., 1911....	"	40.4	10.0	5.6	12	"	H. Levy, Little Tancook, N.S.
Sagua	126,779	St. Louis, N.B., 1902.........	"	52.0	11.0	6.0	10	Richibucto, N.B.....	C. Mazrolle, St. Charles, N.B.
V. F. Williams ...	130,363	Ingonish, N.S., 1911	"	35.0	12.7	6.2	13	Sydney, N.S.........	V. and F. Williams, Ingonish, N.S.
Vera May	130,686	Tancook, N.S., 1911.....	"	46.6	13.4	6.8	22	Lunenburg, N.S......	E. M. Boutillier, M.O., Halifax, N.S.
Verna L.	130,681	Lunenburg, N.S., 1907	"	40.6	10.9	6.6	12	"	J. Lohnes, Middle L. Have, N.S.
Warren C. C.....	130,682	" 1907........	"	40.2	10.8	6.6	12	"	D. Gilfoy, M.O., Feltz South, N.S.



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FOR REFRIGERATORS AND DINING CARS

The original Dry Air Siphon System. It gives strongest circulation of air. Consumes least ice. Strongest and most durable. Costs least to maintain. Every tank guaranteed.

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Barney & Smith Car Co.
Pullman Car Co.
Chicago, Milwaukee & St. Paul R. R. Co.
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Department of Railways and Canals, Canada.

BADECK BRANCH LINE.

Intercolonial Railway.

SEALED TENDERS addressed to the undersigned and endorsed "Tender for Alba-Baddeck Branch," will be received at this office until sixteen o clock on Thursday, October 12th, 1911, for the construction of a branch line of railway from a point on the Intercolonial Railway, near Alba to the town of Baddeck, a distance of 22.7 miles.

Plans, specifications and form of contract to be entered into may be seen and full information obtained on and after 15 inst., at the office of the Chief Engineer of the Department of Railways and Canals, Ottawa, and at the office of the Chief Engineer of the Intercolonial Railway at Moncton, N.B.

Parties tendering will be required to accept the fair wages schedule prepared or to be prepared by the Department of Labour, which schedule will form part of the contract.

Contractors are requested to bear in mind that tenders will not be considered, unless made strictly in accordance with the printed forms, and in the case of firms, unless there are attached the actual signature, the nature of the occupation, and place of residence of each member of the firm.

An accepted bank cheque for the sum of $30,000.00, made payable to the order of the Minister of Railways and Canals must accompany each tender which sum will be forfeited if the party tendering declines entering into contract for the work, at the rates stated in the offer submitted.

The cheque thus sent in will be returned to the respective contractors whose tenders are not accepted.

The cheque of the successful tenderer will be held as security, or part security, for the due fulfilment of the contract to be entered into.

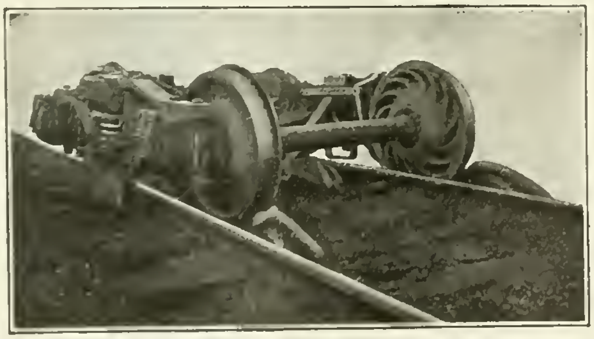
The lowest or any tender not necessarily accepted.

By order,
L. K. JONES,
Secretary.

Department of Railways and Canals,
Ottawa, September 9th, 1911.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.

The Alexander Car Replacer



60,000 PAIRS IN USE.

Manufactured at **Montreal, Que.**, and **Scranton, Pa.**, of Pressed Steel Plate, and guaranteed to re-rail heaviest equipment.

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FOR RAILWAYS, TRAMWAYS, GIRDERS, ETC.

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James Thomson, Pres. and Mang. Director
J. G. Allan, Vice-President.
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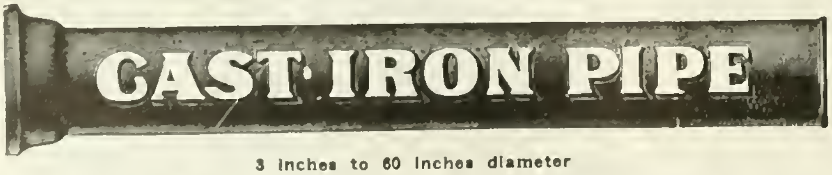
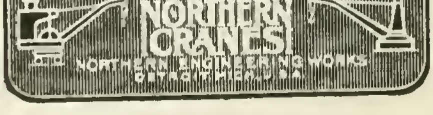
THE GARTSHORE-THOMSON PIPE & FOUNDRY CO. LIMITED

MANUFACTURERS OF



3 inches to 60 inches diameter
FLEXIBLE AND FLANGE PIPE AND SPECIAL CASTINGS
FOR WATER, GAS, CULVERT AND SEWER
HAMILTON, ONT.



the service to Havana, that the proposed service will be commenced as a monthly one, and that if the trade permits, a better service will be put on. M. N. Stineud, of Halifax, N.S., is said to be interested in the scheme.

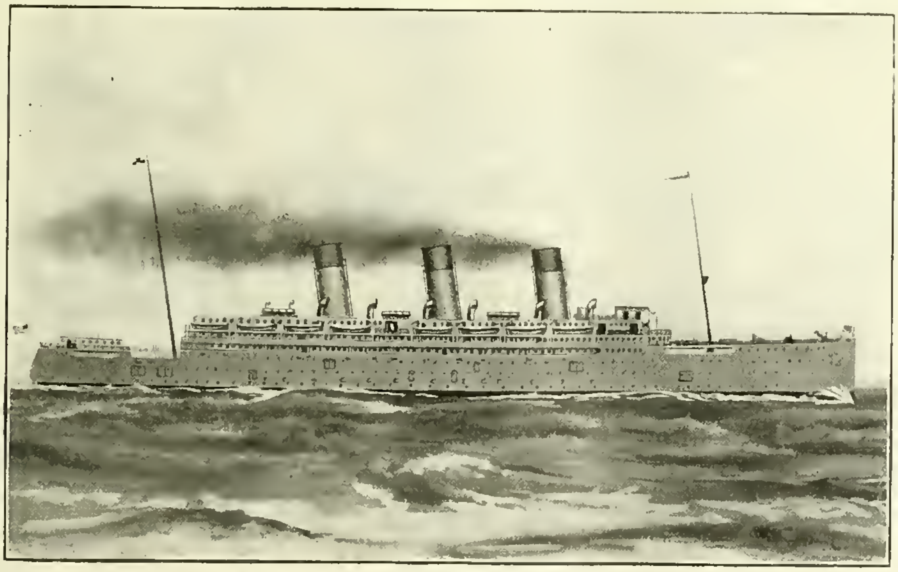
Press reports state that the London and North Western Ry. of England, has sent representatives to various parts of Europe and to Lake Michigan, to study the operation of car ferries, with a view to deciding the practicability of adopting some such service between Great Britain and Ireland in connection with the proposed "all-red" service between Galway, Ireland and Halifax, N.S.

A Halifax press report states that following a conference between Sir William Mackenzie, President, Canadian Northern Steamships Ltd., and the Newfoundland Premier, the company is considering the extension of its trans-Atlantic service to Newfoundland, with Trepassey as the port of call. The Newfoundland Government is stated to be willing to pay a subsidy for the service.

The Union Steamship Co. of New Zealand, has ordered in Scotland, a vessel for service between Vancouver, Honolulu, Suva, Auckland and Sydney. She will be about 12,000 tons, length 423 ft.; beam 66 ft.; and will be equipped with combined turbine and reciprocating engines for a speed of 17 knots an hour. There will be accommodation for about 700 passengers and a large refrigerator space. The contract calls for delivery by the summer of 1912.

The Union Steamship Co., of New Zealand is reported to have purchased the s.s. Port Kingston, which was built at Glasgow, Scotland, for the Elder Dempster Co.'s West Indies route. It is stated that this vessel will be placed on the Canada-New Zealand mail route pending the completion of the vessel which the company has recently ordered, and that she will replace the Zew Zealand Shipping Co.'s s.s. Zealandia, at present on the route.

A correspondent writing to a London, Eng., daily paper, recently, from Dublin, Ireland, says that a harbor at Galway is of Imperial importance, as it would shorten the ocean journey between Ireland and Halifax, N.S., to 3⅛ days, and to Trepassey, Nfld., to 2¾ days, the saving in distance being 965 miles to Canada and 1,480 miles to Newfoundland, as compared with the Liverpool to New York route. The mail service, he says, would be accelerated by 1½ days between Halifax and London and by one day between London and New York.



One of the Twin Steamships being built for the C.P.R. Trans-Pacific Service.

The enquiry into the cause of the stranding of the C.P.R. s.s. Empress of China, off the Japanese coast, July 27, which was held at Yokohama, Aug. 17, showed that the disaster was due to the vessel having been set out of her course 18 nautical miles by a strong and unusual current, of which the master had no knowledge and no means of knowledge. No blame was attached to him, nor other of the officers, but he was ordered to pay the cost of the enquiry, £6 4s. 6d. Since the wreck, salvage operations have been in progress almost continuously, under considerable difficulties. It was recently reported that the vessel had been dragged about 40 ft. nearer deep water and that her cargo had been lightered and several holes patched up. She is in a bad position, and should a heavy storm arise, it is feared that she might break up. It was however anticipated that she could be floated and taken to Hong Kong for repairs.

Maritime Provinces and Newfoundland.

The Dominion Public Works Department received tenders Sept. 20 for the construction of a series of wharves in the harbor at St. John West, N.B.

The Dominion Public Works Department has awarded the contract for the construction of a breakwater at Brooklyn, N.S., to the Nova Scotia Construction Co., at about $200,000.

The steam tug Progress, of St. Pierre, which left St. John's, Nfld., recently, after undergoing repairs, sprang a leak during a storm off Cape Pine and sank, the crew escaping in one of the boats.

At a meeting of the St. John ferry committee, Sept. 1, $2,500 was voted for the installation of steam steering gear and other changes in the ferry steamboat Governor Carleton, bringing the cost of the vessel to date, to $42,689.42. A contract was also awarded for the repainting of the ferry Ludlow.

The Merchants' Transportation Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $50,000 and office at Sydney, N.S., to own and operate steam and other vessels and carry on the business of shipowners and common carriers. The incorporators are, Jas. McConnell, A. W. Mann, F. G. Konig, W. T. Lynch and J. A. Young, Sydney, N. S.

The steamboat Robert G. Cann, recently built at Shelburne, N.S., has been towed to Yarmouth, where her machinery is being installed. She has been built for hard service and her passenger accommodation has been made large and comfortable. Her dimensions are, length 125 ft.; breadth, 25 ft.; depth 10 ft. It was expected that she would be ready for operation early in October.

The Newcastle Mines is applying to the Lieutenant-Governor in Council, for incorporation, with a capital of $600,000 and office at Minto, N.B., with power to carry on a general mining business, and among other things, to build, own and operate barges, vessels, etc.

The Dominion Department of Public Works will receive tenders, to Oct. 3, for the construction of a wharf at Meat Cove, N.S., to Oct. 11, for the construction of a breakwater at the entrance to Little Bras d'Or, and for the construction of a wharf at Louisdale, N.S., and to Oct. 19, for the construction of a wharf at Rous Brook, Lunenburg, N.S.

The steamboat Miner, which was sold by the sheriff, Sept. 11, at North Sydney, N.S., to Thompson and Sutherland, for $250, was formerly owned by the Port Hood Richmond Ry. Coal Co., and was built at Jarrow, Eng., in 1880. She is screw driven with engine of 16 n.h.p. Her dimensions are: Length, 65 ft., breadth 14.6 ft., depth 6.8 ft., tonnage, 49 gross, 33 register.

The steamboat Sincennes, owned by D. J. Purdy, St. John, N.B., was destroyed by fire at Cole's Island, Sept. 8, one of the crew losing his life, and another receiving injuries, from which death resulted later. She was built at Montreal in 1893, and was a paddle wheel vessel with engine of 34 n.h.p. Her dimensions were, length 142.2 ft.; breadth 24.4 ft., depth 8.4 ft., tonnage, 228 gross, 129 register.

At the recent annual meeting of the Canada Atlantic and Plant Steamship Co., at Halifax, N.S., it was announced that a new steamship is under construction at Glasgow, Scotland, for the company, for delivery by June, 1912. Following are the officers for the current year: President, A. W. Perry; Vice President, McC. Grant; Treasurer, H. G. Perry; Auditor, R. C. Verner; Secretary and Eastern Manager, H. L. Chipman.

The Dartmouth, N.S. Ferry Commission's new ferry steamboat Halifax, built at Glasgow, Scotland, arrived at Dartmouth, Sept. 1, having taken 22 days on the voyage. She is a double screw vessel, driven by compound surface condensing engines supplied with steam at 120 lbs. working pressure, by two boilers. The hull is of steel with three water tight bulkheads at each end of the vessel. Her dimensions are: length 125 ft.; breadth, 48 ft.; depth 13 ft. 1 in.; tonnage, 600 gross, 268 register.

The Nashwaak Lumber Co., Ltd., has been incorporated under the New Brunswick Companies Act, with a capital of $2,500,000 and office at Marysville, N.B., to acquire the Alexander Gibson Railway and Manufacturing Co. property, and in connection therewith to build, own and operate steam and other vessels, wharves, piers, warehouses, etc., and to act as ship owners and carriers by land and sea. The incorporators are, D. Jardine, Liverpool, Eng.; L. and J. S. MacLaren, H. H McLean, F. R. Taylor, St. John, N.B., and A. Rowley, Marysville, N.B.

Province of Quebec Marine.

The Department of Public Works received tenders, Sept. 26, for the construction of a breakwater at Rimouski, Que.

The Harris Tie and Timber Co.

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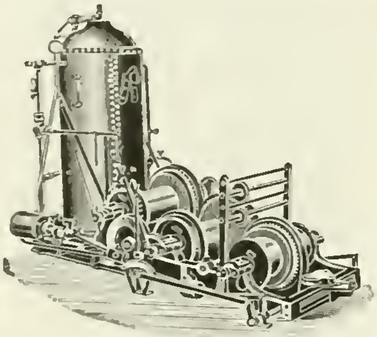
Cedar Poles and Posts
Railway Ties Piles
Railway and Bridge Timber



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Dredges - Ditchers - Derricks
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Submarine Rock Drilling Machinery
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Bridges and Steel Structures

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CREO

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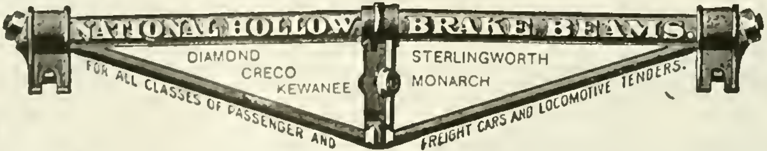
NATIONAL HOLLOW BRAKE BEAMS.
DIAMOND
CRECO
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MONARCH
FOR ALL CLASSES OF PASSENGER AND FREIGHT CARS AND LOCOMOTIVE TENDERS.

Our "PC Creco" Brake Beams are for use on new heavy steel passenger equipment and withstand a load of 40,000 lbs. with 1-16 in. deflection. Greater capacity if desired, without increase in Diamond Special depth of strut or change of adjustable brake head.

CANADIAN OFFICE, 22 ST. JOHN STREET, MONTREAL

CREO

JOHN S. METCALFE C., LTD.

GRAIN ELEVATORS

Wharves Power Plants Freight Sheds

We are well equipped to do heavy pile driving.

Montreal, Que. Chicago, Ill.

It is reported that the Quebec and Levis Ferry Co. will build another railway ferry to cope with the increasing traffic between Quebec and Levis.

Revillon Freres Trading Co., is applying to the Dominion Parliament for incorporation, to carry on a general trading business and to take over the business and property of Revillon Bros. Ltd.

The Montreal Harbor Commissioners, accompanied by their Chief Engineer, Secretary and Superintendent Engineer, visited Quebec, Sept. 8, in their steam tug, Sir Hugh Allan, and were entertained on board the Dominion Government s.s. Druid by the Quebec Harbor Commissioners.

The International Transit Co., has sold its ferry steamboat Algoma, to a Montreal syndicate. She was built at Toronto in 1901, and is a screw driven vessel with engine of 54 n.h.p. Her dimensions are, length 104 ft.; breadth, 26.3 ft.; depth 11ft.; tonnage, 157 gross, 107 register.

There was handled in the Montreal Harbor Commissioners' elevators this year, to Aug. 1, 8,348,001 bush. of grain, against 7,962,777 bush., during last year. In Aug. there was a slight decrease in the amount handled, as compared with Aug. 1910, stated to be due to the railway strikes in England.

The Montreal Harbor Commissioners invited a number of business men to accompany them on an inspection trip, Sept. 6, on their new steam tug, Sir Hugh Allan. The various works in progress were visited, including the 10-ton electric hoist, which had been put into operation the previous day for the first time, the grain elevator and the new Victoria pier.

During August there were 3,426 vessel passages through the Lachine canal, against 3,336 in Aug. 1910. Of the vessels passing through the canal, 640 steamboats and 682 barges were Canadian owner, and 83 steamboats and 84 barges owned in the U.S. There was a considerable increase in the quantity of merchandise handled and a decrease of about 4,000 in the number of passengers.

The Montreal Harbor Commissioners, after an interview with a special committee of the Corn Exchange, Sept. 13, decided to postpone the date, from Sept. 15, when their bylaw limiting the free storage of grain in their elevators to 10 days, shall come into force, pending the receipt of a written statement on the matter promised by the committee. The bylaw limits the free storage to 10 days, instead of 20 days, as heretofore, and provides for a charge of one-twentieth of a cent a bush. for each day thereafter which the grain shall remain in storage. The committee points out that Portland, Me., allows 30 days and ⅛c. a bush. for each additional 10 days; Boston, Mass., 20 days and ⅛c. for each additional 10 days, and New York, 10 days and ⅛c. for each additional five days, with insurance charges extra.

◆

Ontario and the Great Lakes.

The canal employes in the Dominion Government Service have been granted increases in wages, to date from April last.

Weddell and Manley, of Toronto, have been awarded the contract for the construction of a turning basin in the Welland canal at Thorold.

The navigation season on the Yukon River will close Oct. 10, on which date the last sailings from Dawson and White Horse are scheduled.

The Calvin Co., Kingston, Ont., has entered action against the owners of the s.s. Hero, for $30,000 damages for the sinking of its s.s. Chieftain.

A. Major, master of the Montreal Transportation Co.'s barge Hector, died suddenly at Kingston, Sept. 13, aged 55. He was a native of Valleyfield, Que.

The Welland canal was open for the passage of vessels on Sunday Sept. 10, and it was announced that it would be kept open on Sundays for the remainder of the navigation season.

An Ottawa press dispatch of Sept. 7, stated that the Canadian Northern Ry. has acquired the Rideau Lakes Navigation Co., and that it will extend the service on the Rideau Lakes.

The steamboat Riverside, which grounded in the Cornwall canal, Aug. 23, was released Sept. 3, by the raising of the water level, owing to the local works being closed and the canal not open to navigation.

The city of Toronto recently invited tenders for the construction of a steam tug for use in the harbor. Only one tender was received, viz.: from the Polson Iron Works, Ltd., Toronto, for $17,063. The board of control has recommended that it be accepted.

Alex. Cunning, master of the Great Lakes Towing Co.'s steam tug Favorite, was arrested at Amherstburg, recently, on a charge of theft of cargo from the wreck of the steamboat Wissahickon, which ran ashore on Duck Island about the close of navigation last year.

The Montreal Transportation Co.'s barge Winnipeg, in tow with 1,200 tons of coal for Montreal, struck a rock in the Rapid du Plat, Sept. 13, and later sank near Farrans Point, below Morrisburg. She was built at Kingston in 1893.

The Dominion Public Works Department has been carrying out sounding and boring operations at Goderich, north of the harbor, and near the mouth of the Maitland river, in connection with the proposal to extend the north breakwater by 1,000 ft.

Capt. M. A. Livingstone of the Northern Navigation Co.'s s.s. City of Midland, was presented with a silver loving cup recently, by a number of the passengers, in appreciation of his services during a disagreeable trip through bad weather, between Mackinac and Collingwood.

The schooner Keepsake, owned at Belle River, and which has been used for some time as a sand carrier, ran on the rocks near the mouth of the Detroit River, Sept. 1. She was built at River Puce in 1880, her dimensions being, length 72.6 ft.; breadth, 19.9 ft.; depth, 3.7 ft.; tonnage 45 register.

The Northern Navigation Co.'s s.s. City of Midland, while backing out of Parry Sound harbor recently, struck bottom, breaking her shoe and driving her rudder into the wheel. The Dominion Government steamboat Simcoe, towed her to Collingwood, where the necessary repairs were carried out.

The Turbine Steamship Co.'s s.s. Turbinia, which was recently fined $50 for an alleged infringement of the U.S. navigation laws, has had the fine remitted, and has been allowed, for the present, to continue to carry excursionists as heretofore.. It is stated that during the winter, the law will be carefully looked into.

The Northern Navigation Co. has arranged with Hugh Calderwood to prepare plans for another steamship,

LAKE GRAIN SHIPMENTS.

The following statement, prepared by F. E. Gibbs, Grain Inspector, Fort William, Ont., shows the bushels of grain shipped by vessels from Fort William, and Port Arthur, of the 1910 crop, from Sept. 1, 1910 to Aug. 31, 1911. The last two figures in each column represent lbs.

Destination	Wheat	Oats	Barley	Flax
Buffalo	22,884,128-00	1,113,110-06	653,291-05	1,974,368-21
Cleveland				80,000-00
Collingwood	500,241-10			
Chicago				6,662-48
Depot Harbor	891,224-30	351,465-10		
Erie	251,885-00			
Goderich	5,379,831-00	2,697,693-20	92,167-26	101,842-46
Hamilton	50,896-00			
Kingston	8,117,262.30	2,680,016-12	391,314-14	78,101-33
Montreal	5,590,408-40	6,446,156-30	139,407-14	176,008-47
Midland	314,511-50	50,169-13		
Meaford	485,000-00			
Owen Sound	1,184,103-20	1,645,312-31	99,071-34	
Port Colborne	3,719,698-50	662,513-18		
Prescott	27,878-20			10,443-32
Prince Edward	1,515,332-00	922,438-00	53,728-40	123,219-30
Port Huron	612,595-40			22,835-32
Port Stanley	99,698-20	30,360-00		
Quebec		285,350-15		
Tiffin	8,100,930-10	1,986,654-21	89,911-10	
Thorold	289,106-40			
Walkerville	340,181-50			
Victoria Harbor	1,311,466-20	717,189-00		
Crop, 1910	61,666,375-10	19,488,429-06	1,518,891-47	2,574,483-09
Crop, 1909	62,756,194-40	20,100,953-25	2,585,437-20	3,030,241-30
Canadian vessels	38,626,296-10	18,479,138.08	1,060,600-42	694,451-46
U.S. vessels	23,040,079-00	1,009,290-32	458,291-05	1,970,031-19

The following shows grain shipped from the opening of navigation, Apr. 21, to Aug. 31.

Buffalo	9,509,460-10	683,785-12	197,628-06	229,399-25
Depot Harbor	431,224-30	34,000-00		
Goderich	2,175,302-20	2,211,299-22	67,667-26	76,017-47
Kingston	4,012,348-50	1,789,469-13	263,032-21	50,627-38
Montreal	8,399,496-20	5,059,207-25	44,298-36	81,420-42
Meaford	105,000-00			
Owen Sound	506,127-20	677,466-31	74,071-34	
Port Colborne	1,751,601-20	562,513-18		
Point Edward	221,630-00	409,479-14	9,727-32	60,128-17
Quebec		198,159-26		
Tiffin	2,342,638-30	1,626,738-04		
Walkerville	107,370-00			
Victoria Harbor	258,417-40	472,310-28		
	24,820,617-00	13,724,430-23	656,421-11	496,594-01

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which it intends to build for operation next season. The new vessel will be about the size of the company's s.s. Hamonic, and as soon as the plans are completed they will be submitted to shipbuilders for tenders.

The Montreal, Ottawa and Georgian Bay Canal Co. has given notice of application to the Dominion Parliament for amendments to its act of incorporation, including the naming of seven of the incorporators to act as provisional directors, and to extend the time within which the contemplated works may be commenced and completed.

J. H. Hall, Manager, Ottawa Forwarding Co., who recently returned to Canada from Scotland, is reported to have stated that negotiations were practically completed for the purchase of a vessel in Scotland, for operation on the Rideau canal, between Ottawa and Kingston, and that the vessel will be brought across the Atlantic under her own steam.

The Northern Michigan Transportation Co., Chicago, Ill., is arranging docking facilities at Collingwood, for its steamboat Missouri, which it purposes placing on the route from Chicago via Mackinac island and the Sault canal, to Georgian Bay points. The Missouri is a steel vessel, and was built in 1904. and is of the following dimensions, length, 250 ft.; breadth 40 ft..; depth, 16 ft.; tonnage, 2434 gross, 1484 register.

The vessel Toiler, a new type of lake freighter, of which we gave a full description some time ago, and which has been built in England for the Canadian lake trade, sailed from Middlesbrough, Eng., at the end of August, with a cargo of pig iron, for Halifax and Montreal, arriving at Halifax, Sept. 22. It was not anticipated that she would make the voyage this season, and we were advised to that effect a few weeks ago, as mentioned in our September issue.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above tidewater for August, as follows:— Superior, 602.15; Michigan and Huron, 579.83; Erie 571.62; Ontario 245.19. Compared with the average August levels for the past ten years, Superior was 0.71 ft. below; Michigan and Huron 1.33 ft. below; Erie, 1.08 ft. below and Ontario, 1.45 ft. below. It was anticipated that during September, Superior would rise 0.1 ft., Michigan and Huron, would fall 0.2 ft.; Erie, fall 0.3 ft., and Ontario, fall 0.4 ft.

The Ottawa River Navigation Co. has only been operating the steamboat Princess on the river between Montreal and Carillon this season, and has not been operating the Grenville and Ottawa end of the route. The Carillon and Grenville Ry., which has been purchased by the Mackenzie, Mann and Co. interests, has not been operated this year. This railway is to be changed to standard gauge, and it is anticipated that next year connection will be made with the steamboat at Carillon, and the journey to Ottawa completed by rail.

A press dispatch from Winnipeg, Sept. 8, stated that Sir Donald Mann, Vice President, Canadian Northern Ry., announced there that next year the C.N.R. would proceed with the establishment of a line of passenger vessels on the Great Lakes, the first sailing to take place in the spring of 1913. Another dispatch, from Duluth, Minn., states that the headquarters of the proposed service will be at Duluth, and that strong competition with U.S. lake lines is proposed, with an increased ocean service to handle grain cargoes.

The Farrar Transportation Co., Collingwood, has been awarded about $20,000 as damages sustained by its steamboat Collingwood in a collision with the U.S. steamboat George L. Craig in the Detroit River, Aug. 24, 1909. The matter has been before the courts for some time, and was referred to arbitrators, who met in Cleveland, Ohio, recently and settled the case. G. E. Fair, Manager, Farrar Transportation Co., and A. W. Wright, Manager, St. Lawrence and Chicago Steam Navigation Co., Toronto, acted for the Farrar Transportation Co., and W. H. McGean, Cleveland, Ohio, for the owners of the George L. Craig.

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B.C. and Pacific Coast Marine

The Vancouver Dry Dock and Shipbuilding Co., Ltd., is applying to change its name to The Port of Vancouver Dry Dock and Shipbuilding Co., Ltd.

The Canadian North Pacific Fisheries Co., which recently acquired the s.s. Petriana from the Northern Steamship Co., has changed its name to Grey.

The steam tug Colima, which we announced in our last issue had been purchased by the C.P.R., for use in its car ferry service, has been re-named Quallcum

SAULT STE. MARIE CANALS TRAFFIC

The following commerce passed through the SaulteSte. Marie Canals in August:

Articles			Canadian Canal	U. S. Canal	Total
Copper	Eastbound	Short tons	571	14,647	15,218
Grain	"	Bushels	3,748,210	686,208	4,434,418
Building stone	"	Short tons	800	195	995
Flour	"	Barrels	304,149	664,702	968,851
Iron ore	"	Short tons	3,839,629	1,440.451	5,280,080
Pig iron	"	"		2.615	2,615
Lumber	"	M. ft. B.M.	4,832	76,127	80,959
Silver ore	"	Short tons			
Wheat	"	Bushels	3,286,295	2,171,241	5,457,536
General merchandise	"	Short tons	9,403	20,177	29,580
Passengers	"	Number	4,409	7,339	11,748
Coal, hard	Westbound	Short tons	32,750	255,333	288,083
Coal, soft	"	"	485,572	1,730,871	2,216,443
Flour	"	Barrels			
Grain	"	Bushels			
Manufactured iron	"	Short tons	23,588	37,956	61,544
Iron ore	"	"	3,136		3,136
Salt	"	Barrels	14,294	65,489	79,783
General merchandise	"	Short tons	77,308	89,597	166,905
Passengers	"	Number	6,283	6,912	13,195
Vessel passages		Number	1,022	2,064	3,086
Registered tonnage		Net	2,952,817	3,823,878	6,776,695
Freight—Eastbound		Short tons	4,053,958	1,746,878	5,800,836
" —Westbound		"	624,396	2,123,580	2,747,976
Total freight		"	4,678,354	3,870,458	8,548,812

Short tons are tons of 2,000 pounds

The North Vancouver Ferry Co., has renewed its application to the city council to purchase $150,000 of the company's stock to enable it to purchase an additional ferry steamer.

After an inspection by the Government Steamboat Inspector, the North Arm Steamship Co.'s steamboat Skeena, has been licensed to carry 425 passengers instead of 150 as heretofore.

The liquidator of the Fort George Lumber and Navigation Co., recently stated that it would be several months before the company's affairs would be settled and that the dividend to ordinary creditors would be very small.

The B.C. Public Works Department received tenders, Sept. 15, for the operation of ferries across the Fraser River at North Bend; across the North Thompson River at Chinook Cove, and across the North Thompson River at Jones' Crossing.

It is reported that an engineer representing the Department of Public Works, has selected a site at Nelson, for the immediate construction of a dredge for service on the Columbia River, to replace the present one, which is considered too small for the work.

By order of the British Admiralty, the single screw sloop of war, H.M.S. Egeria was offered for sale at Victoria, Sept. 18 and 19, together with one 28ft. steam cutter and other equipment. She is 160 ft. long, with beam 31ft. 4 ins., and is equipped with engines of 120 h.p.

A press dispatch from Mirror Lake, Sept. 6, stated that J. C. Gore, Superintendent, C.P.R. British Columbia Lake and River Service, accompanied by some Great Northern Ry. officials, inspected the steamboats International and Kaslo, which are controlled by the G.N.R., with a view to purchase.

C. H. Nicholson, Manager, G.T.P. Pacific Coast Steamship Co., announced recently that the steamships Prince Rupert and Prince George would be equipped with oil burning apparatus, at the close of the summer season, and that the company would construct large capacity oil storage tanks near the Main St. docks.

Robert Ward and Co., Victoria, are applying to the Governor General in Council for approval of the plan and site of a proposed wharf to be built in front of lot 1299, Lot 46 Beckley Farm, Victoria. The necessary plans have been deposited with the Minister of Public Works, Ottawa, and in the Land Registry Office, Victoria.

The Vancouver Harbor and Dock Extension Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of $10,000,000 and office at Vancouver, to build, own and operate steam and other vesels, to carry on a general ship owning and forwarding agents' business, to build, own and operate wharves, docks, dry docks, warehouses, etc., and for other purposes.

J. A. Thomson, Dominion Government Steamboat Inspector for British Columbia, stated recently that since 1889, the tonnage of vessels on the Slocan, Kootenay and Arrow lakes has increased from under 100 to over 8,000 tons. In 1889 the largest steamboat on the lakes was the Galena of 47.64 gross tons, now the largest is the C.P.R. steamboat Bonnington of 1,700 tons.

The C.P.R. has added another transfer barge to its car ferry service. It was built at Esquimalt, and is stated to be the first steel barge built on the Pacific coast. It is constructed on the Isherwood longitudinal system, giving greater strength and additional space. It will carry 15 loaded cars, and has four hatches for cargo. It is equipped

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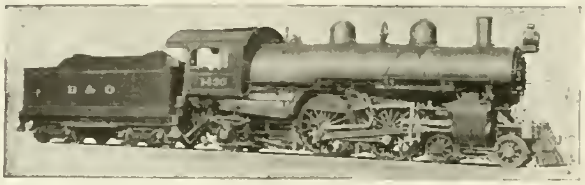

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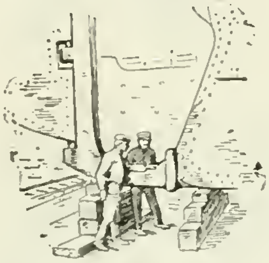

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with strong derricks and gear for quick transfer. It is named Transfer No. 3, and its dimensions are: length, 254 ft.; breadth, 42 ft.; depth, 4 ft., with capacity for 1,200 tons of cargo.

Judgment respecting the loss of the s.s. Iroquois, off Sidney, B.C., Apr. 10, was given by Justice Martin, assisted by Capts. Neroutsos and Reed as nautical assessors, Sept.. 14, when the certificate of the master, A. A. Sears, was cancelled, that of the engineer, W. Thomson, suspended for nine months, and that of the mate, J. Isbister, for six months. Regarding the master, the judgment declares that the harsh comments on his conduct after reaching shore were not justified by the evidence, but he failed to perform his duty in regard to rescue work and stowage of cargo, and also failed in his ability as a seaman and master. The Inspector of Hulls is blamed for not insisting on suitable alterations to vessels.

The Wreck of the s.s. Amethyst

Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. F. Nash, and Capt. F. J. Thomson, Superintendent Canadian Northern Steamships, as nautical assessors, held an investigation at Quebec, Aug. 26, into the cause of the stranding and the loss of the s.s. Amethyst off Mutton Head, in Trepassey Bay, Nfld., on July 22. The Amethyst was a single screw steel built vessel, whose speed was from eight to nine knots. She was registered in Montreal, the owner being Dr. J. P. L. Fiset, and was engaged in transportation of freight and a limited number of passengers, between Montreal and the Maritime provinces and St. John's, Nfld. Her crew numbered from 18 to 20 and her tonnage was 1,400 gross and 892 net. She was drawing 13 ft. aft and 7 ft. forward on her fatal voyage.

The master, O. C. Bernier, deposed that he is the holder of a Canadian certificate of competency, issued in 1883, and that the Amethyst left Sydney, July 20, and that on passing Flat Point at 7.30 a.m. a departure was taken, the log was put over and set at zero, and although enveloped continually in a dense fog the vessel proceeded at full speed on a southeast by east half east course. At 4 a.m. on the 22nd a sounding, which recorded 72 fathoms, was taken, but this is contradicted by the log entry reading "55 fathoms," which latter, however, the master declares is incorrect. After a lapse of approximately four hours, without an additional cast having been taken, the indistinct sound of a fog signal was heard, whereupon the master, with an unverified position, forthwith accepted the vague sound as Cape Race and proceeded accordingly. Herein, however, rested the error which lost this ship, for the sound which came to him, as he now admits, was Cape Freer, but at the time its existence being unknown to him, although he had heard as long as a year previous of the proposed Cape Freer signal, he proceeded in an almost impenetrable fog at full speed under the belief that it was Cape Race. But a brief period elapsed before the captain and others observed that the ship was heading for and almost upon the rocks, whereupon the order to reverse was promptly given, but almost simultaneously with this order or immediately following it the vessel struck, and the engines being kept full astern for a period ranging from 10 to 15 minutes the gravity of the vessel's position was realized by the master, who then ordered full ahead with the object of beaching her. A signal for assistance was sounded, and the boats ordered to be lowered and the crew quickly manned them and abandoned the ship without instructions from the captain to do so. Tow vessels in the vicinity responded to the call for assistance and succeeded in salving a large number of the live stock, as well as a portion of the general cargo from the then partly submerged vessel, which work could have been accomplished more satisfactorily and with greater completeness had the crew rendered the assistance their duty called for. Interrogated as to the navigation instruments at his disposal on the trip, the captain declared that there was but one compass, so enclosed within the wheelhouse that the deviation could not be ascertained by planetary observation, and that he relied exclusively upon the courses previously steered and the bearings of known points of land to navigate his ship. The inadequacy of the ship's equipment in this respect was brought to the owner's attention by the master, but the desired improvement was not affected. Other witnesses corroborated the captain's testimony both as regards the weather conditions and the manner in which the ship was navigated, and the second officer declared that as they believed the ship would sink immediately, they sought refuge in the boats and abandoned her, he adding, however, that the master was one of the last if not the last to leave the disabled ship. When he, the second officer, left the vessel in the boat only part of the Amethyst was above the water and the morning following she was no longer visible.

John S. Conradi, M.I.M.E.

The court finds that as the Amethyst was inadequately supplied with navigating instruments, the captain instead of suggesting the need of additional aids in this respect to the owner, who was not a mariner and therefore unaware of its importance, should have insisted upon the vessel being properly equipped for its safe navigation. Furthermore, that the master by his own admission, failed to exercise the caution and the navigating skill which the circumstances called for and that too much reliance was placed upon the infrequent sounding of an unreliable lead line. Also, that the log was improperly kept and that the captain, when he heard the sound, which he admits to have been indistinct, should have taken the necessary means of authenticating his supposition, which action would have disclosed his error, instead of forthwith concluding that the signal which he heard was Cape Race and none other. In view of the fact that the master of the Amethyst has already been in command of two vessels which met with disaster, the present ship being his third total loss, the court orders that his certificate be suspended for 18 months from Aug. 26, 1911, to Jan. 26, 1913. The first officer, Oscar Mercier, who in a measure is also responsible for the careless method in which the Amethyst was navigated, cannot be exonerated, and in view of his negligence in this respect, and for his unpardonable indifference to a subpœna served upon him by the court, which action on his part is akin to contempt, his certificate is suspended for six months from Aug. 26, 1911 to Feb. 26, 1912.

The Polson Iron Works Management.

John S. Conradi, who has been appointed General Manager of Polson Iron Works, Ltd., Toronto, and who will have the active management of the present plant, and of the construction and operation of the floating dry dock now under construction, was born in Glasgow, Scotland, and is 41 years of age. He commenced his engineering career in the workshops of the late firm of Maudsley, Son & Field, of Westminster, engineers and boiler makers, who supplied propelling machinery for a large number of British battleships and cruisers, and it is said that many mills in Great Britain are still running with engines built by them a hundred years ago. To gain experience in the running of marine engines and handling and care of boilers under actual running conditions, he joined the Ross Line of steamships sailing to Australia, South America, and the Gulf of Mexico and Canada. After four years of this experience and obtaining Board of Trade certificates, he entered the service of John I. Thornycroft Co., of Chiswick, Southampton and Basingstoke, shipbuilders and engineers, remaining with them 14 years, for six of which he was Superintendent and Manager and was responsible for the speed and steam trials of many speed record breaking vessels built under his supervision. He also had to do with the building of the first destroyer for the British Admiralty and the stern wheel steamboats built for relief of Khartoum in the Nile expedition. He is said to have been the first person in England to adopt pneumatic tools in the construction of marine boilers. The first steam turbine built and installed in a war vessel was carried out during his service with the firm. Five years ago he entered the Vickers Co.'s service as General Manager of their plants at Erith, Crayford and Dartford, the manufactures including ordnance, ammunition, rifles and motor cars. He was elected a member of the Institute of Mechanical Engineers in 1892.

Industrial Opportunities in Nova Scotia and New Brunswick, a booklet issued by the Intercolonial Ry., contains useful information for those who desire to establish new industries, or to invest capital in the exploitation and development of natural resources. The advantages of many parts of New Brunswick and Nova Scotia are presented in detail, together with many facts that ought to impress those who have capital ready to invest in a new field that is certainly rich in opportunity. The booklet will be mailed free on application to the Industrial Department, I.C.R., Moncton, N.B.

The Crows Nest Southern Ry. has authorized H. A. Jackson, Assistant Traffic Manager, Great Northern Ry., St. Paul, Minn., to file tariffs of tolls, under the provisions of the B.C. Railway Act, 1911.

Stranding of the s.s. Princess May.

An enquiry into the causes of the stranding of the C.P.R. s.s. Princess May, on Sentinel Island, Alaska, on Aug. 5, 1910, was held recently at Victoria, B.C., before Mr. Justice Martin, assisted by Capt. A. H. Reed and Capt. S. Cullington as nautical assessors. The following judgment was delivered Aug. 31:—

The court finds that the chief officer, John Richardson, who was officer of the watch, was solely to blame for the accident, which was due to his negligent and careless navigation to such a degree that his certificate should be suspended, but in view of the fact that more than a year has elapsed from the time of the stranding to the holding of the investigation, during which he has entered the service of another employer as master mariner, wherein he appears to have conducted himself satisfactorily, the court is of opinion that it would work a hardship to visit the consequences of a somewhat stale charge as chief officer upon him, and therefore considers that the justice of the case will now be met by a suspension of 24 hours only, but this formal suspension will nevertheless be recorded upon his certificate as a constant warning to him in future of his duty to the public. The court observes from the evidence that the master, John MacLeod, was required to keep a regular watch, but in view of the fact that the master is at all times burdened with the responsibility of the ship and is frequently called upon through stress of weather and other circumstances to remain on watch for long periods, causing much physical and mental strain, we consider that in the public interest he should not, in vessels where two certificated officers are carried, be required to keep regular watch, but to take due opportunity for rest during intervals of fine weather and favorable conditions, in order that he may exercise his faculties in the best possible manner when conditions require him to take charge of the vessel. The present unsatisfactory state of affairs could be remedied by allowing officers who are fully qualified to take regular watches during ordinary favorable conditions.

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The Stranding of the Yacht Ida May.

Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Captains B. Couch and R. A. Butt, as nautical assessors, held an investigation at Quebec, Aug. 24, into the cause of the stranding of the yacht Ida May, of Morrisburg, N.Y., on the north of the east end of the Island of Orleans, near Quebec, on Aug. 20. They found that the pilot, Isiode Noel, failed to utilize in a practical

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CITY OF TORONTO.
TENDERS
for
OVERHEAD AND POLE LINE MATERIAL.

Separate or bulk tenders on prescribed forms will be received by registered post only, addressed to the Chairman of the Board of Control, City Hall, Toronto, Canada up to noon on Wednesday, Oct. 18, 1911, for the supply of overhead and pole line materials, which include the following: No. 2/0 trolley wire; 300,000 c.m. feeder wire; steel tubular poles; span wire, hangers, ears, insulators and pins, etc.

Specifications and forms of tender may be obtained on application to the Department of Railways and Bridges, City Engineer's Office, Toronto.

Envelopes containing tenders must be plainly marked (on the outside), "Tender for Overhead and Pole Line Material."

The tenderers shall submit with their tenders the names of two sureties (approved of by the City Treasurer, not members of the City Council or officers of the Corporation of the City of Toronto), or in lieu of said sureties, the bond of a guarantee Company approved of as aforesaid.

The lowest or any tender not necessarily accepted.

G. R. GEARY (Mayor),
Chairman of the Board of Control.
City Hall,
Toronto, Aug. 31, 1911.

◆

The Grand Trunk Railway Company of Canada.

Notice is hereby given, that the Ordinary Half-yearly General Meeting of the Grand Trunk Railway Company of Canada will be held at the City Terminus Hotel, Cannon Street, London, E.C., on Thursday, the 26th day of October, 1911, at 12 o'clock noon, precisely, for the purpose of receiving a report from the Directors, and for the transaction of other business of the Company.

Notice is also given that a Resolution will be submitted to the Meeting to authorize the Directors to exercise the powers conferred by the Grand Trunk Act 1911, as amended by the Grand Trunk Amendment Act, 1911.

Notice is also given that the Transfer Books of the Company in London and Montreal will be closed from Saturday, the 23rd. day of September, to the day of meeting, both days inclusive.

By order.
ALFRED W. SMITHERS,
Chairman,
H. H. NORMAN,
Secretary.
Dashwood House, 9 New Broad Street,
London, E.C., 15th September, 1911.

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manner the aids to navigation in the vicinity of the stranding, which neglect is all the more pronounced in view of the exceptionally clear weather prevailing at the time, and furthermore, that when he undertook to pilot a vessel in waters with which he had not a thorough knowledge he ignored the grave responsibilities of his charge, in view of which the court held that he was careless and committed a serious error of judgment. He was fined $40 and warned that if he reappeared before the Wreck Commissioner he would be severely dealt with.

Vessels Removed from the Register.—The following vessels were removed from the Canadian register, during July, for the reasons assigned:— Steam—Belcarra, Vancouver, B.C., 172 tons, foundered; Belfast, Vancouver, B.C., 72 tons, burnt; Ganges, Vancouver, B.C., 15 tons, burnt; Maple Leaf, Peterboro, Ont. 17 tons, broken up; Ouangondy, St. John, N.B., 99 tons, broken up; Saturna, Vancouver, B.C., 15 tons, wrecked; Western Extension, St. John, N.B., 169 tons, broken up. Sailing—Damaraland, Liverpool, N.S., 199 tons, abandoned at sea; Frances, Shelburne, N.S., 68 tons, transferred to Newfoundland; Minnie Cline, St. John, N.B., broken up; Nautilus, St. Andrews, N.B., 19 tons, broken up; Nettie M.G., Halifax, N.S., 32 tons, transferred to Newfoundland.

◆

The Australian Government is reported to have re-opened negotiations to join in the subsidy agreement regarding the Canadian mail service. The present arrangements cover a service between Canada and New Zealand, the respective Governments only being parties thereto, Australia having withdrawn from the previous agreement.

The Purchasing Agents' Guide

To the Manufacturers of and Dealers in Steam and Electric Railway, Marine, Grain Elevator, Express, Telegraph, Telephone and Contractors' Supplies, &c.

Accountants and Auditors
W. M. Dunlop & Co. ....Ottawa.
Acetylene
Commercial Acetylene Co. ....Toronto.
Aerated Waters
E. L. Drewry ....Winnipeg.
Air Brakes and Fittings
Allis-Chalmers-Bullock, Ltd. ....Montreal.
Canadian Westinghouse Co. Hamilton, Ont.
Ales
E. L. Drewry ....Winnipeg.
Alloys
American Vanadium Co...Pittsburgh, Pa.
Titanium Alloy Mfg. Co. ..Pittsburgh, Pa.
Angle Bars
Steel Co. of Canada, Ltd..Hamilton, Ont.
Anti Rail Creepers
The Holden Co., Ltd. ....Montreal.
Asbestos
Can. H. W Johns-Manville Co., Ld. Toronto
Automobiles
Preston Car & Coach Co. ...Preston, Ont.
Axes
James Smart Mfg. Co, ...Brockville, Ont.
Axles
Canadian Car & Foundry Co., ..Montreal.
James Hutton & Co. ....Montreal.
Nova Scotia S & C. Co. New Glasgow, N.S.
Jas. W Pyke & Co. ....Montreal.
Steel Co. of Canada, Ltd..Hamilton, Ont.
Babbit Metal
C. H. Besly Co. ....Chicago, Ill.
Tallman Brass & Metal Co. Hamilton, Ont.
Batteries, Storage
T. A. Edison Co., Inc. ..... Orange, N.J.
Battery Boards
Geo C. Royce ....West Toronto, Ont.
Beacons
International Marine Signal Co.....Ottawa.
Bearings, Side
Canadian Car & Foundry Co. ..Montreal.
Chicago Railway Equipment Co..Chicago.
Blankets and Bedding
The Hudson's Bay Co. ....
Blasting Powder
Curtis's & Harvey (Canada) Ltd.Montreal.
Boiler Checks
Nathan Manufacturing Co. ....New York.
Boilers
Babcock & Wilcox, Ltd. ..... . Montreal.
Polson Iron Works, Ltd ....Toronto.
Robb Engineering Co., Ltd. Amherst, N.S.
Boilers, Portable
Babcock & Wilcox, Ltd. ....Montreal.
Polson Iron Works Ltd. ... .Toronto.
Robb Engineering Co., Ltd .Amherst, N.S
Boilers, Stationary and Marine
Babcock & Wilcox, Ltd. ....Montreal.
Polson Iron Works Ltd. ....Toronto.
Robb Engineering Co., Ltd Amherst, N.S
Boilers, Steam
Babcock & Wilcox, Ltd ....Montreal.
Polson Iron Works Ltd. ....Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Boilers, Water Tube
Babcock & Wilcox Ltd ....Montreal.
Robb Engineering Co., Ltd..Amherst, N.S.
Polson Iron Works, Ltd. ....Toronto.
Bolsters
Canadian Car & Foundry Co.. .Montreal.
Whyte Railway Signal Co. ....Toronto.
Bolt Cutters
London Machine Tool Co., Ltd..Hamilton
Bolts and Nuts
Steel Co. of Canada, Ltd..Hamilton, Ont.
Bolts, Track
Nova Scotia S. & C. Co..New Glasgow, N.S.
Borers, Car Wheel
John Bertram & Sons Co...Dundas, Ont.
Boring Mills
London Machine Tool Co., Ltd..Hamilton.
Brake Beams
Buffalo Brake Beam Co...Brantford, Ont.
Canadian Car & Foundry Co.....Montreal
Chicago Railway Equipment Co..Chicago.
Brake Shoes
Am. Brake Shoe & Fdry. Co.Mahwah, N.J.
Canada Iron Corporation, Ltd...Montreal.
The Holden Co., Ltd. ....Montreal.
Brake Shoes, Locomotive Driver
Am. Brake Shoe & Fdry. Co.Mahwah, N.J.
Canada Iron Corporation, Ltd...Montreal.
Dorner Railway Equip. Co....Chicago, Ill.
Railway Materials Co. ....New York.
Brass
C. H. Besly Co. ....Chicago, Ill.
Brasses, Car
T. McAvity & Sons ....St. John, N.B.
Bridge Numbers
Acton Burrows, Limited ....Toronto.
Bridges
Canadian Bridge Co. ....Walkerville, Ont.
Cleveland Bridge & E. Co. Darlington, Eng.
Corbet Foundry Co. Ltd. Owen Sound, Ont.
Dominion Bridge Co. ....Montreal.
Bronze
American Vanadium Co....Pittsburgh, Pa
Titanium Alloy Mfg. Co.. .Pittsburgh, Pa.
Buckets, Coal, Ore and Concrete
M. Beatty & Sons, Ltd. ....Welland, Ont
Brown Hoisting Machinery Co..Cleveland
Buildings, Steel
Canadian Bridge Co. ....Walkerville, Ont.
Cleveland Bridge & E. Co. Darlington, Eng.
Dominion Bridge Co. ....Montreal.
Bumping Posts
Dominion Equip. & Supply Co..Winnipeg
The Holden Co., Ltd. ....Montreal
McCord & Co., ...Chicago, Ill.
Buoys
International Marine Signal Co....Ottawa.
Cables, Electric and Feeder
Canada Wire & Cable Co., Ltd ..Toronto.
Chapman & Walker, Ltd........ Toronto.
E. F. Phillips Electrical Works..Montreal
The Wire & Cable Co............Montreal
Capstans
Dake Engine Co. .....Grand Haven, Mich
Car Furnishings
Guilford S. Wood ....Chicago, Ill.
Car Loaders, Box
Mussens, Ltd. ....Montreal.
Car Movers
F. H. Hopkins & Co. ....Montreal.
Mussens, Ltd. ....Montreal.
Car Roofing
Franklin Railway Supply Co.....New York.
Cars
R. M. Burns & Co. .... Chicago, Ill.
Crossen Car Mfg. Co. ......Cobourg, Ont
Canadian Car & Foundry Co .. Montreal.
Dorner Railway Equip. Co...Chicago, Ill.
J. T Gardner ....Chicago, Ill.
Hart-Otis Car Co., Ltd. ....Montreal.
Ottawa Car Co., Ltd ....Ottawa
Pay-As-You-Enter Car Co. . ..Montreal.
Preston Car & Coach Co., Ltd...Preston.
Russel Wheel & Fdry Co.... Detroit, Mich.
Western Wheeled Scraper Co. Aurora, Ill.
Car Signal Systems
Ohio Brass Co. ....Mansfield, Ohio.
Cars, Logging
Russel Wheel & Fdry Co.....Detroit, Mich.
Castings
American Vanadium Co....Pittsburgh, Pa.
Canadian Car & Foundry Co ....Montreal.
Crossen Car Mfg. Co. ......Cobourg, Ont.
Lumen Bearing Co ... West Toronto, Ont.
Russel Wheel & Fdry Co.... Detroit, Mich
Titanium Alloy Mfg. Co....Pittsburgh, Pa
Castings, Brass
Canada Iron Corporation, Ltd...Montreal.
Canadian Bronze Co. ....Montreal..
Corbet Fdry Co., Ltd. ..Owen Sound, Ont
Kerr Engine Co. ....Walkerville, Ont.
Lumen Bearing Co. ....West Toronto, Ont.
Tallman Brass & Metal Co.Hamilton, Ont.
Castings, Car
Am. Brake Shoe & Fdry. Co.Mahwah, N.J
Canada Iron Corporation, Ltd....Montreal.
Russel Wheel & Fdry Co.....Detroit, Mich
Castings, Iron
Allis-Chalmers-Bullock, Ltd. ...Montreal
Canada Iron Corporation, Ltd....Montreal
Corbet Fdry Co., Ltd. ..Owen Sound, Ont.
Kerr Engine Co. ....Walkerville, Ont.
Russel Wheel & Fdry Co.....Detroit, Mich.
Castings, Iron and Steel
Am. Brake Shoe & Fdry. Co..Mahwah, N.J.
Castings, Malleable
Galt Malleable Iron Co.... .....Galt, Ont.
Pratt & Letchworth Co....Brantford, Ont
Taylor & Arnold. ....Montreal.
Castings, Manganese Steel
Canadian Steel Foundries Ltd ..Montreal.
Lumen Bearing Co. ....West Toronto, Ont.
Castings, Steel
American Vanadium Co....Pittsburgh, Pa.
Canada Iron Corporation, Ltd ...Montreal.
Canadian Steel Foundries, Ltd...Montreal
W. Kennedy & Sons, Ltd., Owen S'd, Ont
Pratt & Letchworth Co....Brantford, Ont
Titanium Alloy Mfg. Co....Pittsburgh, Pa
Catenary Materials
Ohio Brass Co. ....Mansfield, Ohio
Chains
B. J Coghlin & Co. ....Montreal
Circuit Breakers
Geo. C. Royce ....West Toronto, Ont.
Closets, Car
Duner Co. ....Chicago, Ill.
Coal
Nova Scotia S. & C. Co..New Glasgow, N.S
Compressors, Air
Allis-Chalmers-Bullock Ltd......Montreal
Canadian Rand Co. ....Montreal.
The Holden Co., Ltd., ...Montreal.
Concrete Mixers and Rock Crushers
F. H Hopkins & Co. ....Montreal.
Mussens, Ltd. ....Montreal.
Contractors' Supplies
American Hoist & Der. Co. St. Paul, Minn.
F. H. Hopkins & Co. ....Montreal.
Rice Lewis & Son .. ..Toronto.
Russel Wheel & Fdry Co.. .Detroit, Mich.
Western Wheeled Scraper Co...Aurora, Ill.
Conveyors, Coal and Ash
Babcock & Wilcox, Ltd. ....Montreal.
Copper
C. H. Besley Co. ....Chicago, Ill
Copying Presses
James Smart Mfg. Co......Brockville, Ont.
Couplers, Car and Locomotive
Canadian Car & Foundry Co.....Montreal
Canadian Steel Foundries Ltd...Montreal
McConway & Torley Co... Pittsburgh, Pa.
Ohio Brass Co. ....Mansfield, Ohio.
Taylor & Arnold ....Montreal.
Couplers, Steam
Consolidated Car Heating Co. Albany, N.Y
Cranes
Brown Hoisting Machinery Co..Cleveland.
Northern Engineering Wks..Detroit, Mich.
Cranes, Electric
Babcock & Wilcox ....Montreal.
Dominion Bridge Co. ....Montreal.
Mussens, Ltd ....Montreal
Northern Engineering Wks.. Detroit, Mich.
Cranes, Locomotive
American Hoist & Der Co..St. Paul, Minn.

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Preston Car & Coach Co. ...Preston, Ont.
Cuts
Acton Burrows, Limited ....Toronto.
Cylinders
American Vanadium Co....Pittsburgh, Pa.
Titanium Alloy Mfg. Co....Pittsburgh, Pa.
Derricks
American Hoist & Der. Co..St. Paul, Minn.
M. Beatty & Sons, Ltd. ....Welland, Ont.
Mussens, Ltd. ....Montreal.
Derricks, Car
American Hoist & Der. Co..St. Paul, Minn.
Diaphragms, Vestibule
Guilford S. Wood ....Chicago, Ill.
Dies
Butterfield & Co. .... Rock Island, Que.
A. B. Jardine & Co. ....Hespeler, Ont.
Ditchers
American Hoist & Der. Co..St. Paul, Minn.
M. Beatty & Sons, Ltd. ....Welland, Ont.
Diving Outfits
John Date ....Montreal.
Mussens, Ltd. ....Montreal.
Doors, Steel Rolling
Mussens, Ltd. ....Montreal.
Door Signs
Acton Burrows, Limited ....Toronto.
Draft Gear
The Holden Co., Ltd., ...Montreal.
McCord & Co., ...Chicago, Ill.
Standard Coupler Co. .....New York City
T. H. Symington & Co. ....Baltimore, Md.
Draughtsmen's Supplies
John A. Hart & Co. ....Winnipeg.
Dredges
M. Beatty & Sons, Ltd. ....Welland, Ont.
Polson Iron Works, Ltd. ....Toronto.
Drills, Air
Canadian Rand Co. ....Montreal.
Drills, Radial
London Machine Tool Co., Ltd.Hamilton.
Dry Goods
The Hudson's Bay Co. ....
Dump Cars, Contractors'
Dominion Equip. & Supply Co..Winnipeg.
F. H. Hopkins & Co. ....Montreal.
Western Wheeled Scraper Co..Aurora, Ill.
Dynamos
Northern Electric & Mfg. Co.....Montreal.
Dynamo and Electric Castings
Am. Brake Shoe & Fdry. Co..Mahwah, N.J.
Economizers
Babcock & Wilcox ....Montreal.
Electric Apparatus
Allis-Chalmers-Bullock Ltd......Montreal.
Chapman & Walker, Ltd. ....Toronto.
Northern Electric & Mfg. Co.....Montreal.
Electric Car Route Signs
Acton Burrows, Limited ....Toronto.
Preston Car & Coach Co., Ltd....Preston.
Electric Light Plant
Allis-Chalmers-Bullock, Ltd. ....Montreal.
Elevators, Grain
John S. Metcalf Co. ....Montreal.
Enameled Iron Signs
Acton Burrows, Limited ....Toronto.
Engines, Automatic
Polson Iron Works, Ltd. ....Toronto.
Robb Engineering Co., Ltd., Amherst, N.S.
Russel Wheel & Fdry Co.....Detroit, Mich.
Engines, Corliss
Allis-Chalmers-Bullock, Ltd. ....Montreal.
Robb Engineering Co., Ltd., Amherst, N.S.
Engines, Gas
Allis-Chalmers-Bullock, Ltd. ....Montreal.
Engines, Gasolene
Canadian Fairbanks Co., Ltd....Montreal.
Ontario Wind Engine & Pump Co. Toronto
Engines, Hoisting
Allis-Chalmers-Bullock, Ltd. ....Montreal.
American Hoist & Der. Co..St. Paul, Minn.
M. Beatty & Sons ....Welland, Ont.
Dominion Equip. & Supply Co...Winnipeg.
Polson Iron Works, Ltd. ....Toronto.
Russel Wheel & Fdry. Co. .Detroit, Mich.
Engines. Stationary and Marine
Polson Iron Works, Ltd. ....Toronto.
Robb Engineering Co., Ltd., Amherst, N.S.
Engines, Stationary, Appliances
Nathan Manufacturing Co. ....New York.
Engines, Steam
Allis-Chalmers-Bullock, Ltd. ....Montreal.
Engineers, Consulting
Alfred Lovell, ...Philadelphia, Pa.
Explosives
Curtis's & Harvey (Canada) Ltd..Montreal
Express Office Signs
Acton Burrows, Limited ....Toronto.
Ferro-Vanadium
American Vanadium Co. ..Pittsburgh, Pa.
Files
Nicholson File Co. ......Port Hope, Ont.
Fire Extinguishers
Miller Chemical Engine Co...Chicago, Ill.
Flags
The Hudson's Bay Co. ....

Flour
The Hudson's Bay Co. ....
Forgings
American Vanadium Co. ..Pittsburgh, Pa.
Canadian Car & Foundry Co.....Montreal.
Crossen Car Mfg. Co........Cobourg, Ont.
Nova Scotia S. & C. Co..New Glasgow, N.S.
Steel Co., of Canada, Ltd., Hamilton, Ont.
Titanium Alloy Mfg. Co....Pittsburgh, Pa.
Foundry Appliances
C. H. Besly Co. ....Chicago, Ill.
Ontario Wind Engine & Pump Co. Toronto
Frogs
Can. Ramapo Iron Wks. ...Niagara Falls.
Johnson Wrecking Frog Co..Cleveland, O.
Furnaces, Corrugated
Continental Iron Works....Brooklyn, N.Y.
Furnaces, Oil
Railway Materials Co. ....New York.
Fuse Batteries
Curtis's & Harvey (Canada) Ltd..Montreal
Fuse Detonators
Curtis's & Harvey (Canada) Ltd..Montreal
Fuses, Electric
Curtis s & Harvey (Canada) Ltd..Montreal
Gaskets
The Holden Co., Ltd., ...Montreal.
McCord & Co. ....Chicago, Ill.
Gates, Crossing
The N. L. Piper Ry Supply Co....Toronto.
Whyte Railway Signal Co. ......Toronto.
Gauge Cocks
Nathan Manufacturing Co.....New York.
Ohio Brass Co. ....Mansfield, Ohio.
Gauges, Locomotive
Taylor & Arnold ....Montreal.
Gauges, Water
Detroit Lubricator Co. ....Detroit, Mich.
Nathan Manufacturing Co.....New York.
Ohio Brass Co. ....Mansfield, Ohio.
Gears
American Vanadium Co. ..Pittsburgh, Pa.
Titanium Alloy Mfg. Co....Pittsburgh, Pa.
Gears, Machine Cut
Corbet Fdry Co., Ltd. ..Owen Sound, Ont.
Generators, Electric
Dorner Railway Equip. Co....Chicago, Ill.
Northern Electric & Mfg. Co. ..Montreal.
Graders and Ditchers
Western Wheeled Scraper Co. Aurora, Ill.
Grates, Shaking
Babcock & Wilcox ....Montreal.
Polson Iron Works, Ltd. ....Toronto.
Grinders, Disc, for Wood and Metal
C. H. Besly Co. ....Chicago, Ill.
Groceries
The Hudson's Bay Co. ....
Hammers, Cast Steel
Am. Brake Shoe & Fdry Co.Mahwah, N.J.
James Smart Mfg. Co. ....Brockville, Ont.
Handcars
Canadian Fairbanks Co., Ltd....Montreal.
Crossen Car Mfg. Co. ......Cobourg, Ont.
Dominion Equip. & Supply Co..Winnipeg.
F. H. Hopkins & Co. ....Montreal.
Mussens, Ltd. ....Montreal.
Rice Lewis & Son ....Toronto.
Whyte Railway Signal Co. ......Toronto.
Hardware
The Hudson's Bay Co. ....
Rice Lewis & Son ....Toronto.
Headlights
Commercial Acetylene Co. ......Toronto.
The N. L. Piper Ry Supply Co....Toronto.
Pyle National Elec. Headlight Co. Chicago.
Headlinings
Crossen Car Mfg. Co. ......Cobourg, Ont.
Heaters, Feedwater
Robb Engineering Co., Ltd..Amherst, N.S.
Heating, Car
Canadian Gold Car H'g & L'g Co.Montreal.
Consolidated Car H'ting Co...Albany, N.Y.
Safety Car Heating & L'ting Co.New York.
United States Light & Heat Co..New York.
Hoists
Dake Engine Co. .....Grand Haven, Mich.
Hoists, Electric
American Hoist & Der. Co. St. Paul, Minn.
Hoists, Pneumatic
Taylor & Arnold ....Montreal.
Hooks
Steel Co. of Canada, Ltd..Hamilton, Ont.
Hoppers, Car, Wet or Dry
Duner Co ....Chicago, Ill.
Hose, Air Brake and Steam
Guilford S. Wood ....Chicago, Ill.
Hydrants
Canadian Fairbanks Co., Ltd....Montreal.
Kerr Engine Co. ....Walkerville, Ont.
Hydraulic Equipment
R. D. Wood & Co.......Philadelphia, Pa.
Illustrations.
Acton Burrows, Limited ....Toronto.
Injectors
T. McAvity & Sons ....St. John, N.B.
Nathan Manufacturing Co.....New York.
Inspections
R. W. Hunt & Co. ....Montreal.
Alfred Lovell ....Philadephia, Pa.
Insulators, Porcelain
Ohio Brass Co. ....Mansfield, Ohio.
Insurance, Accident
Can. Casualty & Boiler Ins. Co....Toronto.
Canadian Ry. Accident Ins. Co.....Ottawa.
Imp. Guarantee & Acc. Ins. Co....Toronto.
London Guar, & Accident Co. Ltd.Toronto.

Insurance, Boiler
Can. Casualty & Boiler Ins. Co....Toronto.
Interlocking Plant and Signals
Canadian Steel Foundries, Ltd...Montreal.
Saxby & Farmer, Ltd. ....Montreal.
Iron and Steel Bars
Steel Co. of Canada, Ltd..Hamilton, Ont.
Iron, Pig
Nova Scotia S. & C. Co..New Glasgow, N.S.
Iron Signs
Acton Burrows, Limited ....Toronto.
Jacks
Canadian Fairbanks Co., Ltd....Montreal.
Canadian Steel Foundries, Ltd...Montreal.
Dominion Equip. & Supply Co..Winnipeg.
H. & E. Lifting Jack Co..Walkerville, Ont.
F. H. Hopkins & Co. ....Montreal.
Mussens, Ltd. ....Montreal.
A. O. Norton ....Coaticook, Que.
James Smart Mfg. Co. ....Brockville, Ont.
Japans
The Dougall Varnish Co., Ltd....Montreal.
Journal Bearings
Canadian Bronze Co. ....Montreal.
Crossen Car Mfg. Co. .....Cobourg, Ont.
Kerr Engine Co. ....Walkerville, Ont.
Jas. W. Pyke & Co. ....Montreal.
Journal Boxes
The Holden Co., Ltd. ....Montreal.
McCord & Co. ....Chicago, Ill.
Lager Beer ,Etc.
E. L. Drewry ....Winnipeg.
Lagging and Covering, Locomotive
Can. H. W. Johns-Manville Co., Ld. Toronto
Taylor & Arnold ....Montreal.
Lamps, Arc
Northern Electric & Mfg. Co.....Montreal.
Lamps, Gas
Commercial Acetylene Co., ... Toronto.
Lamps, Incandescent
Canadian Westinghouse Co..Hamilton, Ont.
Lamps and Lanterns
The Hudson's Bay Co. ....
The Hiram L. Piper Co. ....Montreal.
The N L. Piper Ry Supply Co....Toronto.
Lamps, Switch
The N. L. Piper Ry Supply Co....Toronto.
Lathes
John Bertram & Sons Co. ....Dundas, Ont.
Lighting, Buoy
Blau-Gas Co. of Canada, Ltd....Montreal.
International Marine Signal Co.....Ottawa.
Walter MacLeod & Co. ......Cincinnati, O.
Safety Car Htg. & Ltg. Co....New York.
Lighting, Car
Blau-Gas Co. of Canada, Ltd....Montreal.
Canadian Gold Car H'g & L'g Co.Montreal.
Commercial Acetylene Co. ....Toronto.
Safety Car Heating & Ltg. Co..New York.
United States Light & Heat Co..New York.
Lighting, Signal
Commercial Acetylene Co. ....Toronto
Lights, Contractors' and Wrecking
F. H. Hopkins & Co. ....Montreal.
Walter McLeod & Co. ......Cincinnati, O.
Mussens, Ltd. ....Montreal.
Line Material
Ohio Brass Co. ....Mansfield, Ohio.
Locomotives, Compressed Air
Baldwin Locomotive Works...Philadelphia.
Canadian Locomotive Co....Kingston, Ont.
International Marine Signal Co.....Ottawa.
Montreal Locomotive Works .....Montreal.
Locomotives, Contractors'
Dominion Equip. & Supply Co..Winnipeg.
Locomotives, Electric
Baldwin Locomotive Works...Philadelphia.
Montreal Locomotive Works .....Montreal.
Locomotives, Logging
Baldwin Locomotive Works...Philadelphia.
Canadian Locomotive Co....Kingston, Ont.
Locomotive, Rack
Baldwin Locomotive Works...Philadelphia.
Canadian Locomotive Co....Kingston, Ont.
Montreal Locomotive Works .....Montreal.
Locomotives, Steam
Baldwin Locomotive Works...Philadelphia.
Canadian Fairbanks Co., Ltd....Montreal.
Canadian Locomotive Co....Kingston, Ont.
J. T. Gardner ....Chicago, Ill.
Montreal Locomotive Works .....Montreal.
Vulcan Iron Works .....Wilkesbarre, Pa.
Lorries, Tracklaying
Crossen Car Mfg. Co. ....Cobourg, Ont.
F. H. Hopkins & Co. ....Montreal.
Lubricators
Detroit Lubricator Co. ......Detroit, Mich.
McCord & Co. ....Chicago, Ill.
Nathan Manufacturing Co.....New York.
Taylor & Arnold ....Montreal.
Lumber
Imperial Timber & Trading Co. Vancouver.
Parry Sound Lumber Co. ....Toronto.
Machines and Plant, Contractors'
American Hoist & Derrrick Co. ..St. Paul.
M. Beatty & Sons ....Welland, Ont.
R. M. Burns & Co. ....Chicago, Ill.
Canadian Fairbanks Co. Ltd.....Montreal.
J. T. Gardner ....Chicago, Ill.
F. H. Hopkins & Co. ....Montreal.
Mussens, Ltd. ....Montreal.

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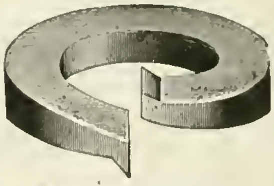

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The Railway and Marine World

November, 1911.

LOCOMOTIVE BOILER CONSTRUCTION AT THE CANADIAN LOCOMOTIVE CO.'S WORKS.

By Frederick H. Moody B.A.Sc.

Probably every reader of this article if he stops but a moment to consider, will agree that of all the branches of the metal working industries, less change has taken place recently in the art as applied to boiler making than to any other branch. The tools, with but few exceptions, are almost exactly the same as those developed years ago in old country naval yards for ship-plate and marine boiler work. The one prominent exception to this lack of development is that of the advent of the pneumatic tool as a handy and indispensable adjunct of the boiler shop for rivetting and chipping purposes.

Various reasons may be assigned to this seeming lack of improvement, the most prominent of these being the fact that plate-working machinery reached a high stage of perfection years ago, leaving less room for improvements—different from the case of machine tools where the introduction of high-speed steels practically revolutionized the industry.

The outcome of the few changes in boiler shop equipment has been that boiler shops in general have had a marked tendency to deteriorate from every standpoint, with the possible exception that quality of production has probably remained at the same steady point. The high quality of work which many of these old-time shops were capable of producing, is worthy of particular note.

Within the past few years, some remarkable changes may have been noticed. Throughout Canada, nearly all the leading boiler-making plants have been entirely rebuilt on a larger scale. From a production equipment standpoint, the shops are much the same as ever, the big change occurring in the layout, and general facilities for the expeditious handling of the material in a more systematic manner, the routing of the boiler through the shop being more or less automatic, making possible much more rapid production.

Such is the case of the Canadian Locomotive Co. at Kingston, Ont. This company, which has always been noted for the high quality of its product, was, until within the last couple of years, handicapped in the rapid production of work by an old-fashioned shop, which, while well equipped, was not designed according to a Taylor or any other system where rapid and at the same time efficient, production is the principal feature.

The demand for locomotives having increased to such an extent as to make the old plant inadequate, it was finally decided to build a new shop of the latest and most modern design, equipped with the very best machinery and appliances of all kinds, it being necessary to maintain the high reputation for quality while at the same time decreasing the cost of the output.

Description of Plant.

The Canadian Locomotive Co.'s plant is located on the Kingston waterfront. Previous extensions to other departments of the business having absorbed most of the available property, a wide pier was built out into the water, the outer end of the new locomotive boiler shop being located on this made land.

A comprehensive view of the main part of the boiler shop is given in fig. 1, a view looking from the outer end of the shop toward the main portion of the works. The section shown in the illustration is 380 by 60 ft., with a height of 35 ft., and is of the typical all-steel, trussed-roof shop construction, excellent lighting being obtained from very large windows. The blank part of the wall is made up of wood sheathed outside with tin, presenting an imitation brick surface. To the right of the part shown, there is a flanging shop, 48 by 45 ft., built on as an addition. This shop forms a part of the boiler shop with no intervening wall, and is of the lean-to type of construction.

George Bury,
Vice President and General Manager, Western Lines, Canadian Pacific Railway.

The boiler shop proper is supplied with two 35-ton Shaw electric cranes as indicated, these being more than sufficient for all needs. They are of sufficient capacity to lift the heaviest boiler and carry it bodily down the shop to the large hydraulic rivetter at this end of the shop, the photograph, fig. 1, being taken from the platform of this rivetter. It is of the Chambersburg Eng. Co.'s manufacture, with a throat depth of 14 ft. and 4 ft. 6 in. gap, and having a controlled range of pressures up to 225 tons for the large size rivets. The working pressure is about 100 lbs. Alongside is located the pump and accumulator, both being sufficiently large to supply a hydraulic flanging press and small hydraulic riveter as well. The latter is located alongside the large one.

To the left, just out of the picture, there is a twin punch, each punch being supplied with a small jib, one of which shows in the photograph. Along the left wall, just visible in the picture, there is a large plate-trimming planer The immediate foreground is the lay-out floor. Along the right wall, there are a couple of radial drills for tube-sheet work, and also a flange punch. Along the left wall there are a couple of cold cut-off saws. One of the finest pieces of the equipment is the large Hills & Jones roll in the middle foreground. This has rolls 22 ins. diameter, capable of bending plate up to 1½ in. and is driven by a 60 h.p. motor. It is of a modern design, capable of bending plate from the very edge. The construction consists of two rolls in vertical ways, between which the plate passes, with a third or bending roll set in ways at an angle to the perpendicular. The nearness of this third to the other rolls determines the curve. But few of this type of roll are to be seen in boiler shops. The background in the photograph is the erecting floor.

The flanging shop addition already mentioned, contains, as shown in fig. 2, a large flanging press, plate-heating furnace and flanging forge.

Construction Work.

The main feature of this article, i.e., the actual construction practice as followed by this company under the supervision of W. J. Robinson, Boiler Foreman, is next to be dealt with. As the initial step, the various plates entering into the boiler make up, are laid out in that section of the shop in the immediate foreground in fig. 1. On being laid out, they are all brought to the near end of the shop by the cranes to a convenient position for the jibs at the punches, which are located to the immediate left as before mentioned, to pick up. All plate work that has any flanging, is carried across to the right by the crane, and deposited in the flange shop. All other plate work is carried back down the shop to the edge-trimming planer.

Consider first the flanging operations: The piece operated on in fig. 2, is the front tube sheet. These sheets come from the mill in circular form, so that up to this stage they require no work in the boiler shop. The heating furnace and arrangement for transferring to the flanging press are well designed for quick work. The furnace doors, operat-

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ed by air, are controlled by levers located with the flanging press levers to the rear of that machine convenient for the operator. The heated plate, pulled out by hooks from the furnace on to a simple metal stand, is lifted with special hoop hooks by an air hoist on an I-beam track, running across to the flanging press. The plate is here dropped on to a couple of rollers, and shoved on to the lower clamping plate of the press. This plate is then raised by the operator, lifting the tube sheet up and clamping it to the upper clamping plate, the male part of the die, secured to the upper tube of the press by bolsters. The female part of the die, supported on bolsters on the lower table, is forced up over the projecting edge of the tube sheet by the whole lower table being raised; this forms the flange. The table and clamping plate are then lowered, plate removed, and the operations repeated. The action being familiar to all, requires no further description. The flanged edge and tube sheet are next laid out and the sheet taken first to the flange puncher and then to a radial drill to have the tube holes drilled.

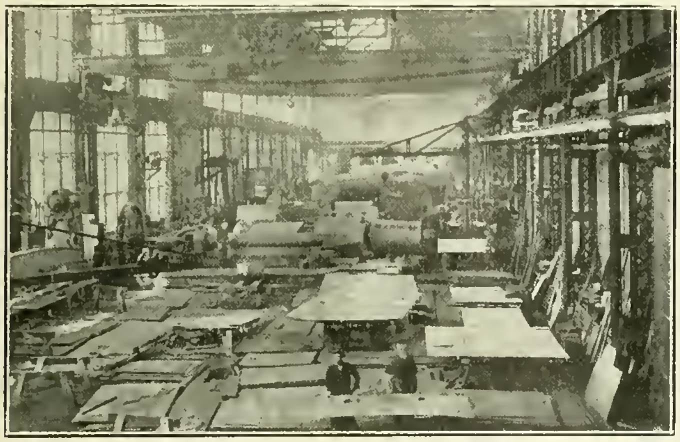

Fig. 1—View of Boiler Shop, looking from Outer End towards the Assembling and Erecting Floors.

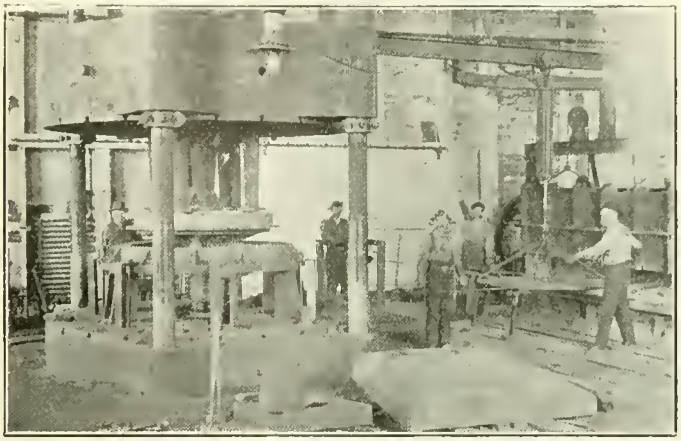

Fig. 2—Arrangement of Heating Oven and Hydraulic Flanging Press.

The art of using the flanging press for all kinds of flanging work has been developed to a high degree, a wide range of dies having been made for flanging up various parts of the boiler, such as tube sheet, face sheet, back sheet, back tube sheet, throat sheet, steam dome and the various pipe flanges. It is a question that only the condition of the order can decide, the question of whether or not the order contains enough locomotives to make it pay to make the necessary pair of dies for the press. This question has been settled so often in the affirmative that a large collection of dies for many parts on boilers of varying sizes, have been made from time to time.

Quite a number of sizes of dies have been made for hydraulically flanging the sides of the throat sheet. Where this is possible, the flange can be made in one heat. In the case of the throat sheet shown in fig. 3, which is one of an order of six boilers, it was considered inadvisable to make hydraulic dies, so only a single block of the requisite shape is made for the flanging operation. The sheet, originally flat, trimmed to the correct size, after being laid out to be punched for the barrel-flange fit, is removed to the punch for this purpose. From there it goes to the rolls, where the bends are given to it, and it is then brought on to the flanging shop. One edge at a time is heated in a flange fire, and in from four to five heats the flange is formed, all the work being done by the sledge hammer. In fig 3, the plate is shown fresh from the flange fire in the background, after the third heat. The sheet is brought across by a crane running on an I-beam. It is lowered on to the flange block and located by pins dropped into two previously laid out and punched holes in the sheet, which register with similar holes in the block. The man to the right is shown inserting one of these pins. The clamp beam is quickly lowered by knocking out supporting end blocks, and tightening down the nuts on the guiding bolts. The four men in shifts of two, gradually hammer down the flange as desired. The flange for the barrel fits is similarly formed when no hydraulic dies exist.

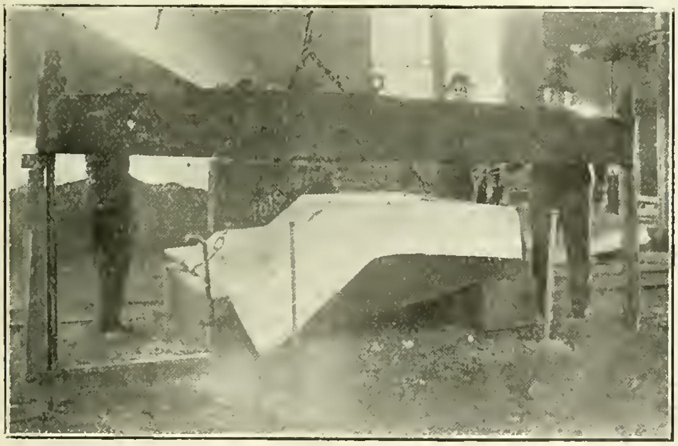

Fig. 3—Side-flanging a Throat Sheet by Hand on a Formed Flanging Block.

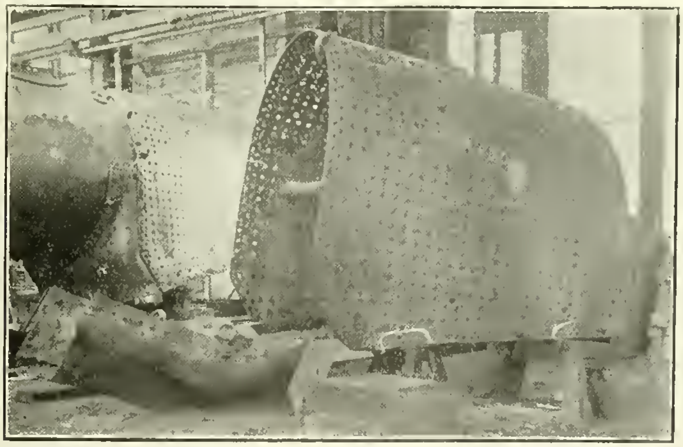

Fig. 4—Operation of Fitting Throat Sheet and Face Sheet Corners to Mud Ring.

The various component sheets of the boiler that require bending, after being laid out and punched, are taken to the rolls before referred to, and bent to the desired diameter. In the case of the barrel, the various straight and tapered courses after being thus punched and rolled, are fitted together on the floor in their proper relation to each other and held together as a unit by bolts in the circular seams and along the lapped seams. The front tube sheet is also bolted up into this barrel section. When thoroughly bolted together the whole unit is carried down the shop to the hydraulic rivetter, where the 20-ton hydraulic crane over the rivetter raises the barrel into position for rivetting, all the barred rivets being thus inserted. This process of forming the barrel is often slightly varied, depending on the way the different parts are advanced. The different courses may be independently butt strapped, and these courses then rivetted together. The process is but slightly affected by such changes in the routine.

Every plate as it leaves the rolls, is carried further on down the shop. Such is the case of the outer wrapper shown in fig. 4. The operations carried on in this position, are those of fitting the corners of the throat sheet and face sheet to the mud ring. The mud ring finished and drilled in the machine shop, is placed on low horses, and the outer wrapper bolted to it as indicated. The throat sheet, placed on the ground in front of the wrapper, is swung up into position with regard to mud ring and wrapper, and clamped there. The throat sheet has no holes in it up to this point, the reason for which will be explained presently. An oil torch directed against the corner of throat sheet where it fits over the mud ring, heats it to a working heat. This is done that the throat sheet may be worked directly into the exact shape on the mud

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ring over which it is to fit. Both corners are similarly treated, insuring a close fit. The face sheet, which, after flanging, is laid out and punched, is bolted into location on the mud ring and also tied to the latter by working hot.

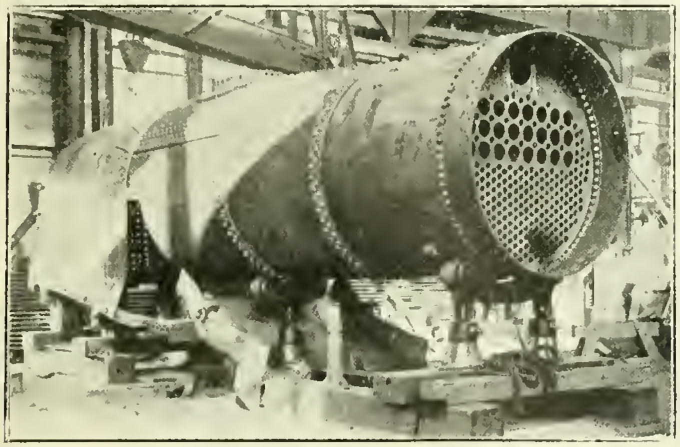

Fig. 5—Assembling Stand for Accurately Locating the Boiler Units.

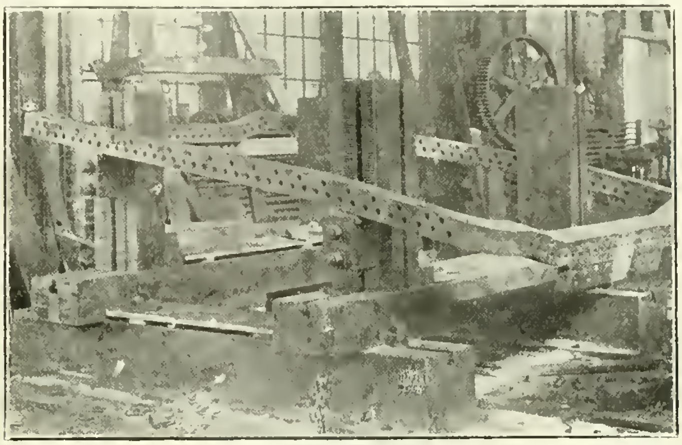

Fig. 6—Detail View of Rear Part of Stand which supports Mud Ring.

The next step contains what is probably the most ingenious device in the whole process of manufacture and assembly. This device is the assembling stand shown in fig. 5, the next stand down the shop from that in fig. 4. The barrel completely rivetted up, is horizontally located on the two roller stands shown in fig. 5. These stands are vertically adjustable,. being constructed like screw jacks. Both these stands are rigidly located on a concrete base, both having lengthwise adjustment and the front one crosswise as well. These adjustments accommodate all sizes.

The rear section of the assembling stand of fig. 5, is best shown in the closer view, fig. 6. Two stands parallel with the boiler centre line on a concrete base, carry longitudinally adjustable cross-beams on which are vertical supports, adjustable crosswise. Each of these four supports carries a vertically adjustable bracket. Through the various adjustments, the mud ring may be located in its exact location with regard to the previously located boiler barrel, both vertically and crosswise. The outer wrapper is then slipped over the mud ring and bolted to it. The wrapper and barrel are then dowelled and bolted together. The advantage of this type of assembling stand is that once the first boiler is properly adjusted, the following boilers on the same order will slip into place without further adjustment of the device, dropping the parts into the same locations as those previously occupied by the preceding boiler parts.

The barrel, wrapper and mud ring are thus far exactly located with regard to each other. Customarily in locomotive boiler practice, the throat sheet, like all the other parts, is independently laid out from scale. The practice of this company is different in this particular. The multiplicity of joints occurring around the throat sheet, and the fact that the throat sheet is an awkward piece to lay out accurately to scale, all tend to introduce errors, so that if each were independently made, punched and rivetted together without further fitting, the boiler might not line up properly. The method here used overcomes this. The blank throat sheet is slipped under the boiler on the stand, as shown in fig. 5, and fitted up in to its proper location with regard to its three joining members, and clamped in that location while the holes are laid out on it from the previously punched holes in the assembled pieces. The throat sheet thus laid out, is removed, punched and put back in location. The matched holes are then reamed as with all other joints.

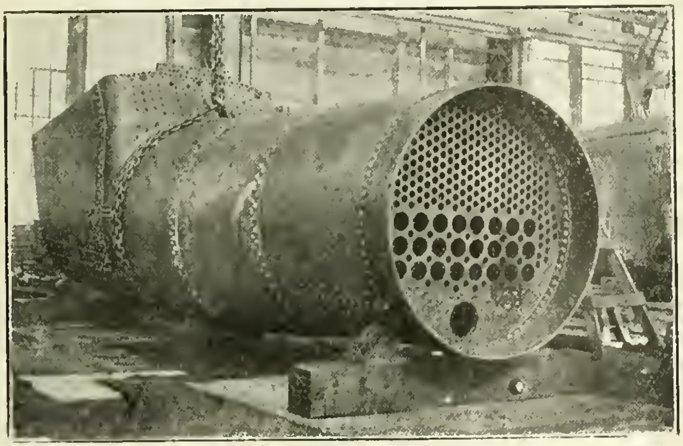

Fig. 7—Boiler on Stand after Face Sheet and Mud Ring are put in place.

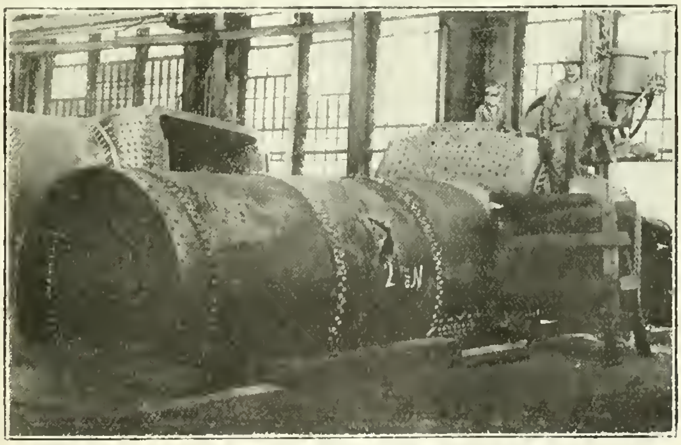

Fig. 8—Pit Stand where Mud Ring is Rivetted and Firedoor Opening Fixed.

The whole structure is then securely bolted together as a unit, when, after loosening from the mud ring, the barrel, wrapper and throat sheet are taken to the hydraulic riveter. This is as far as the hydraulic riveting can be carried, and is more than can commonly be obtained, the system of assembling making it possible.

The next step is that of putting the fire box in place. The boiler being through with the assemhling stand after hydraulic rivetting, is placed on the next stand, as in fig. 7. This stand consists of rollers secured to wooden beams, the latter resting on concrete bases. The firebox, previously assembled and rivetted up in the usual manner, is loosely slipped into position, the boiler meanwhile lying on its back in the stand. The next step is that of putting in the face sheet and rivetting around the outside seam. This is done on the same stand. From the narrowness of the water leg, this rivetting is rather difficult, but is accomplished with a pneumatic rivetting hammer and long holding-on block. The rollers make it very convenient, during this operation, turning the boiler to the most convenient location.

The boiler is then rolled on its back again and the mud ring slipped into place in the bottom of the water leg, and securely bolted all around. Fig. 7 shows all this completed.

The boiler is then lifted bodily to the next stand shown in fig. 8. This stand is similar to the last one, only to facilitate working, the whole is lowered into a shallow pit. Overhanging this and the next stand, there are two jib cranes. For this stand, the jib supports the air rivetter for rivetting the mud ring into place. In this same location, the firedoor is rivetted up. It frequently so happens that the fire-door projection for the back sheet does not fit the opening in the face-sheet, so that the oil heater is again impressed into service and the inner opening stretched out to fit the outer, when the two are rivetted together.

The boiler is now moved on to a stand similar to the one previous to the last, as indicated in fig. 9. In this position, all the staybolt holes are tapped by air motor, the staybolts screwed in, and the heads cut off by the air clipper shown at work in fig. 9, supported from a jib. The staybolts are then rivetted over with a hand hammer and finally gone over with an air hammer. In this lo-

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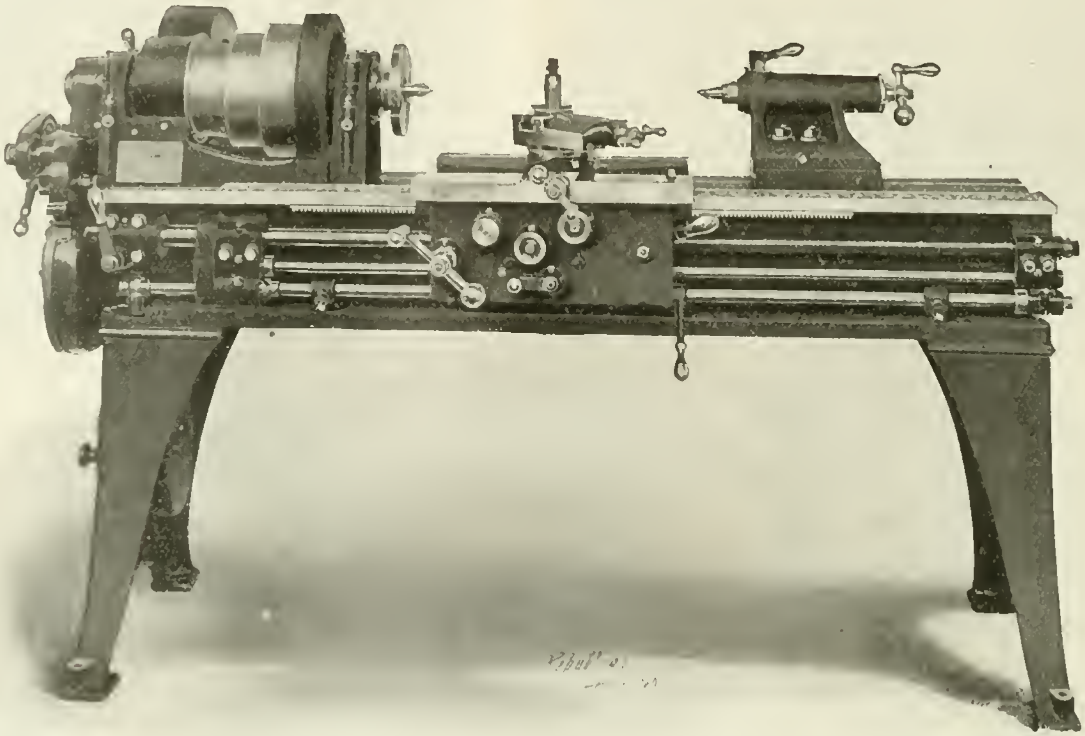

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cation, all the flexible staybolts are also inserted. Likewise many of the boiler trimmings, such as pipe flanges, are fitted on.

On the completion of these steps, the boiler is moved on to the next stand, which consists of two wooden horses. In this stand, the boiler is kept in a vertical position. Here, the smoke-box is rivetted on, smoke-box trimmings added, tubes inserted and beaded and the safety holes drilled in the staybolts in the manner indicated in fig. 10. The device for this consists of two hoop structures over the firebox with a cross piece between, against which the breast drill bears.

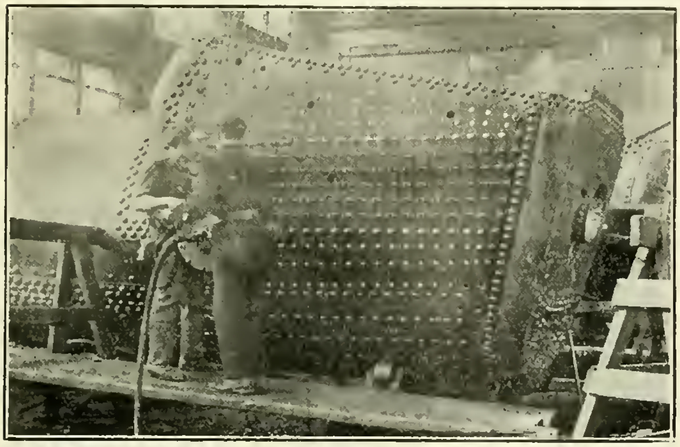

Fig. 9—Stand where the Boiler receives all the Staybolt Operations.

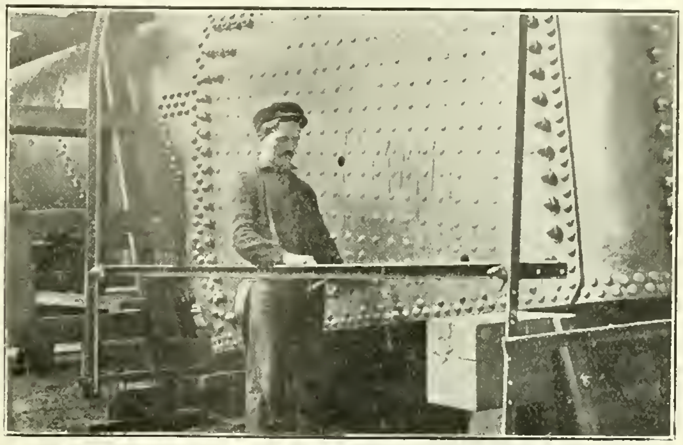

Fig. 10—Drilling Safety Holes in Staybolts with Simple Stand.

The boiler is now completed and is moved on to the next, which is the testing stand. Here all the pipe fittings and connections are attached, and the boiler subjected to a specified hydraulic pressure. This pressure is obtained by a powerful injector.

This end of the shop where the boiler is now located, is next to the erecting floor over to which it is now passed, to be built into the completed locomotive.

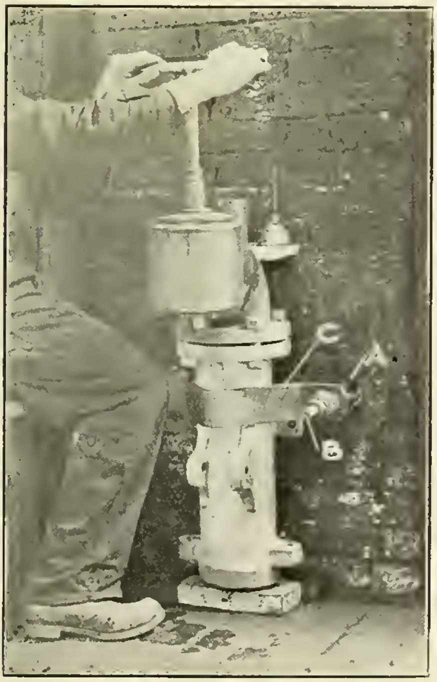

Fig. 1.—Throttle Valve Stand Clamp used in Valve Grinding.

SUMMARY.

What impressed the writer most particularly in the gathering of this information, was the system that entered at every step. The reader will, no doubt, have noticed how the material and finished pieces, seldom covered the same ground twice, everything gradually working from the lay out floor at the far end of the shop, up to the erecting floor end. By the adoption of some such system as the one just described the operating costs of a plant are very materially reduced, the handling of the material from point to point being reduced to a minimum. The management is to be congratulated on producing such a well designed shop.

◆

Steam Pipe Kinks at the Pere Marquette St. Thomas Shops.

The idea of securing the throttle valve stand pipe while grinding in the valve, as shown in fig. 1, is due to H. Francis, who uses it for the purpose mentioned in the Pere Marquette Rd. shops at St. Thomas, Ont.

Ordinarily, the standpipe is stood up in some corner while the valve seats are being ground, a rather shaky support being thus obtained. When the operator tests the tightness of the fit, he is often unable to determine whether the "wobble" is due to the valve seats not being correct, or to the insecurity of the standpipe. This difficulty led Mr. Francis to devise this simple clamp. Two eye-bolts A pass through the brick wall on one side of the erecting floor, and are securely bolted, the eyes being on the inner side. Each of these longer eye-bolts has a shorter one, B, which hold the vee-clamp C over the stand pipe, tightening it up against wooden vee-blocks on the wall, securely holding the pipe. The standpipe being thus properly secured, it is quite possible to trace any looseness to its only cause—the poor fit of the valve seats. In addition to this advantage, the standpipe is made much more convenient for working upon.

Another kink, as developed by Mr. Francis, for use on the steam pipe, is illustrated in fig. 2. The Pere Marquette, like a few other roads, instead of casting the ball joint of the smoke box steam pipe integral with the end of the steam pipe, finishes the end of the pipe flush, and grinds a piece to this surface, this ball-joint piece having the ball face to give the ball and socket contact. This detachable piece is the piece A in fig. 2. The operation shown is the grinding together of this piece to the face B of the steam pipe.

To facilitate operations, a hole has been cut into the floor, into which the pipe is set on end. This feature is worthy of notice, as the curved pipe when stood up elsewhere always proved a menace to the workman's limbs. In this hole, the pipe is properly secured. The principal point in the device is the chuck for holding the ball piece A. It consists of a steel plate C, to which three wooden jaws D are slidably attached; these may be secured in any desired position by the nuts shown, these nuts passing through a wooden jaw and holding plate. Radial movement of the bolt is permitted by slots in this piece C. To force out the jaws on the piece B, there is a cone-shaped piece on a bolt in the same line as the motor stem, but invisible in the photograph, being inside of the pipe bearing on the inside of the jaws. A thumb nut on the bolt tightens up the cone, forcing out the wooden jaws. This makes a much neater and handier rig than is commonly used for such jobs.

◆

J. Ellis Barker, writing in the Nineteenth Century, says, the average income of railway workers, exclusive of station masters, inspectors and clerks is $5.62 in England and Wales, $5.36 in Scotland and $4.46 in Ireland.

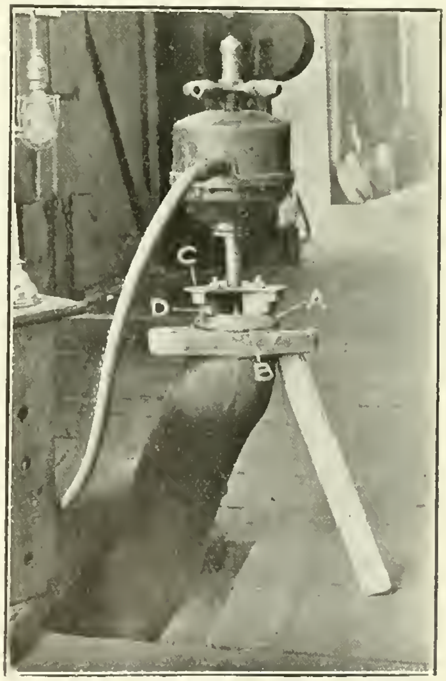

Fig. 2.—Grinding the Ball Seat in the Smoke-Box Steam Pipe.

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Canadian Pacific Ry. roadbed and station grounds	2.04
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	160.00
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In the M.C.R. car wheel department at St. Thomas, under Henry Batiste, Foreman, Blacksmith and Wheel Shop, with Neil Marple, as General Foreman, Car Department, there have been introduced several interesting little features in the operation of mounting car wheels on their axles. The practice of these shops in this particular, seems to be superior to that found in the majority of places, although all the parts of the equipment are standard in form.

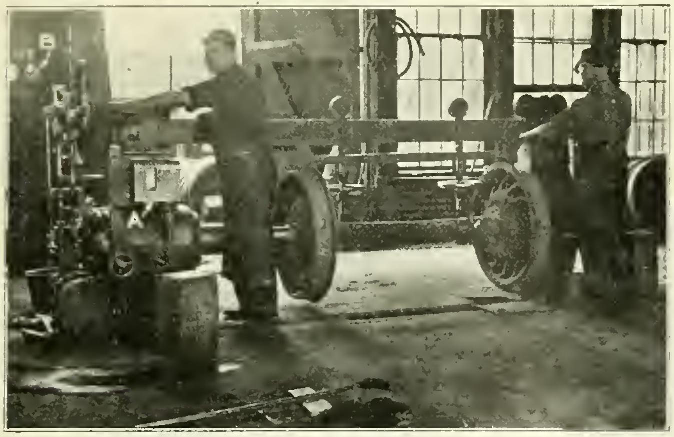


Fig. 1.—Car Wheel Press with Recording Pressure Gauge.

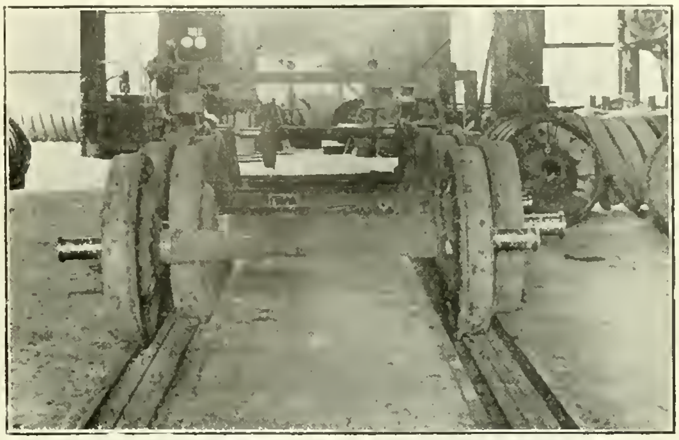


Fig. 4.—Track for Wheels Leaving the Press.

An ordinary hydraulic wheel press is employed for pressing on the wheel, the operation being shown in fig. 1. Two or three minor kinks in the loose assembling of the wheels and axle, before placing in the press were noticed, which, while good in themselves, are not of sufficient value to illustrate.

The main point of difference between standard practice and that employed by the M.C.R. in the actual pressing-on operation, is the introduction of a recording pressure gauge to the ram end of the press, as shown at A in fig. 1. In common with all railways, the M.C.R. has drawn up tables of pressures required for forcing on wheels whether cast iron, wrought iron or steel. These tables are given herewith; the maximum and minimum pressures for forcing the wheel on are listed, the variation between maximum and minimum being also tabulated. These figures for the maximum pressure are based on a fit pressure of 8 net tons per inch of diameter of the fit for cast iron, and 9 tons for cast steel and wrought iron. The diameter used is the mean of the two diameters given in the fit column.

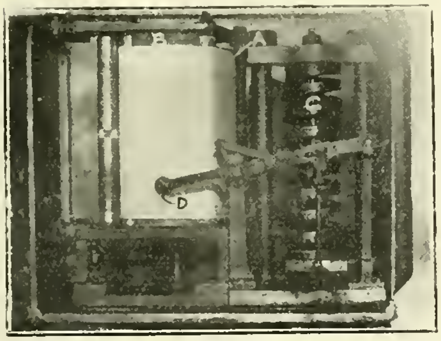


Fig. 2.—Mechanism of the Recording Pressure Gauge.

Before the use of the recording pressure gauge, the pressures were obtained by two indicating gauges arranged on the wall some distance away as shown at B, fig. 1. This gave no record of the forcing pressures used except those that were taken down for various points in the path of motion of the plunger while under pressure. To determine the degree of increment of pressure, or the uniformity with which the wheel is forced on, these noted pressures must needs be plotted if any correct knowledge of the quality of the fit be desired. If the resultant line be practically straight and inclined to the horizontal, it shows that the diameters of fit are uniform and that at no particular point of the forcing-on period does the load do anything but uniformly increase.

The recording gauge used is shown in fig. 2. A roll of section paper A passes over a plane surface B, winding from one roll to another, the paper receiving a motion to the left directly proportional to the movement of the car wheel over the axle hub during the forcing-on period, the movement being obtained through a string from the plunger attached to small gears in the bottom of the gauge drawing the paper between two knurled rollers. The arrangement on the machine is shown in fig. 3.

TABLE I.—Pressures for Cast Iron Hubs

Diameter of Fit. Inches	Forcing Pressures—Tons Minimum	Maximum	Variation
2½ - 2 15/16	12	22	10
3 - 3 7/16	16	26	
3½ - 3 15/16	20	30	
4 - 4 7/16	24	34	
4½ - 4 15/16	28	38	
5 - 5 7/16	31	42	11
5½ - 5 15/16	35	46	
6 - 6 7/16	38	50	12
6½ - 6 15/16	42	54	
7 - 7 7/16	45	58	13
7½ - 7 15/16	49	62	
8 - 8 7/16	52	66	14
8½ - 8 15/16	56	70	
9 - 9 7/16	59	74	15
9½ - 9 15/16	63	78	
10 - 10 7/16	67	82	

TABLE II Pressures for Cast Steel and Wrought Iron Hubs

Diameter of Fit. Inches	Forcing Pressures—Tons Minimum	Maximum	Variation
2½ 2 15/16	15	25	10
3 3 7/16	19	29	
3½ - 3 15/16	24	34	
4 - 4 7/16	28	38	
4½ - 4 15/16	33	43	
5 - 5 7/16	36	47	11
5½ 5 15/16	41	52	
6 6 7/16	44	56	12
6½— 6 15/16	49	61	
7 — 7 7/16	52	65	13
7½— 7 15/16	57	70	
8 8 7/16	60	74	14
8½— 8 15/16	65	79	
9 — 9 7/16	68	83	15
9½ — 9 15/16	73	88	
10 —10 7/16	77	92	

Referring again to fig. 2, the hydraulic pressure acting under the heavy coiled spring C compresses the latter, the movement being directly proportional to the hydraulic pressure applied. Through the system of multiplying levers the movement is conveyed in a straight line, vertical motion, to the pen D pressing against the paper. The relative movement of the roll of paper over the plane surface, and the upward movement of the pen, traces a line indicative of the pressures in the press for every point on the path of the wheel on to the axle. Such a curve is clearly shown in fig. 2. This card would indicate that the quality of the fit is good, as a straight line is traced. The sectioned paper being adapted to the gauge calibration, the exact pressure at any point may be directly read off. The paper as it passes on to the receiving roll, has the number of the car wheel written on it by the operator, thereby forming a record for future purposes. This makes it impossible for an imperfect fit to pass the foreman, the recording gauge curves being there for his inspection at any time.

The manner in which the gauge is connected up is indicated in fig. 3. The string A, passing over several small sheaves, gives a motion to the paper roll the same as that of the plunger. A ratchet attachment on the paper-roll-carrying drum, prevents the roll running back, all motion being ahead. A pipe, B, leading directly from the ram cylinder, delivers to a small cylinder C, in which the plunger compressing the

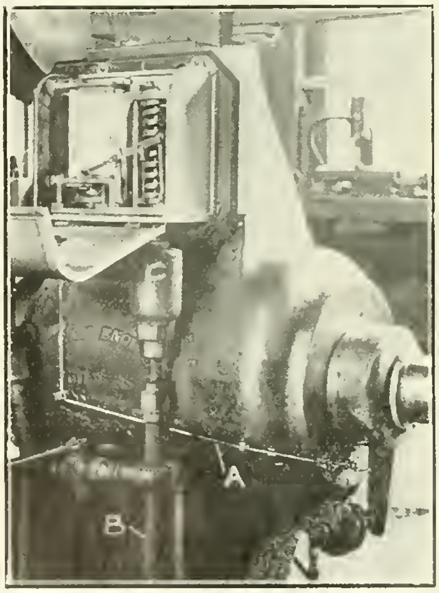
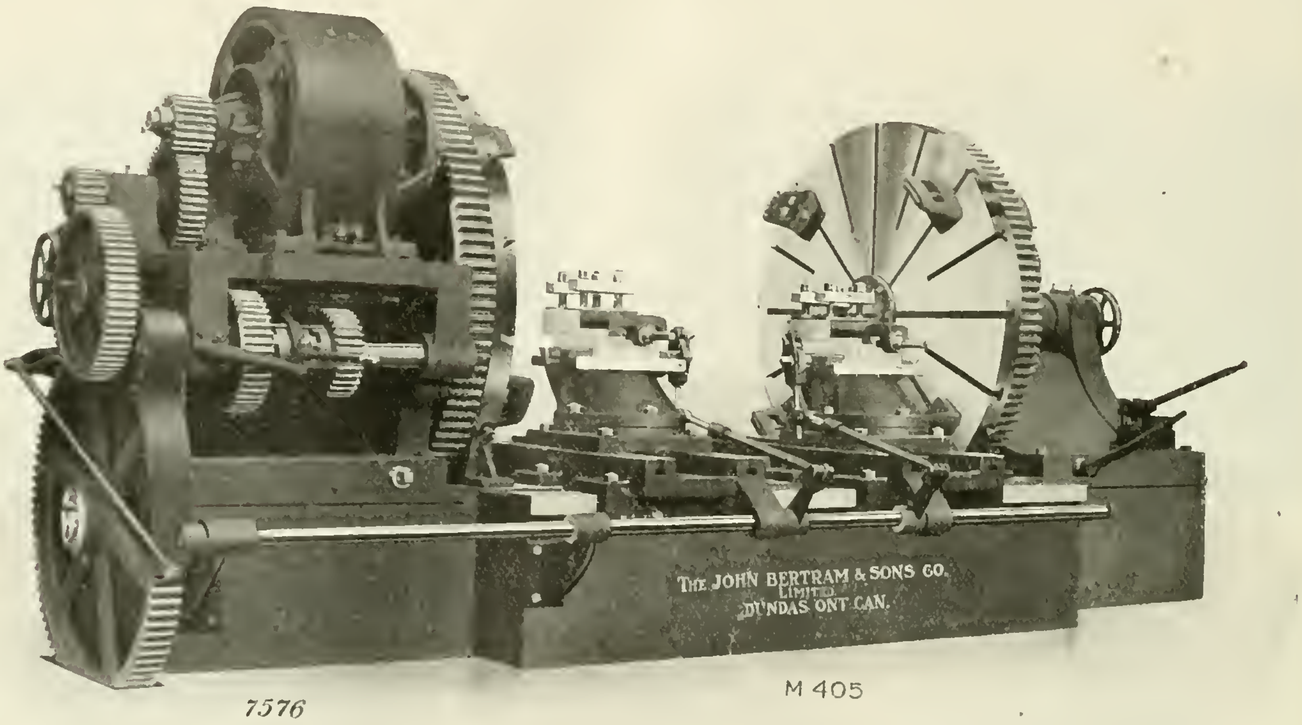


Fig. 3.—Recording Pressure Gauge Mounted on Press.

LOCOMOTIVE AND CAR SHOP MACHINERY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gauge spring is attached. The arrangement is very simple and complete.

As part of the wheel mounting operation considered as a whole, it is interesting to note the wheel storage arrangement for the mounted wheels and axles as they leave the press. This is shown in fig. 4. It is customary in car wheel shops to merely run the wheels out on to the floor on completion which does not allow of a very orderly or compact arrangement. In the M.C.R. arrangement, two standard tracks are laid as indicated, just sufficient space being allowed for the wheels to clear each other. This arrangement has a twofold advantage it is possible to store a large number of wheels in a smaller space on account of the overlapping; and the fact that the wheels are on rails makes it possible for the operators to merely place the completed wheel on the rail, give a slight shove, and it will run some distance of its own momentum, whereas, without a track, the workman would have to shove the wheel to the place where it would be required.

◆

Hot Punch for Hexagon Nuts at the Michigan Central St. Thomas Shops.

For the production of hexagon nuts under the drop hammer, John Sumner, the toolmaker at the M.C.R. shops at St. Thomas, Ont., has designed and built a die and necessary punches, all illustrated and described herewith. The idea was to construct a tool so that rectangular bar stock of a width equal to the hexagon flats, and a thickness equal to the nut thickness, might be employed. This has been successfully accomplished.

Fig. 1 shows the construction of the body and main part of the die, while figs. 2 to 4 show the main and auxiliary punches in the successive stages of operation; the same lettering is used in all four figures. As the illustrations show, the body consists of a steel block A, capped with a plate B, and having inserted in the bottom an annular die ring made of hardened steel. The block A is grooved the width and depth of the stock, the cap B forming a passage through which the stock is fed. Through both body A and cap plate B, there is a hexagonal hole D extending down to the inserted ring C.

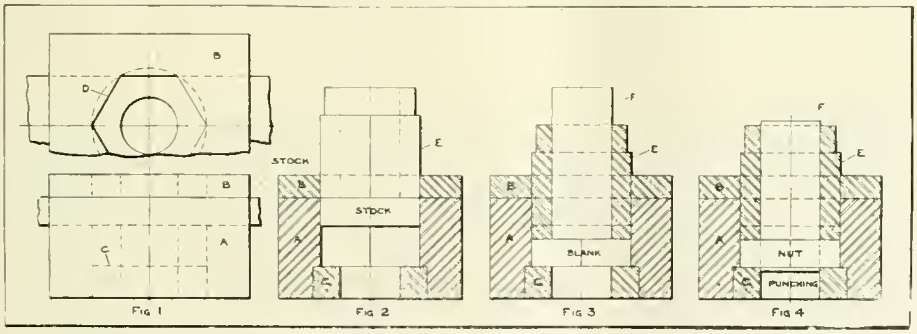


Fig. 1 to 4.—Hot Punch for Hexagon Nuts in Successive Stages of Operation.

Preparation for the first operation is shown in fig. 2. A hollow hexagon punch E, the size of the nut to be punched, is placed in the hexagon opening in the cover B on top of the stock. A blow from the steam hammer punches out a nut blank for the stock as indicated in fig. 3, the blank resting on the ring C. A round punch F, of the requisite size to leave stock for thread in the nut, is next placed in the corresponding opening in the hexagon punch E. Another blow from the hammer forces this blank centre punching through, leaving the finished forged nut as indicated in fig. 4. By removing the die ring C, which is made to fit loosely, the complete nut may be removed. The two punches are then removed, the ring C replaced, and the tool is ready for further use.

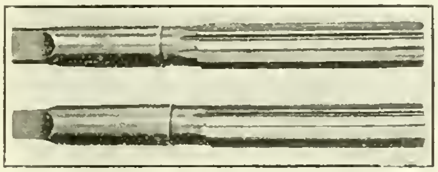
This tool is not as rapid as hot nut pressing machines, but is especially useful in shops where the quantity of work to be produced is not sufficient to require such a machine.

◆

Straight Reamers at the Michigan Central St. Thomas Shops.

While slightly foreign to railway work proper, the matter of tools and equipment is of sufficient importance to be considered at all times as bearing directly on the quality and quantity of production. In both classes can be considered the straight reamers made at the M.C.R. shops at St. Thomas, Ont., by John Sumner, the toolmaker.

Long tapered reamers with chip breakers have been known in the machine tool industry for years, and are, in fact, a standard product which can be purchased in the market. These M.C.R. reamers are on the same principle.



Thread-Ended Straight Reamers.

Straight reamers are often entered into their holes with difficulty, especially if much stock has been left for the reamer to remove—which is more often the rule than the exception in railway practice. Also, on account of the forcing necessary, the mouth of the hole tends toward an oval shape unless extreme care is exercised.

These reamers indicated in the illustration, are very simply made. They are merely the standard straight reamer with an ordinary flat top V-thread cut on the end of the reamer for a distance of upwards of an inch back from the point. This thread makes it possible to enter the hole easily, and the thread running up the reamer sufficiently far, straightens the reamer in the hole. By its use, it is a simple matter to make a perfect reamed hole.

◆

During August, 23 employes were killed, and 27 were injured in the course of their work in connection with Canadian railways. Of the fatal accidents, 10 were due to being run over, nine to collisions, two to falls from locomotives, one to being struck by a train, and one to a driver jumping from his locomotive and receiving fatal injuries.

Birthdays of Transportation Men in November.

Many happy returns of the day to—

J. O. Apps., General Baggage Agent, C.P.R., Montreal, born at Tara, Ont., Nov. 9, 1877.

A. B. Atwater, Assistant to President, lines west of Detroit and St. Clair Rivers, G.T.R., Detroit, Mich., born at Sheffield, Ohio., Nov. 1845.

G. B. Burchell, General Manager, Maritime Coal Ry. and Power Co., Joggins Mines, N.S., born at Sydney, N.S., Nov. 1, 1877.

J. R. Cameron, General Superintendent, Canadian Northern Ry., Winnipeg, born at Truro, N.S., Nov. 5, 1865.

L. D. Chetham, City Passenger Agent, C.P.R., and District Passenger Agent, Esquimalt and Nanaimo Ry., Victoria, born at Matlock, Eng., Nov. 5, 1869.

F. H. Clendenning, District Freight Agent, B.C. Coast Service and Trans-Pacific Steamships, C.P.R., Vancouver, B.C., born at Montreal, Nov. 9, 1881.

F. Conway, acting General Superintendent, Kingston and Pembroke Ry., Kingston, Ont., born at Ernestown, Ont.,

W. L. Crighton, Advertising Agent, Intercolonial Ry., Moncton, N.B., born at Derby, Eng., Nov. 9, 1871.

W. Cuthbert, Fuel and Tie Agent, G.T.R., Montreal, born at Longueuil, Que., Nov. 9, 1856.

W. Downie, General Superintendent, Atlantic Division, C.P.R., St. John, N.B., born at Rock Currie, Ireland, Nov. 12, 1850.

Jos. Dubrule, Jr., Manager, Canadian Pacific Car and Passenger Transfer Co., Prescott, Ont., born at Spencerville, Ont., Nov. 14, 1872.

R. L. Fairbairn, Assistant General Passenger Agent, Canadian Northern Ry., Toronto, born at Stillwater, Minn., Nov. 24, 1880.

Grant Hall, Assistant General Manager, Western Lines, C.P.R., Winnipeg, born at Montreal, Nov. 1863.
Nov. 1863.

C. R. Hosmer, director, C.P.R., Montreal, born at Coteau Landing, Que., Nov. 12, 1851.

J. McGillivray, Superintendent, Inverness Ry. and Coal Co.'s lines, Inverness, N.S., born at Nairn, Scotland, Nov. 13, 1867.

J. P. Mabee, Chief Railway Commissioner, Ottawa, born at Port Rowan, Ont., Nov. 5, 1859.

T. E. Martin, Local Freight Agent, C.P.R., Quebec, Que., born at Beauharnois, Que., Nov. 23, 1852.

C. Murphy, General Superintendent of Transportation, Eastern Lines, C.P.R., Montreal, born at Prescott, Ont., Nov. 20, 1865.

F. Nicholls, Vice President, Toronto Ry., director, Canadian Northern Ry., born in England, Nov. 23, 1856.

W. J. Quinlan, District Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, born at Montreal, Nov. 21, 1883.

H. P. Sharpe, General Agent, Dominion Express Co., Toronto, born at Brockville, Ont., Nov. 24, 1864.

G. H. Shaw, General Traffic Manager, Canadian Northern Ry., Toronto, born at Smiths Falls, Ont., Nov. 25, 1859.

J. B. Sheppard, District Freight Agent, C.N.R., Winnipeg, born at Teeswater, Ont., Nov. 27, 1881.

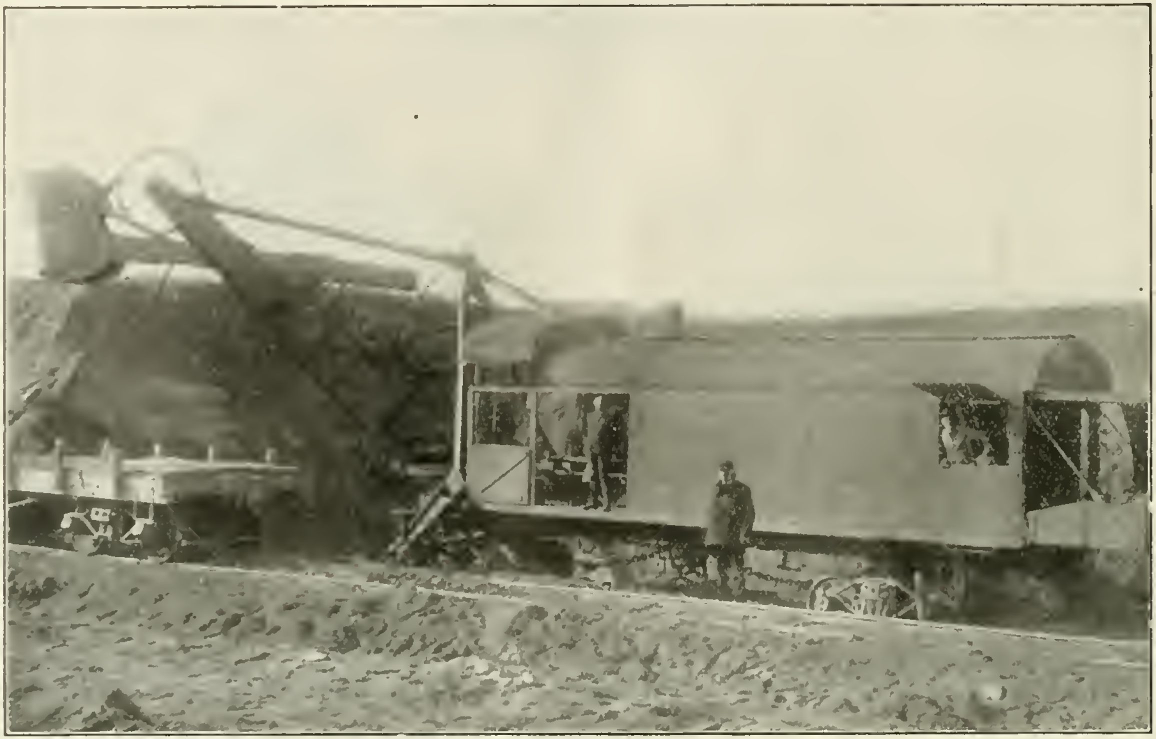
F. M. Spaidal, General Superintendent, Canadian Northern Quebec Ry., and Quebec and Lake St. John Ry., Quebec, born at Gananoque, Ont., Nov. 13, 1858.

J. Sparks, Assistant General Baggage Agent, Western Lines, C.P.R., Winnipeg, born in London, Eng., Nov. 25, 1874.

H. P. Timmerman, Industrial Commissioner, Eastern Lines, C.P.R., Montreal, born at Odessa, Ont., Nov. 6, 1856.

H. E. Whittenberger, Superintendent, Eastern Division, G.T.R., Montreal, born at Peru, Ind., Nov. 9, 1864.

ATLANTIC STEAM SHOVELS



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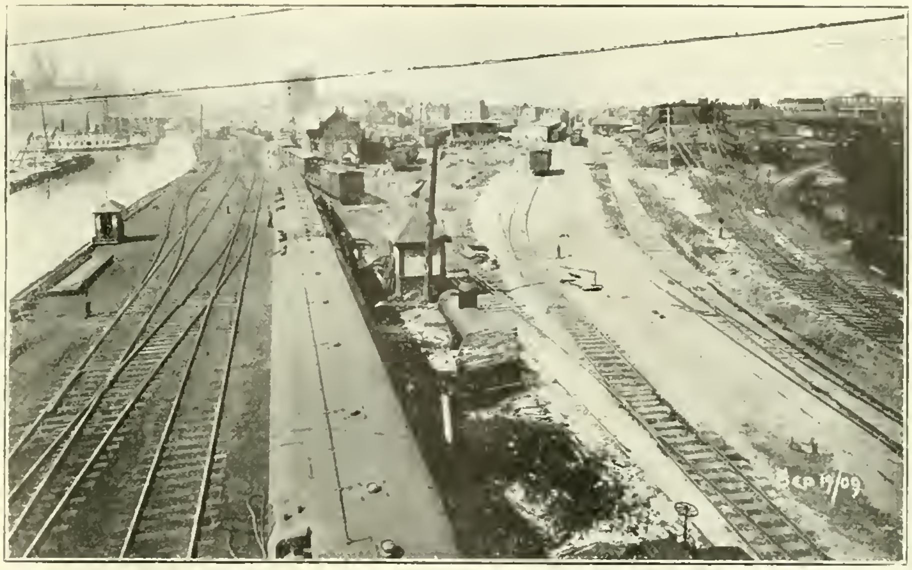
Remodelling of the Grand Trunk Railway Ottawa Terminal Yards.

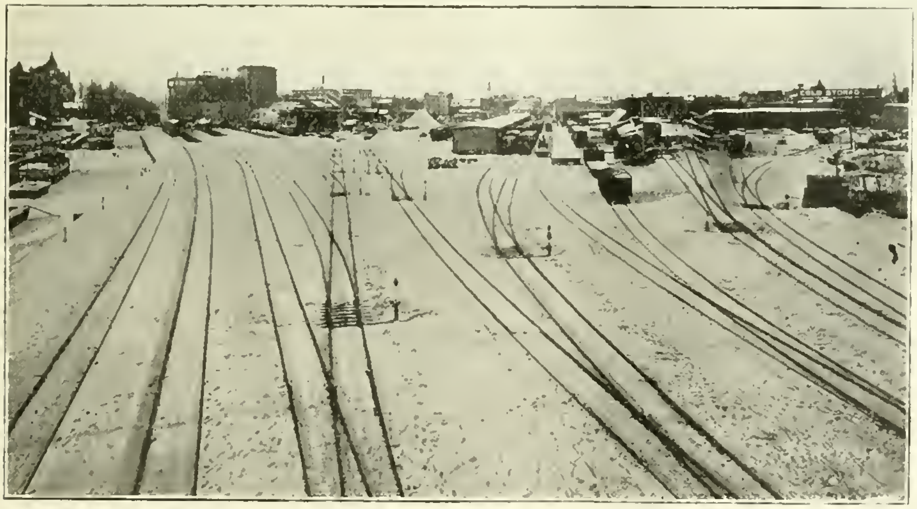
By Alexander Gray, A.M. Can. Soc. C.E.

In giving a brief account of the work of remodelling the G.T.R. central station yard in Ottawa it would be superfluous to review the reasons which led up to such work, further than to say that when the Canada Atlantic Ry. was fortunate enough to secure this route to the heart of the city, the terminal was not designed with any consideration of future requirements. Tracks and other railway facilities were built by degrees as demands arose and property was acquired. Under such conditions it was only a question of time until all the available land north of Laurier Ave. was taken up with a jumble of tracks which were very difficult to operate and in an exceedingly poor state of repair, the rails being 56 lb. steel and the switches stub. When we came to consider the remodelling of this yard, the problem which confronted us was not to design a yard by using up the old one, but to design one without any regard for existing conditions, a yard giving the facilities for passenger and freight accommodation.

The passenger and freight yards are entirely separate from south of Laurier bridge, and as both the passenger and freight business enter from Besserer St. the grades of the tracks are governed by the grades of this street. From the station entrance towards the freight shed there is a drop of about 6 ft., which makes the passenger yard ascend from Laurier bridge towards the station and the freight yard descend from Laurier bridge towards Besserer St. While we were anxious to have the two yards of a uniform grade, it was impossible to obtain this without very considerable expense both in land damages and in bringing up the adjacent streets to such grade. With the present arrangement there is excellent drainage for these two yards. The 20 ft. roadway between the two ladder tracks may be called the water shed. The passenger yard drainage runs toward the canal and Laurier bridge and the freight yard drainage goes towards Besserer St., where it drains into a sewer at Musgrove St. This was one of the difficulties in the old yard, there was no drainage, which meant a lot of heavy maintenance work during spring and fall weather.



G.T.R. Central Station Yards, Ottawa, from Laurier Avenue Bridge, Sept. 17, 1909 before Improvements.



G.T.R. Central Station Yards, Ottawa, from Laurier Avenue Bridge, Jan. 17, 1910, showing Improvements made.

In the centre of the old yard between Laurier Ave. and Besserer St. there was a hump of about 3 ft. and as the tracks were lying on blue clay with little or no ballast underneath, a steam shovel was put to work and excavated the freight yard for its entire width and right through to Besserer St. to a uniform grade of 1-10% and to a depth of 2 ft. below the base of rail. At the side of the tracks under the transfer platform the excavation was made about 18 ins. deeper, in order to have the sub grade of the tracks thoroughly drained. This arrangement gives a very dry yard in all weather. Part of the excavation from this point was dumped into the old canal basin where the freight shed stood on piles, this part having never been filled in. With this work all surface traces of the old canal basin have now been obliterated.

In the carrying out of this work the chief point we had to keep in sight was the safe and speedy operation of present business. The freight facilities were so congested that we could not cut out one track without making provision for its business at some other point. It so happened that part of the new freight shed was located on vacant property, thus enabling us to build the freight office and about 300 ft. of the freight shed and two of the freight tracks before disturbing the old shed, which was located where part of the main passenger ladder track now runs. As the new tracks peculiarly crossed the old tracks diagonally, a good deal of study had to be given to each move made, so that freight business would not be tied up during the construction of any of the new works.

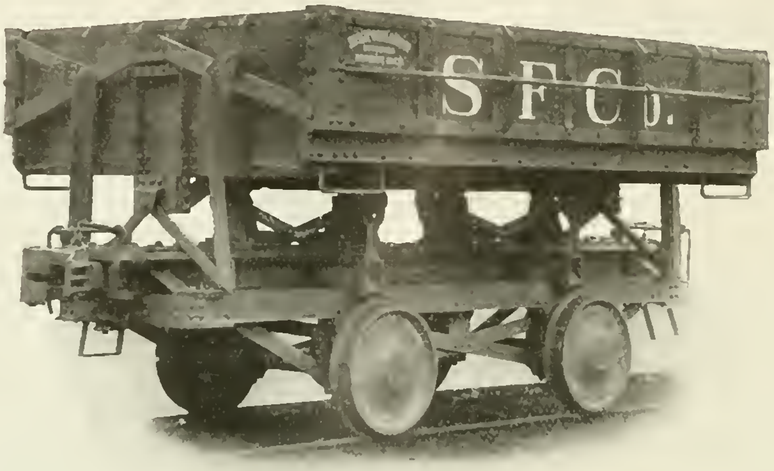
The rail in the freight tracks is 80 lbs. and the switches are split with no. 9 frogs, thus having leads which will admit of a safe operation by the ordinary class of engines, although there is a special yard engine to do all the switching work in this yard. The maximum curvature is 9½ degrees, which is the turnout for no. 9 frog. Up to the time of writing there have not been any derailments in this yard since its completion, whereas previously there was an engine off the track on an average every 24 hours.

The freight yard consists of a freight shed and office 668 by 30 ft., with four parallel tracks the full length of the shed. A transfer platform 560 by 16 ft. and three pairs of unloading team tracks with macadamized roadways 30 ft. wide are also parallel with the freight shed. The floor of the freight shed is level with the floor of cars standing alongside. Freight can thus be loaded or unloaded into the cars through the shed. Opposite every alternate door in the shed is a set of weigh scales set in the floor, which saves a considerable amount of trucking.

The passenger yard tracks are in pairs 13 ft. centres, with room between each pair of tracks for a platform 19 ft. wide. The shortest pair of tracks have a train capacity of eight cars each (figuring average length of car over all at 70 ft.) and the longest can hold 17 cars. The total train capacity of this yard is 100 passenger cars, which figures out of a little more than double the train capacity of the old passenger yard. The passenger yard tracks are built of 100 lb. rail with no. 9 frogs. All the switches are on the one ladder, which gives the engine driver approaching the yard a clear view of the condition of all the switches. Ultimately it is the intention to have all these switches interlocked, the tower to be located either on or near Laurier bridge. A train shed, of the Bush type, 500 ft. long, covers all the tracks from the baggage annex to the canal. The tracks are ballasted with crushed stone which will keep down the dust in the station vicinity. The platforms are concrete at an elevation of 7 ins. above the top of rail.

In the passenger yard layout, in order to provide a through second track for the C.P.R. in the event of its double

Russel Heavy Duty Dump Cars



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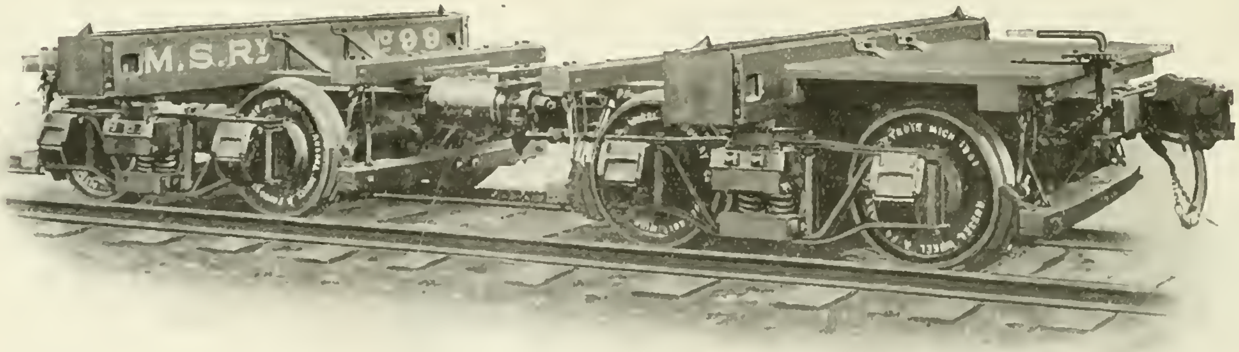

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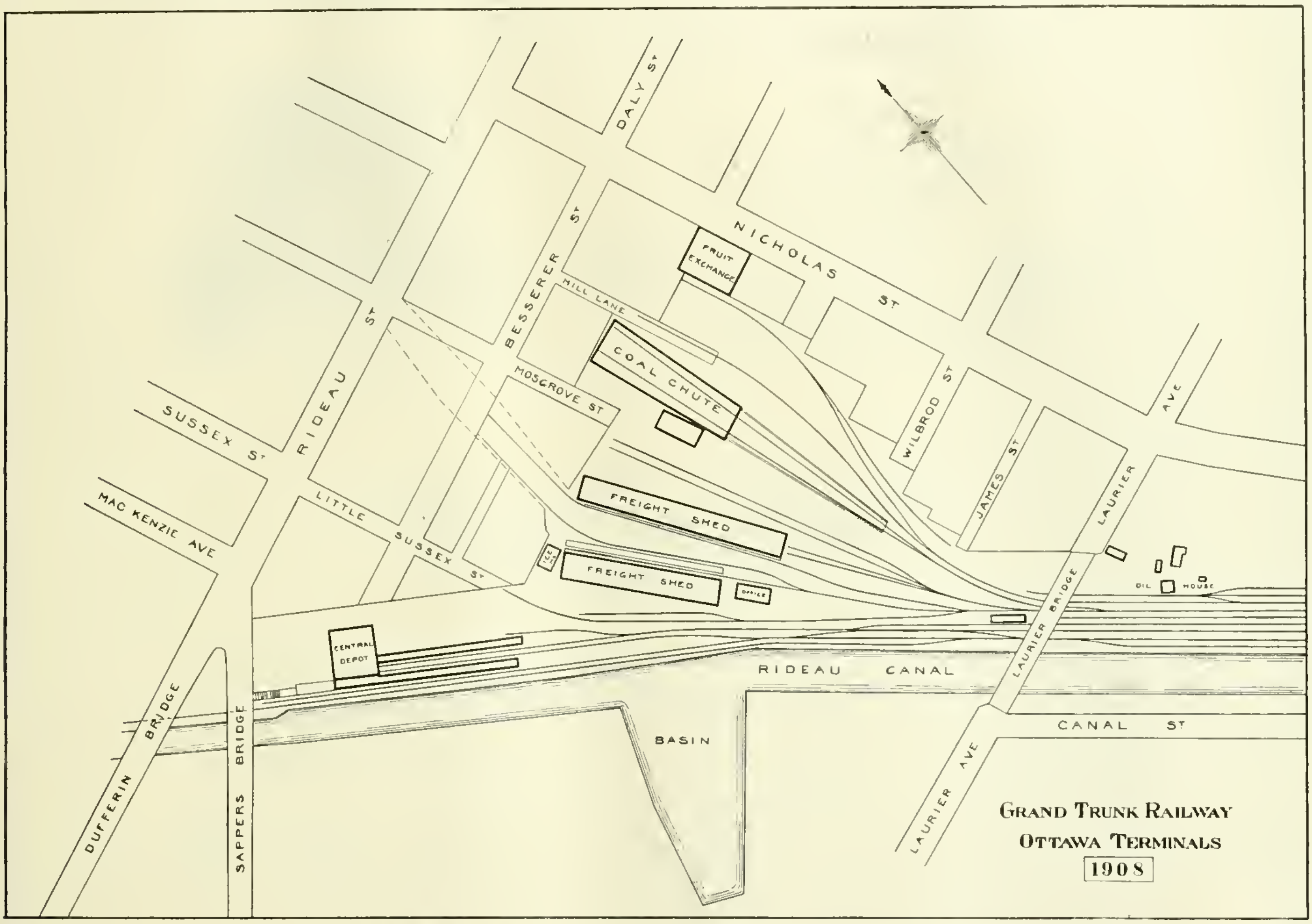
tracking its lines across the Alexandra bridge, we had to build a retaining wall 1,079 ft. long of an average height of 17 ft. Before commencing work soundings were taken with an iron rod along the side of the wall at intervals of about 25 ft. Instead of these soundings going to rock (as the man who took them reported) they only went to rock for about half the length: the rock extended from Sappers bridge end of the work for about 550 ft. and then suddenly disappeared: its place being taken by large boulders and gravel. The profile showing these soundings was so uniform that there were no grounds to question the results. This shows that no reliance can be placed on this method of sounding. The only safe way, in my opinion, is to put down test pits.

Designing the wall on this profile we


Daly St
Nicholas St
Fruit Exchange
Besserer St
Hill Lane
Coal Chute
Mosgrove St
Rideau St
Sussex St
Mac Kenzie Ave
Little Sussex St
Freight Shed
Freight Shed
Ice
Office
Central Depot
Wilbrod St
James St
Laurier Ave
Laurier Bridge
Oil House
Rideau Canal
Canal St
Basin
Laurier Ave
Dufferin Bridge
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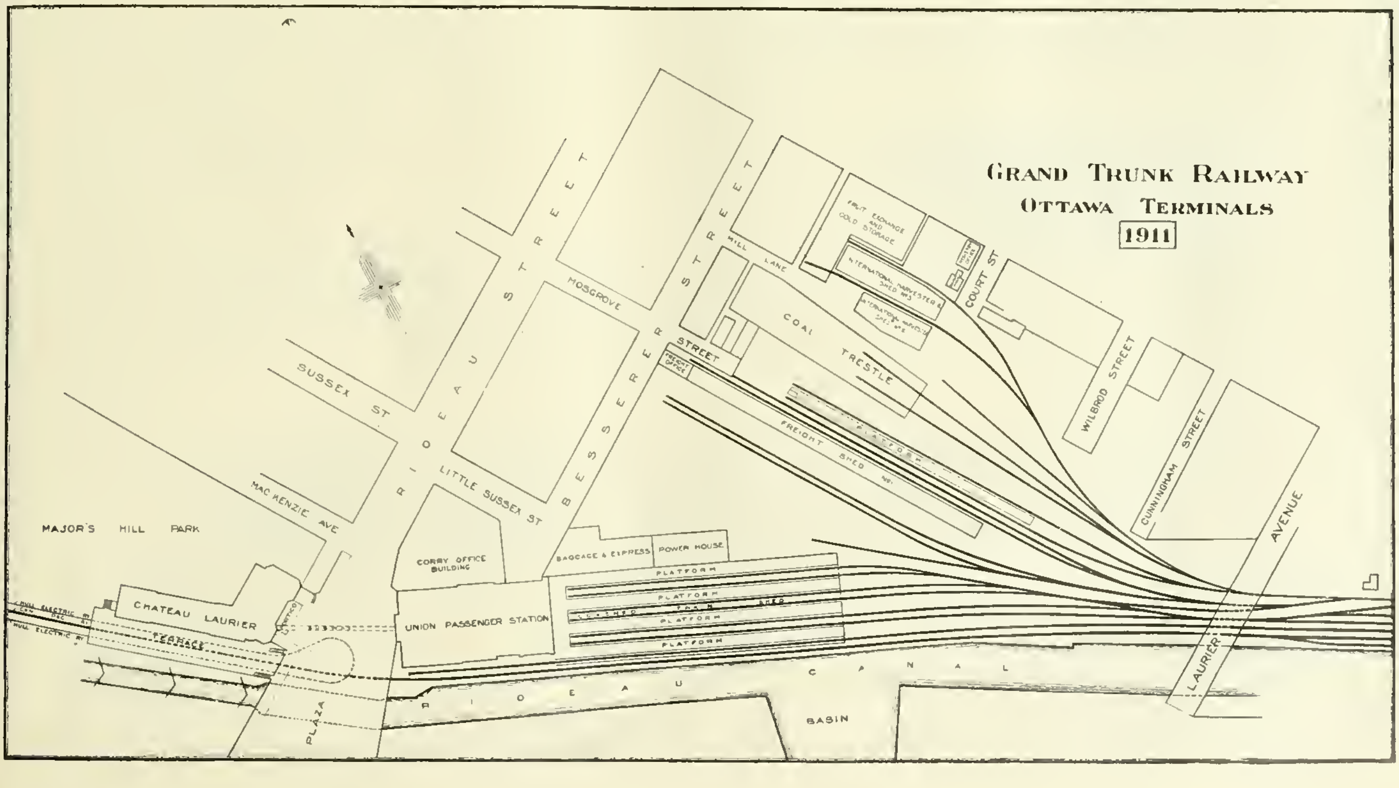
Besserer Street
Rideau Street
Hill Lane
Mosgrove Street
Fruit Exchange and Cold Storage
International Harvester & Shed No. 3
International Harvester Shed No. 2
Court St
Coal Trestle
Freight Office
Platform
Freight Shed No. 1
Wilbrod Street
Cunningham Street
Laurier Avenue
Sussex St
Little Sussex St
Mac Kenzie Ave
Major's Hill Park
Corry Office Building
Baggage & Express
Power House
Platform
Platform
Train Shed
Platform
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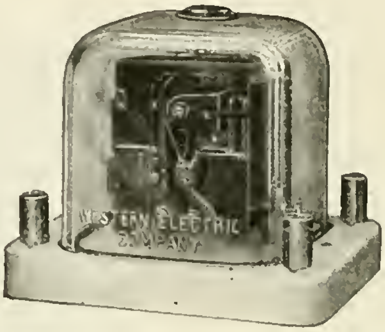

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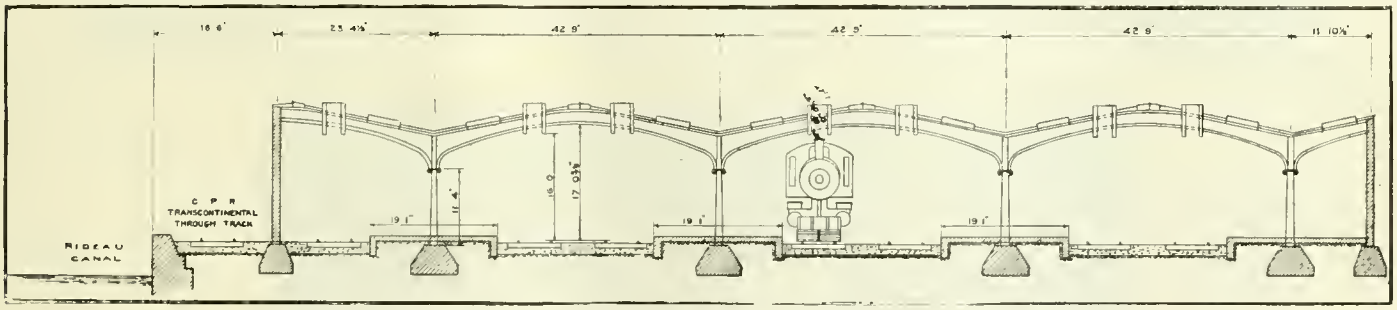
figured on a rock foundation throughout and at the south of Laurier bridge end of the work for a distance of 137 ft. concrete piers 9 ft. 10 ins. by 5 ft. and at 12 ft. centres were built and put down in each case to the boulder foundation. Sheet piling was used in putting down these piers. The sheet piling was 3 in. lumber and was driven with an ordinary pile-driver, only instead of the 3,000 lb. hammer a piece of pine, 12 by 12 ins., was substituted; as the hammer simply split the piling in pieces. When we reached the boulders we experienced very great difficulty in driving and keeping the proper alignment, in fact we found it almost impossible to go to any depth in this foundation, as some of the boulders were so large that they had to be blasted to be taken out. There was little to be gained in looking for a better foundation than this. The piers are connected to each other by a concrete slab 2 ft. thick and reinforced with old rail. Where the wall did not rest on piers we widened out our footing 12 ins. and put the wall about 3 ft. deeper than originally intended, so that it would not be undermined in the event of the Rideau canal being deepened to a 10 ft. draught. The outside face of this wall is 13 ft. from the centre line of the first passenger track. In the design we had therefore to take care of the train load as well as the ordinary surcharge of earth pressure. Expansion joints were placed every 25 ft. and the concrete was laid in alternate 25 ft. sections.



Cross Section of Train Shed Grand Trunk Ry. Central Station, Ottawa.

The cost of excavation work was pretty high. On account of the through C.P.R. main lines being 26 ft. from the face of the wall and having to keep this track clear at all times we had to dump the excavations into the bed of the canal and after the wall was completed handle the excavations again, part of it with a derrick and the remainder by shovelling on to platforms and from there to cars. There was 4,800 cubic yards earth excavation which cost $1.44 a yard, and 450 cubic yards of rock which cost $2.10 a yard. The total cost of excavation, including back fill and disposing of waste material, was $7,862.15. The sheet piling for piers cost about 3c. per cubic yard of the total concrete in the wall. There were 2,880 cubic yards of concrete. The total cost per cubic yard, including excavation, sheet piling, walling, and everything in connection with the work was $8.43. The cost of concrete may be divided up as follows: Forms, 93c. per cubic yard; sand, $1.087; crushed stone, $1.364; cement, $1.17; mixing and placing, 70.8c.; old rail for footings, 9.2c.; pipe for weep-poles, 1.8c.; walling, 13c.; watchman, 4.5c.; and excavation, 2.73c. per cubic yard of concrete. This comes to, labor $3 879.7; materials $4.39, and tools 16c. The cost of concrete, not including excavation and sheet piling for piers was $5.67 per cubic yard. All this work was done by our own forces. Work was commenced on Feb. 20, 1910, and finished for the opening of navigation, May 1, 1910.

In the remodelling of railway terminals I think it is always advisable for the young engineer to freely discuss the disadvantages of existing conditions and endeavor to discover from the men who are responsible for the operation of the yard to be designed wherein the difficult and objectionable features of the existing conditions lie. I do not wish to be understood as advising that an engineer should be led entirely by what everyone suggests, for if he did he would find himself in the same position as the man with the ass crossing the bridge. The yard men will want switches every few hundred feet, where the roadmaster will not want any at all. The master mechanic will insist upon a gravity coaling plant, where the physical conditions favor a mechanical one, all on account of saving his department the maintenance work, and vice versa. When I was remodelling Bank St. yard in Ottawa, before it was completed the yardmaster and his crew strongly protested that they would never be able to operate the yard for the reason that there were not as many switches in the new yard as in the old. I am safe in saying that in the operation of our terminals in Ottawa 99% of the derailments and trouble were at switches. Another point in remodelling yards is that special study must be given as to how the work is to be carried out during the continuance of traffic. This is sometimes a very difficult problem, especially in congested yards.

[The writer of this article was Resident Engineer, G.T.R., at Ottawa, when the works described were carried out. He is now Assistant Engineer in Charge Upper Ottawa River Storage, Public Works Department, Ottawa.—Editor.]

* * *

Grand Trunk Railway Terminal Buildings at Ottawa.

The buildings which the G.T.R. is completing at Ottawa include the Chateau Laurier hotel, the central union passenger station, the baggage and express annex and the power plant building. A preliminary description of these was published in our issue of Nov., 1907, a complete illustrated description of the hotel and station was published in our issue of July, 1908, and in our issue of June, 1911, we gave a panoramic view showing a portion of the station, the hotel, the plaza formed by the junction of the Dufferin and Sappers bridges, the Rideau canal and a portion of the Government buildings. Some fuller particulars of the station, train shed, etc., are now available.

The passenger station is built on the southerly side of Rideau St. between the Corry office building and the Rideau canal. It is entered from Rideau St., on the second floor, through a large main corridor in the centre, leading by a marble stairway down to the general waiting room which has an area of over 9,000 ft., and extends the whole width of the building on the lower or ground floor. In height this room is equal to the total height of the office building in the front portion of the structure. The walls of the room are in Travertine finish, the flooring is of marble and the ceiling is vaulted and richly coffered. The men's waiting room, smoking room, barber shop and lavatories are approached from this room, also the ladies' waiting room, rest room and lavatories, and the lunch room, parcel room, telephone and telegraph booths, news stands and information bureau. An important feature here is the doorway leading to the subway connecting with the Chateau Laurier. Its location in the centre of the room is emphasized by the two flights of marble stairs on either side of it which lead to Rideau St.

From the main waiting room, the concourse and platforms are reached through a ticket lobby, with ticket offices on the left and a lunch room on the right. The concourse, 60 ft. wide, extends in length the full width of the main building, and has a carriage entrance from Besserer St.. Through this concourse at the easterly end a vestibule leads directly to the baggage building. The lower part of the exterior walls, to a height of about 60 ft. from the ground, is of Stanstead granite, the remainder above this line being of buff Indiana limestone.

The G.T.R. divisional offices are located in this building, and the Board of Railway Commissioners has its offices as well as its public court room on the upper floors of the Rideau St. portion of the building.

The station has been planned to meet all practical and general requirements. Peculiar and difficult conditions with regard to track, street and bridge levels have been successfully overcome, and the result provides not only a railway terminal adequate to meet the needs of the travelling public, but an architectural adornment to the capital city.

THE TRAIN SHED is of the Bush type. It is 533½ ft. by 164 ft. and contains seven covered tracks. The train platforms are each 533½ ft. long. The area of the shed roof is 78,600 sq.. ft. The width of the train platforms is 19 ft. 1 in. and the train shed columns are on the centre lines of these platforms. The columns and platforms are 42¾ ft. apart centre to centre, and the columns are spaced longitudinally on the platforms at a distance of 27 ft. centre to centre, the first row being 15 ft. from the station building. The distance from the top of track rail to the clearance line of smoke duct at the centre of each track is 16 ft. There are two skylights, each 4 ft. 10 ins. wide by 21 ft. long over each 19 ft. 1 in. platform, and one continuous skylight 3½ ft. wide, with a ventilator in the centre of each bay over the space between the tracks, the total area of all skylights being 26,150 sq. ft. The skylights over the platforms will furnish excellent light on the platforms, as well as to the side of the cars standing next to the platforms, and the skylights over

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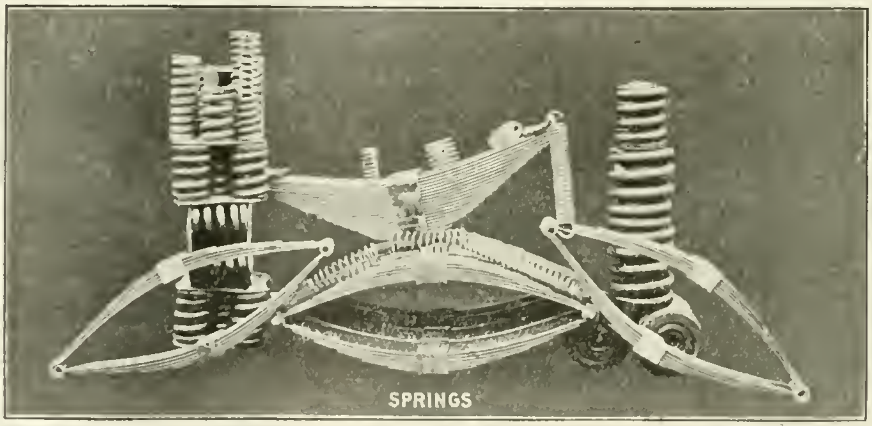

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the space between the tracks will afford good light to the inner windows of two lines of cars standing on a pair of tracks between the platforms. The open smoke ducts over each track are 2 ft. 5 ins. in clear width and have sides 4 ft. 2⅝ ins. high. These smoke ducts extend the full length of the train shed over one track, which is a through track, and the smoke ducts for the other six tracks stop within 18 ft. of the concourse. The through track outside the train shed on the westerly side and parallel to it, is for the C.P.R. transcontinental trains.

The columns will be supported on concrete piers, of which about 80% will require to be piled, the remainder will be taken down to rock. The proportions of concrete in the foundations will be 1-2½-5. The platforms and curbs will be composed of concrete, in the proportions of 1-2-4 for the curbs and 1-2½-5 for the platforms. The sides of the train shed will have curtain walls of concrete. The roofing will be composed of a 2 in. slab of concrete, and it is intended to have a tar and gravel covering. The drainage of the roof will be taken care of by 4-in. wrought iron pipes extending down the centre of every second column, and will be led to main drains between columns, and drained in the canal close by.

BAGGAGE AND EXPRESS ANNEX BUILDING. Immediately adjoining, in the rear, next to the platforms and tracks and affording easy communication and most convenient operation, is the baggage and express building with its main elevation on Besserer St. facing the space at the foot of Little Sussex St., recently acquired and paved to accommodate the vehicular traffic to the concourse of the station and the baggage and express building. In the baggage and express building are provided the mail rooms, immigrants' quarters, engine room, coal elevators, conveyors and boiler plant. In the latter the most up-to-date labor-saving devices and mechanical equipment have been installed, these include the electric separators for light and power, the refrigeration plant, filters, pumps, engines, etc., required in the operation of both hotel and station.

◆

Railway Route Maps Approved.

The Minister of Railways has approved of the following route plans.—

CANADIAN PACIFIC RY.—Wilkie to Anglia branch. The approval of July 24, was amended so as to cover the whole distance from Wilkie to Anglia, 78.1 miles, and a revision of the same line between mileage 7.46 and 24.9 was approved on same date.

CANADIAN NORTHERN ONTARIO RY.—Sept. 27, from Chisholm tp., Nipissing District to Capreol tp., Sudbury District, about 100 miles.

◆

C.P.R. Second Track in Saskatchewan.—In the article under this heading in our Oct. issue, page 951, it was stated that, "From Moose Jaw to Boharm, eight miles, the track will be laid with all crossed ties." It should have read, "all creosoted ties. . . . "

The Canadian Society of Civil Engineers, Ottawa Branch, has elected the following officers for the current year: Chairman, S. J. Chapleau; committee, G. J. Desbarats, R. F. Uniacke, John Murphy, N. Cauchon, R. de B. Corriveau; Secretary-Treasurer, V. Brayley.

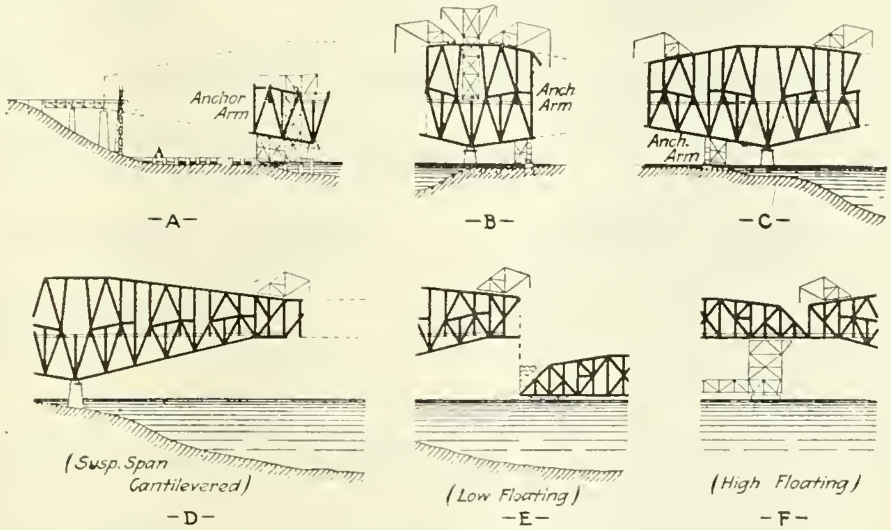
J. F. Taylor, General Superintendent, Great Northern Ry., Great Falls, Mont., is reported as having stated at Lethbridge, Alta., recently that in future trains will run through from Lethbridge to Great Falls instead of transferring the passengers at Virden, Mont., as heretofore.

Schemes of Erection Proposed for the Quebec Bridge.

In our Sept. and Oct. issues we gave particulars of the schemes of erection proposed by the St. Lawrence Bridge Co., and the British Empire Bridge Co. Following are further particulars:

The Pennsylvania Steel Co. proposed three different schemes of erection on the Board's design in addition to submitting a tender for a suspension bridge based on a design by Gustav Lindenthal. The different schemes of erection of the cantilever designs differ only in the manner of the erection of the suspended span, viz., by cantilevering out, by floating on high falsework, and by floating on low falsework and hoisting into place. The method of erecting the cantilever and anchor arms is naturally the same in all cases.

Preparatory work in the nature of storage yards, crane, runways, loading and unloading gantrys, etc., is fully provided for by the proposal, and some of it is shown in the first of the sketches in the figure on this page. At the north side, where erection would start, there is a heavy timber elevator to deliver the bridge material from the upper to the lower level, as the company proposes to bring all material in by rail. On the lower level a yard served by a 100-ton gantry is laid out for storing and handling material to be used on the north side. The material for the south half of the bridge will be brought to the north side and carried by the north gantry crane, assisted by a special derrick car, to a barge slip, whence the steel is transferred across the river on barges. On the south shore it is received by a gantry equipment similar to that on the north shore. All machinery is operated by electric power. An electric winch helps handle the scows and a motor operates the material trucks on the tracks from the gantry yard to the slip.



Pennsylvania Steel Co. Board's Design.

The first step in the erection will be the raising of a steel tower, 46 by 50 ft. and 248½ ft. high, behind the main pier. This tower will be equipped with four booms of 90 tons capacity operating from the corners at the top. The booms are fed either directly from the gantry yard or by a special track leading from the yard.

The derricks on the tower erect the falsework between the pier and AL10, after which the permanent bridge steel, including the shoe, bottom chords, laterals, etc., up to the bridge floor is put in place. With a suitable number of additional stringers placed on the floor, the upper part of the tower is disconnected from the lower part at the level of the floor. The top is then skidded along the bridge floor until it is in a position directly over the main pier. The lower part of the tower is then taken down and re-erected on top of the section already in place. On the top of this reconstructed tower the booms are again erected, the hoisting engines remaining on a platform on the tower at the floor level.

The tower in this second position erects the permanent members of the truss that can be handled within the swing of the booms, including the top-chord section between the main posts and the two diagonals completing the triangle AL14—AU12—AL10. Under panel point AL10 a temporary steel bent is placed to support this triangle, the bent being imbedded in concrete to above high-water mark, as a protection against ice, etc. As the work of erection progresses from this point, the cantilever and anchor arms are so balanced that the centre of gravity of the completed work always lies between the main pier and the temporary tower at AL10. This tower being securely anchored down is also capable of acting as an anchorage, thus affording an extra factor of safety.

When the work has proceeded this far, the top section of the erecting tower is hung up from the top chords by floorbeams in temporary positions, and the lower part of the tower is taken down. The tower booms then erect the top chord travelers, one for the anchor arm and one for the cantilever arm, taking a large part of the material from the bottom sections of the tower.

These travelers have booms 90 ft. long and a lifting capacity of 100 tons. In addition they are equipped with two 20 ton derricks with booms 80 ft. long, located 15 ft. inside the centre line of the bridge trusses. The 20 ton derricks have double booms for convenience in driving pins. The travelers slide forward from panel point to panel point, on runway box girders. They have no wheels, but are fitted with sliding shoes, except in the cantilevering of the suspended span, when rollers are placed under these shoes. This is done as an added factor of safety to prevent any tendency of the traveler to slide forward, or to get out of hand when unclamped and moving.

Material is supplied to the top travelers by derricks situated on the bridge floor. One 100 ton derrick is located over the main pier and one for lighter material at panel AL10, both command-

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ing the gantry yard below. Where possible, material from the gantry yard is picked up direct by the top travelers.

After the main anchorages are in position the traveler on the cantilever arm continues ahead on the suspended span until the whole bridge is completed. Adjustable members are introduced at the end of the cantilever arm, in order that the work may be coupled up at the centre. The travelers are adjusted to work on a horizontal instead of inclined chord by means of extra steel members and the rollers mentioned above.

High Floating Erection.—The suspended span is erected on high steel falsework, the proposed site for this erection being at Victoria Cove, about half a mile below the bridge site. Material for the suspended span is taken from the north gantry yard and transported by water as required. The falsework is erected by gin-poles assisted by a derrick on a scow. The span is erected on the falsework by an inside steel tower traveler, having two heavy derricks in front and a light one at the rear. This tower is high enough so that brackets on the top floor level overhang the top chord of the span, and from them the truss members are temporarily hung. When the span is fully assembled and the traveler taken down, the trusses connecting the two falsework towers are lowered from their top position to the bottom of the tower, where they are connected to these towers, thus acting as reinforcement to the pontoons and holding them in their proper relative positions.

The pontoons are floated under the falsework towers in between the temporary concrete piers upon which the framework is erected. At high tide the load of the falsework and suspended span is transferred to the pontoons which are then towed to the site. Two pontoons are used. Each is 252 by 75 ft., and 13 ft. deep.

Low Floating Erection.—Under the scheme, the suspended span is erected in the same manner as for the high floating scheme except that the span is erected on low timber falsework. When the span has been completely assembled the falsework is removed, allowing the span to rest on four concrete piers, in which position it is finally riveted up. At the proper time six scows, three at each end, are floated in, and when the tide rises the span is transferred to these scows and towed into position. From this position it is jacked up into its final position.

The wire suspenders attached to the suspended span are held up in place by wooden falsework, the suspenders being sufficiently slack so that any wave motion will not tend to pick up any corner of the span before all four corners are attached, and the entire weight taken simultaneously by the lifting jacks.

The cast collars that hold the upper end of the wire suspenders are supported on a heavy frame made of girders, which are in turn attached to a chain of lifting plates. These plates are 27 ins. wide and are full of bolt holes, uniformly spaced, so that they can be thoroughly bolted together. The plates lap past each other so that each plate can act as both material and splice, and can also be readily removed as the span is gradually lifted. Each lifting plate has 10 in. pin holes every 3 ft.

On the top of the end of the cantilever arm is a steel box which has a 2,000 ton jack inside of it, and just above it is another steel box similar in design. The lifting plates pass through both of these boxes and at the start of the lifting operations the lifting plate carrying the suspended span is hung from the upper box by means of a 10 in. pin passing through the box and plate. The jack in the lower box is operated by an ft. and a speed of 2 ins. per min. When everything is ready the jack is operated and the load raised 3 ft., or until the pin through the lower box and the lifting plates can be driven and the upper pin withdrawn. The upper box is then lowered until its pin hole comes opposite the next lowest in hole in the lifting plate. This pin is then driven and the lower pin withdrawn, the jacks again operated, thus completing a cycle. As sections of the lifting plates are released, they are disconnected and by means of the traveler are lifted out of the way.

The lifting operation proceeds at all four corners of the suspended span simultaneously. When the span is fully raised the final pins can be driven as the pin holes in the cast collars are not used during the raising.

A safety device is provided to safeguard the raising operations. It consists of four screws at the four corners of the lower box, driven by an electric motor operating through equalizing gears. These screws are always bearing against the upper box, and as they are capable of sustaining the whole load, the temporary failure of the lifting apparatus would have no serious result. These screws can also be used for quickly lowering the upper box after each operation.

After the load of the suspended span has been transferred to the lifting jacks the scows can be released and all lines and anchors cleared from the river. It is estimated that the span can be lifted and connected in two working days. Many of the special appliances propos- electrically-driven pump and is designed for a working pressure of 11,000 lbs per sq. in. with an effective stroke of 3 ed by this firm in connection with the erecting of this bridge have been patented. The scows used in this scheme are each 257 by 38 ft. and 10½ ft. deep.

NON-RECEIPT OF PAPERS BY SUBSCRIBERS.

The greatest care is exercised in mailing The Railway and Marine World to subscribers, the system of checking adopted being such that the dispatching of any subscriber's copy cannot be omitted.

If at any time a subscriber fails to receive the paper, we will esteem it a favor to be promptly notified, in order that a duplicate copy may be mailed, and that the matter may be taken up with the Post Office Department, with a view to preventing a recurrence of the non delivery.

◆

Winnipeg Union Stockyards.—As a result of a conference Oct. 10, between representatives of the Manitoba Government, the railway companies and the Abattoir Commission, it has been decided to start work immediately on the union stockyards. A site of 215 acres has been provided at St. Boniface, and it is expected to have everything in readiness for starting operations early in the fall of 1912. The union stockyards will be under the control of the government, in so far as the rates and charges are concerned, while the government, which has the first choice over the packing houses, has already obtained a site of 15 acres to be utilized in connection with the construction of a cold storage plant and abattoir.

David Jardine, of Farnworth and Jardine, Liverpool, Eng., who died there, Oct. 8, aged 84, was born in New Brunswick, and his firm controls the lumber properties formerly owned by the Alexander Gibson Ry. and Manufacturing Co. in New Brunswick.

Preserving Ties for the Canadian Northern Railway.

The C.N.R. management has, as officially stated in our last issue, made a contract for the preservative treatment of 500,000 ties at Fort Frances, Ont., by the Bruning and Marmetsche process. This is a German process, named after the inventors, and has been in use for about three years. It is claimed to be an improvement on the straight zinc chloride process introduced in 1838 by Sir William Burnett, and known as the Burnett or Burnettizing process. The new feature of the B. and M. process is the use of salts of aluminum, which are used to dissolve the cloudy precipitate which is formed when zinc chloride is diluted with water. It is claimed that by the clearing of the solution the zinc chloride is carried much further into the heartwood and penetrates the sap wood, and the aluminum sulphate holds a sufficient quantity of the zinc chloride there permanently so that it will not leach out. The solution is used hot enough to open the pores of the wood cells, which enables the timber to take up more solution than it could when cold and to coagulate the albuminous constituents of the wood cells with the zinc and special salts, impregnated, but the solution is not hot enough to form free acid, which would render the timber brittle, a drawback which caused the failure of some earlier and otherwise satisfactory processes.

This leaching out of zinc chloride has been the chief objection raised against the process, and in some cases where there is a heavy rain fall, it has been a considerable objection. On the other hand, F. J. Angier, in a paper read before the New York Railroad Club, states that a study of certain leaching tests shows less than 30% of the zinc chloride got out of the wood in nearly a year's time, and that the largest part (approximately 18%) leached out in the first 70 days. In a book describing a new process (Cresol Calcium) it is admitted that modern technicians ascribe little importance to leaching out and that zinc chloride never becomes altogether washed out. In a summary of the results of certain tests reported in the American Railway Engineering and Maintenance of Way Association's proceedings, it is stated with reference to various zinc chloride processes that 81%, 87% and 92% respectively of the Allardyce, Burnett (Chicago) and Wellhouse (Chicago) ties are still serviceable, points to the preservative value of zinc chloride.

As stated above, zinc chloride has been used for over 70 years as a preservative, and its advocates claim that its use is increasing, which they point to as proof that the leaching out is not such a serious matter at its opponents claim. The B. and M. process depends on zinc chloride for its preservative features. The aluminum sulphate, also a preservative, merely fixes the zinc chloride so that it does not leach out. Professor Hatt, Chairman of the American Railway and Maintenance of Way Association's committee on wood preservation, has given in a report evidence based on laboratory tests showing that after severe washing of sawdust a sufficient amount of aluminum and zinc remains, and states that a test has been made in exceptional severe exposures, like coal mines, or humid situations. The evidence shows that pit props have lasted in mines over two and one-half years when treated with B. and M. process, where untreated props only last nine months.

◆

A. W. Smithers, Chairman of the Board of the G.T.R., sailed from New York, Oct. 4, for England.

Why the C. P. R. North Toronto Route to Ottawa and Montreal is the Logical One

The train leaves as follows:

Leave North Parkdale - - -	9.15 p.m.	Arrive Ottawa, 6.50 a.m.
Leave West Toronto - - -	9.30 p.m.	Arrive Montreal 7.00 a.m.
Arrive North Toronto - - -	9.40 p.m.	Daily except Sunday.
Leave North Toronto - - -	10.00 p.m.	Will Stop at Westmount.

¶ The residents of Toronto are adjacent to either North Parkdale, West Toronto or North Toronto stations, same being easily accessible and closer to residential districts.

¶ The North Toronto route is over an hour faster and overcomes a long hill climb for the train out of Toronto, obviating any inconvenience and ensuring early arrival at Montreal and Ottawa.

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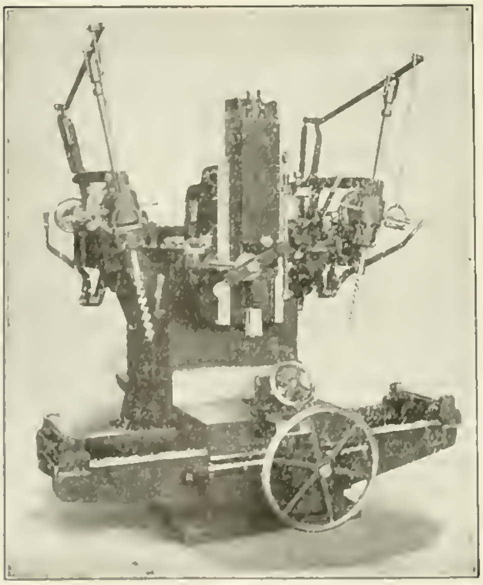

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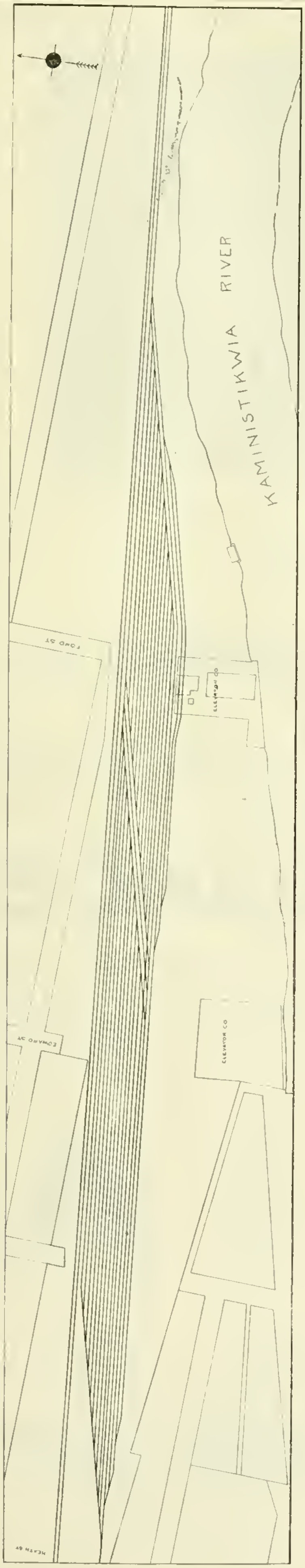


C.P.R. Poling Yard, Westfort, Fort William, Ont. Old Layout. Plan A.

The Canadian Pacific Railway's Gravity Yard at Fort William.

On account of the great satisfaction given by the C.P.R. hump yards at Winnipeg, the management decided to do away with the poling yard at Westfort, Fort William, and substitute for it a gravity yard.

To bring this change about it was necessary to raise the east end of the old receiving yard approximately 6 ft., and alter the eastern ladder track so that there will be two ladders running from the centre track of the old yard. The ladder at the west end of this yard is also changed so that the maximum length of the tracks is developed. The tracks in the old classification yard are lengthened and altered so that the ladders from the hump develop the longest track possible under existing conditions.

About 100 ft. of the east ladder of the classification yard is on pile trestle with planked top. The grade of the approach to the hump is approximately 1% and the decline to the east 3% for 150 ft. from the summit and gradually eased off.

The accompanying plan A, shows the old arrangement of tracks; plan B shows the arrangements of tracks in the new hump yard. The dotted lines in the latter plan show tracks which have been eliminated in the new layout.

The work is in charge of Frank Lee, Division Engineer, Winnipeg.

◆

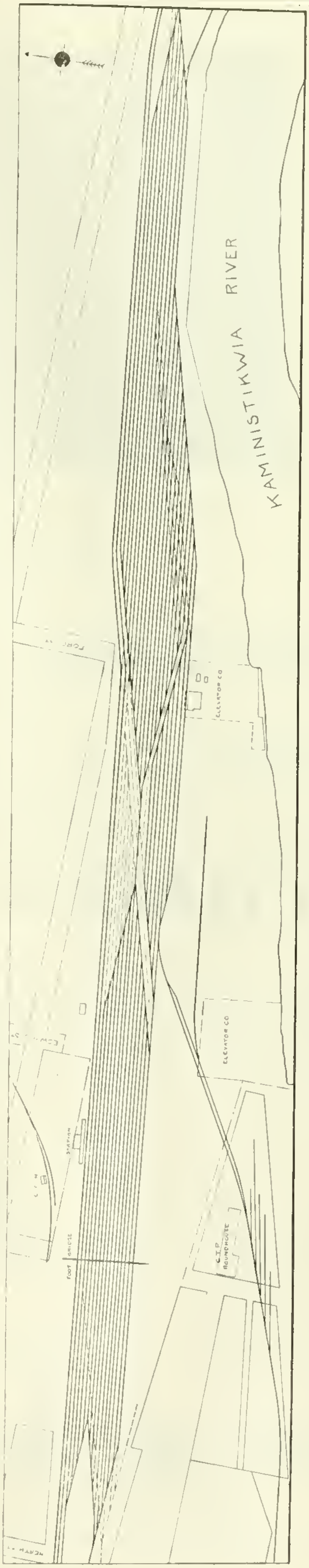
The Accounting Department in Connection with the Mechanical and Stores Department.

By A. A. Goodchild, Auditor of Stores and Mechanical Accounts, C.P.R., Montreal.

(Continued from October issue)

Hitherto, his work has been manual, but now the stock cards and books engage considerable of his attention, for he is required to know the exact condition of his stock to enable him intelligently to place requisitions for the depleted materials, he must know what the average monthly consumption is, how far his stock will provide for ordered requirements, what quantity if any he has to on order, and whether through some special or irregular condition he is likely to be called upon for more than his normal supply. Thus it has become necessary for him to devote considerable time and attention to book records. This may be, and frequently is, an entirely new experience for him. Coupled to this, under the system which is still largely in vogue, he must devote his attention to the accounts of his store. The debits and credits are impressed upon him as important factors. For this purpose he engages a clerk, if the funds will permit, who does the necessary book work and accounting for him and in his ignorance of the merest theory of such work, signs statements and records which are put before the management of the road.

It is general practice when a storekeeper keeps his own accounts, for him to keep those of the mechanical department also, the stores being very closely allied thereto, especially in a large plant where considerable manufacturing is carried on for road purposes. This necessitates his becoming a timekeeper, as the largest disbursements of mechanical accounts are for labor. He must become an authority on distribution of such labor, and exercise a prerogative in connection with shop system, contract work, etc. Is it not hopeless to expect a man with a training which I have briefly outlined, to meet such varied requirements? With all respect to the large number of able general storekeepers on this continent, I affirm that they cannot devote their attention to storekeeping, account-



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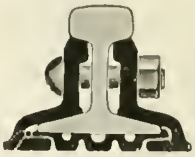

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ing, and shop systems, with justice to either branch of the work. Indeed, there is very little, if any, attempt at doing this, as a matter of fact. It is largely a fiction. The clerk is held responsible for statements, etc., issued under a storekeeper's signature for the reason that the storekeeper himself has no time to attend to such matters, and not infrequently looks upon them as of very secondary importance, or is lacking in a proper appreciation of the value of such duties, and he almost naturally develops a tendency to protect the store's accounts at the expense of those of the mechanical department. Quite apart from the question of integrity of the departmental officials, a feeling of dissatisfaction inevitably underlies all questions of disputed costs. Speaking from experience, I have no hesitation in affirming that it is a simple matter to load an account with items which should never be charged thereto, and so to manipulate accounts as to afford more than ample protection to the storekeeping department. There was a time in the recollection of many, when the necessity for proper accounting methods and men was not realized as it is today. Everything pertaining to the accounts, from the man who "wanted to know" to the underpaid clerk who was expected to "show," was accorded very little consideration, and one can almost understand how it came about that the storekeeper was looked upon as a sufficiently informed and responsible person to take charge of accounting and timekeeping, but today, and I venture to say, never more than today, it is considered proper and necessary for this work to be handled by men whose minds have been thoroughly trained thereto. A man who is held responsible for a proper system of timekeeping must have an organization at his back to properly handle all the varied problems relative thereto, and must be expert in matters of shop practice, the many vagaries of which have received much attention and investigation during the past few years of agitation and labor unrest.

If we look at the mechanical department, locomotive and car, we shall find the same high standard requirements of efficiency and capacity in all that relates to the practical working of these departments as was found to be necessary in the storekeeping department. In fact, bearing in mind the great organized efforts which are being made to raise the standard of apprenticeship in the various shops throughout the country, and the hard course of training which an efficient mechanic has to undergo before reaching the position of, say gang or shop foreman; and remembering that our universities are instinctively availing themselves of the vast openings offered for college trained men for the higher official appointments, and are educating and training young men in theory and practice of the mechanical railway, we can safely say the standard of excellence obtained is higher than in almost any other branch of railway work. They must keep up with the times, and with the pressure for improvements or betterments making for greater efficiency in power and rolling stock. Improved shop practice, improved tools and machinery, improved facilities at terminals for handling the power is increasing, and is brought about by the efforts of the management to obtain cheaper and yet more efficient results, in order that a proper equilibrium may be maintained between revenue and expenses. Yet we find, with few exceptions, that the practice is almost invariably for this department to have its accounting taken care of by another department, either the storekeeping or the auditing, I believe as much from choice of the mechanical officers themselves as from a recognition by the various managements of the sound business principle that authority over the accounts of a department must be separate from the authority governing the practical working of that department. Such a rule has behind it the undoubted authority and wisdom of those whose duty it has been to ensure the most perfect results and records of business transactions.

What of the duties of the auditor in his relations with the mechanical and the stores departments? Labor is, of course, the important factor in all mechanical accounts, and the ensuring to every employe in all shops and roundhouses, etc., of a just accounting for his time must receive first consideration. At the same time, necessary precautions against fraudulent claims for time not worked must be taken. It is also of prime importance that such time is properly distributed, or, in other words, that the account for which labor is performed is charged therewith, so that the correct cost of an engine or group of engines, a car or groups of cars, going through the shops for repairs or construction, etc., may be determined accurately. The cost of articles manufactured, such as bolts, nuts, forgings, wheels, castings, etc., must be compiled in such a manner as will make comparison with the market prices of such articles a simple proposition. No great advantage can accrue in manufacturing articles which can be purchased in the open market as cheaply or cheaper than you are making them. Shop costs systems have received a great deal of enterprising attention from what is yet a new branch of commercial life, the shop cost engineering profession. An elaborate system of store orders, requisitions, and labor distribution is entailed, much detail work of an accounting nature is necessary. Where piece work or contract systems are in force, it is necessary that the auditor should satisfy himself as to the completion of work paid for, in order that he may not certify for payment any unearned monies; but it must be recognized that much of this class of work requires mechanical experts to pass upon, and in many cases all the auditor can do is to see that proper safeguards are set up to prevent fraud or collusion. Other questions relating to labor, particularly those relative to shop efficiency, and job time records, come more or less under the observation of the auditor; but I am of the opinion that the less his department has to do with such matters the better, alike for himself and the mechanical department. They are the legitimate work of the mechanical staff, shop superintendent, foreman, clerks, and specialists, as the results obtained are purely of interest for economical reasons to the shops themselves, and all responsibility for their carrying out or development must devolve upon the shops. In none of these matters is the storekeeper an interested party, for even the item of labor on manufactured material, if properly cleared, does not affect his stock balances, whether the charges are correct or not. Both the storekeeper and the mechanical department, however, are concerned in all questions relating to material, and the essential duty of the auditor in this regard is to see that the storekeeper is properly credited with all materials delivered to or taken by the shop forces. At the same time he will see that the accounts for which material is charged are properly covered by approved requisition, and the purpose for which material is required is clearly set forth. If, as sometimes occurs, any unusual quantity is called for, the matter should be investigated, and he should satisfy himself as to the special requirements. Only such material as may be required for current needs should be requisitioned for, and bulk issues should not be allowed. He will endeavor in every way to protect the stores by seeing that they are credited with the value of all issues, and, at the same time, must be equally satisfied that nothing is charged against the mechanical department, except that which is justly chargeable thereto. It should be clearly understood that no advantage can accrue to the storekeeper by overcharging other departments, and with careful checking of prices by the auditor there could not exist much opportunity for doing so, should there be any such desire. Careful inventories of material on hand should be taken at least once a year, and from his records the auditor should be enabled to inventory a considerable portion of every storehouse much more frequently. Should there appear from such inventory a surplus, it should be transferred to the general books of the company for funding purposes, as an offset against future possible shortages, or application of credit made to the accounts which have been charged with material since previous inventory, pro rata according to the amounts charged. As regards accounting for material received from purchasing of the same, he will see that proper acknowledgment is received from the storekeeper of all such items, and by having communication with all requisitions, will satisfy himself that authorized officials have approved the purchasing the same. He will see that the records of its receipt are kept in such a manner as will ensure against the passing of duplicate invoices or acknowledgments, and also that proper stock book records are maintained of all intake or output of the various items of material. At the most convenient time such records must be gone over with a view of satisfying himself as to surplus or obsolete material, or undue quantities of any articles being carried at one point on the road while purchases of similar material are being made elsewhere. Obsolete material should not be destroyed, sold, or turned over to the scrap pile, until the authority of the department for which it was originally procured, is obtained, as the storekeeper's accounts must receive credit for whatever loss is sustained, and the expense be borne by this department. Inventories should, as far as possible, be taken by auditors independent alike of the stores' auditor and the storekeeper, thus obviating any possibility of irregularities, the desire being at all times that the most accurate records possible be obtained. In companies where the consumption of material represents from \$100,000 up to \$2,000,000 a month, there is ample scope for the auditor, without infringing on the natural field of the storekeeper's activities, which pertain to the receipt and disbursement of material and maintenance of proper stock records of same; or of the mechanical department, whose duty it is to see that proper material is supplied for their requirements, and proper and economical use made of same. Economy of operation of the stores department is usually determined by taking the percentage which the amount of stock issues bears to the total stock on hand, at the first of the month plus the receipts during the month. While not mathematically correct, this method, no doubt, gives a fair line on the results obtained. At all events for comparative purposes, year by year, it is absolutely good, while month by month the variable conditions of business require to be considered. Except in special cases, where, for instance, material must be purchased abroad, the stock should not average more than 60 days' supply, and in a large number of items, 30 days' is sufficient, but forethought and interchange of ideas and plans between the storekeeper and the mechanical department, is at all times desirable, and even necessary, if this standard is to be maintained, also it

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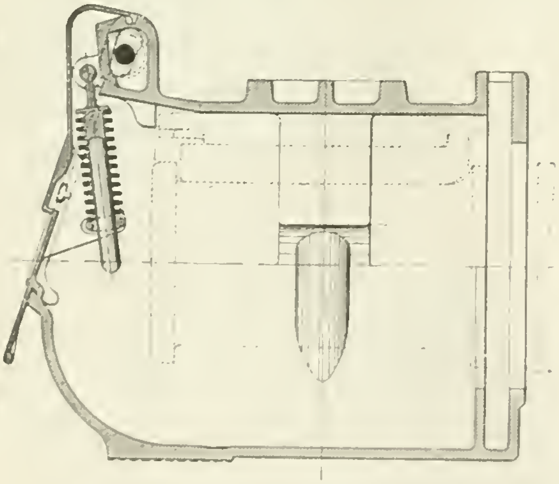

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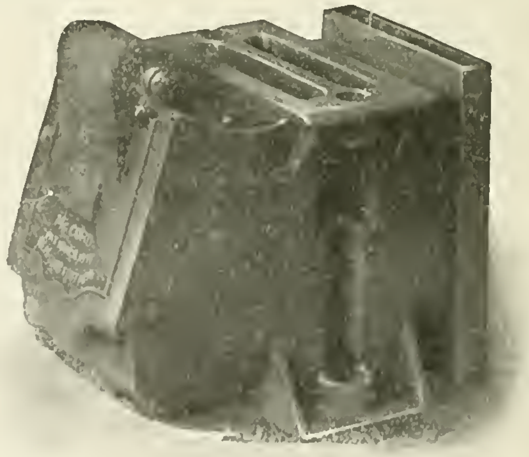

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should be remembered that the question of economical operation can be driven so far as to entail distinct loss to the companies. The auditor and general storekeeper should be vitally interested in these percentage figures, as they afford a ready means of determining the efficiency of the storekeeper. Continued poorness in this respect is a matter that calls for the general storekeeper's intervention, and sometimes a change of departmental officials.

A. Lowes Dickinson, in speaking on the necessary qualifications of an auditor, states: "There is probably no other profession, not even excepting law, which requires of its members, if they would succeed, a higher standard of education, experience, and general business knowledge. The moral qualities called for are so high that it should place the profession at the head of all which come in contact with business affairs. The lawyer's duty is first of all to his client, and that duty frequently compels him to avail himself of technicalities and other means of enabling that client to evade the law and its penalties, but the auditor or public accountant has only one duty to his client and to the public, and that is to disclose to him or for him 'truth, the whole truth and nothing but the truth,' so far as his abilities and special training to that end enable him to ascertain it. No legal quibble will save him from moral condemnation if he fails in his duty, no juggling with words or phrases will absolve him from responsibility, moral and often legal; for results that he has reason to know are not what they seem to be, or which having regard to his special training in business affairs, and the accounts relating thereto, he ought to have known did not represent the facts. Errors there may be, and for errors made after full and proper precaution taken and due care exercised, no responsibility will lie. But there is no profession in which the results of careless errors or misstatements will more certainly bring retribution."

In looking over a catalogue of the New York School of Accountancy recently, I came across the following paragraph regarding a public accountant: "The public accountant is expected to have a knowledge of the underlying principles of the laws that govern business relations, and of the practical applications of such principles, a thorough knowledge of the principles of modern accounting, and of their scientific application to the keeping and stating of accounts, in all lines of business enterprise, and whenever settlements involving money are to be made, he is expected to be able to solve the most abstruse and intricate problems that arise in any branch of accounting, and as an auditor, he is expected to have a broad general knowledge of business with the intuition of the detective, as well as the skill of an accountant."

At first sight these statements may appear to attach a somewhat exaggerated importance to the functions of an accounting officer, yet on closer analysis they do nothing more than express the merest truth, and I will not detain you with any discussion on the matter, but composed as the Canadian Railway Club very largely is, of mechanical and storekeeping representatives, I should like to emphasize the fact that the auditor, or other accounting officer, in the proper carrying out of his duties is absolutely impartial, and is independent of all forces whatever might be brought to bear upon him were he affiliated or subject to other departmental officials. He has no axes to grind, his duty being simply to set forth the actual financial facts of any particular operation, or set of operations, for the information of the management. This fact should make for harmonious relations between departments, and I feel sure you will agree that anything which will facilitate such a desirable result is of great material benefit. Otherwise good individual enterprise is ofttimes invalidated by the knowledge that the heads of departments are at loggerheads, which knowledge invariably percolates through the respective staffs and finds expression in inattention, carelessness, or cussedness, and so makes for general inefficiency. You have all seen this sort of thing at work, and know exactly what I have reference to.

Auditing or accounting by an independent officer should make for real efficiency in the departments concerned. I speak for myself in this matter as much with regard to the stores and mechanical departments, and I welcome an outside auditor, who may be authorized to do so, going over the methods and analyzing the principles upon which the work of my department is conducted; showing up any loopholes or weak spots, in order that whatever remedy is found necessary may be applied. Not only this, but an auditor must keep his mind in a constant state of receptiveness. Many a good suggestion emanates from unexpected quarters, and the practical knowledge of a shop superintendent, a foreman, or a clerk should not only not be ignored, but should be sought and encouraged with the view of developing the utmost efficiency in all that pertains to the employer's interests. Differences of opinion will, and must exist, and in such cases the auditor cannot but be paramount in his rulings unless a higher authority intervenes. This efficiency is after all the raison d'etre of the existence of the auditing department as it is today, and higher ideals of workmanship must naturally develop as the efficiency of the accounting department is evidenced in the various departments of railroading. The fruits themselves must be the evidence of the good workmanship, and not the self-compiled blue prints or glowing picture books with the halo beautifully worked in to add the necessary touch of sanctity to the artist, with the horns prominently displayed in the caricature of his unfortunate rival. Rivalry and competition are the soul of trade, also of railway efficiency, and are, therefore, eminently desirable, but honesty and integrity must go hand in hand therewith. Systems which lay bare all attempts to mislead shareholders, directors, presidents, or whoever it may be, and place before them only honest, unbiased results, must be more and more appreciated and ever increase in value to the vast corporations in which they are employed, and I believe you will find in such corporations more integrity and greater efficiency in all departments, officers, and men who are ready to be judged by the high quality of their accomplishment, and who recognize the desirability, and appreciate the arduous and somewhat thankless tasks of the accounting department.

The present status of the science of auditing and accounting is not at all final. There cannot be any finality in connection with it any more than with other branches of railroad science. Development must continue. A motto which impressed me very much, as a youngster, and which, if I remember correctly, was used by a Glasgow manufacturer as a part of his trade mark, reads thus: "While I live I grow." Life and growth are synonymous. Stagnation spells death. There are plenty of good men, very much alive, busy in the accounting world; new men with advanced ideas are constantly arriving on the scene, and I look forward hopefully, knowing that the value and importance of the work is becoming recognized as making for harmony, efficiency and truth.

The foregoing paper was read before the Canadian Railway Club recently.

Sink Holes on the Duluth, Winnipeg and Pacific Railway.

The Duluth, Winnipeg and Pacific Ry., a subsidiary of the Canadian Northern Ry., has encountered a number of bad sink holes on the extension now being built between Duluth and Virginia, Minn. Many of these were filled directly with small dump cars, but in two instances the surface did not break through until after the track was laid over them and construction trains were running. At the larger one, at mileage 56, soundings were taken for a distance of about 1,500 ft., showed a depth of from 20 to 45 ft. of soft mud. The surface crust appeared to be fairly solid and it was hoped that it would hold up, but it broke through early last spring after trains had been running over it but a short time. About the middle of April this hole became so bad that it was impossible to operate trains over it, and steps were taken to completely fill it.

To support the track, timbers were laid about 30 ft. out on each side of the centre line and parallel with it. Large white and Norway pine and tamarack logs were laid across these outside timbers at intervals of 3 ft. The track was then laid over this grillage and the cars were dumped between the cross timbers. In the first 100 ft. of the hole an average of 200 12-yd. cars were dumped each day for three weeks before the material appeared above the surface of the water, for after the crust of the swamp was broken there was nothing immediately below the track but water and liquid mud. About a week after soundings were begun new soundings were taken, and where they had formerly showed a depth of soft material of 35 ft. they now showed a depth of 60 ft., indicating that there were harder layers of material in the soft mud. This was borne out by the action of the embankment which would be brought up nearly to grade, and would then drop suddenly a distance of 15 or 20 ft.

After spending over six weeks of steady work at this hole, and after filling only about 500 ft. of it, it was decided to try to prevent the rest of the swamp from breaking through. Contractors were ordered to crossway it with heavy timbers for a width of 50 ft. and a depth of at least 2 ft. where it had not already broken through, which work is now under way. In constructing this grillage, timbers are first laid close together longitudinally and with broken joints for the 50 ft. width. On top of this cross timbers 50 ft. long are laid close together. A layer of brush is put on top of this and the embankment dumped on the brush. In addition to this crosswaying a dredge is now digging a ditch 12 ft. deep for a distance of two miles to drain the swamp and solidify its surface. It is expected that these measures will remedy the trouble at this point.

At mileage 69 two sink holes were encountered close together, with a small ridge between them. Each hole was about 600 ft. long, and one had a maximum depth of 35 ft., while the other showed no bottom at a depth of 50 ft. Both of these have been filled solidly, using the same method as at mileage 56. They required about six weeks' work, dumping an average of 180 12-yd. cars per day.

This line is being built under the direction of H. T. Hazen, Chief Engineer, to whom we are indebted for the foregoing information.—Railway Age Gazette.

N. J. Grace, Travelling Passenger Agent, White-Star Dominion Line, and at one time New England Passenger Agent, G.T.R., at Boston, Mass., is reported to have died suddenly Oct. 1.

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Telephone Train Dispatching.

By A. Dwight Smith.

[The following is the third of the series of articles on this important subject, the two previous ones having appeared in our Sept. and Oct. issues.]

The most important feature of the telephone train dispatching system is the selector. A large number of these devices have been developed, but those which have proved successful can be counted very quickly. If some means were not provided so that the dispatcher could call a way station individually and keep the bell ringing as long as he wishes, telephone train dispatching would probably not be practical.

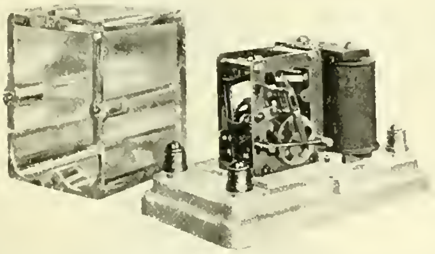
Fig. 1.—The Gill Selector.

The selector is an electro-mechanical device by means of which the dispatcher is able to signal the station he wants without calling any other station. One is placed at every station and at the dispatcher's office is a corresponding key to operate it The selector must not only be able to "select," as its name indicates, but it also must not affect the telephone line in any harmful way as regards talking. It must be possible to connect as many of these instruments to the circuits as may be desired and transmission is not affected. This means, of course, a very careful electrical design, unless expensive auxiliary apparatus is to be used, and selectors in general use at present (all of the bridging type) meet this condition in a most satisfactory manner. There are two selectors of this individual calling type in extensive use.

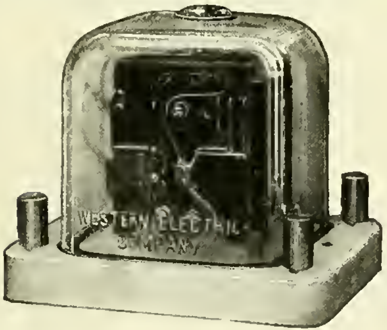

Fig. 2.—The Western Electric Selector.

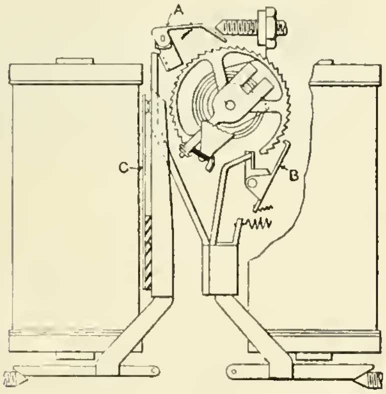

Fig. 3.—Schematic Diagram of Lever Movements, Western Electric Selector.

1. The Gill selector, fig. 1, was developed some years ago for use on telegraph circuits to call an operator in on the line and did away with the long continued calling of Morse characters. The essential features of this selector are the step-up selector wheel and the time wheel which is normally held at the bottom of an incline track. The operation of the selector magnet forces this wheel to the top of the track and allows the wheel to roll down to home. If the magnet is operated rapidly, the wheel does not get clear down before being pushed back again by an arm connected to the armature. The small pin on the side of the pawl engaging the selector wheel normally opposes the selector wheel teeth near their outer points. When the time wheel rolls down to the bottom of the track, however, the pawl is allowed to drop to the bottom of the tooth. Some of the teeth on the selector wheel are formed so that they will effectually engage with the pawl only when the latter is in normal position, while others will engage only when the pawl is at the bottom position, thus innumerable combinations can be made which will respond to certain combinations of rapid impulses with time intervals between. The correct combination of impulses and intervals steps the selector wheel clear around so that a contact is made. All other selectors fail to reach contact position, because at some point in their revolution, the pawl has slipped out, allowing the selector wheel to return home.

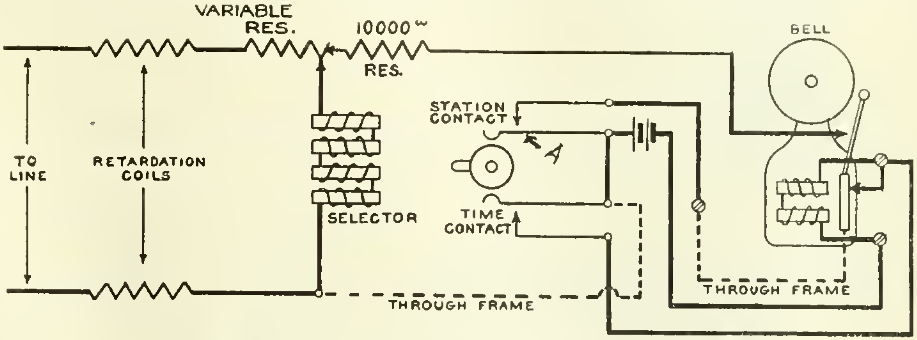

Fig. 4.—Wiring Diagram, Western Electric Selector. (Local Battery).

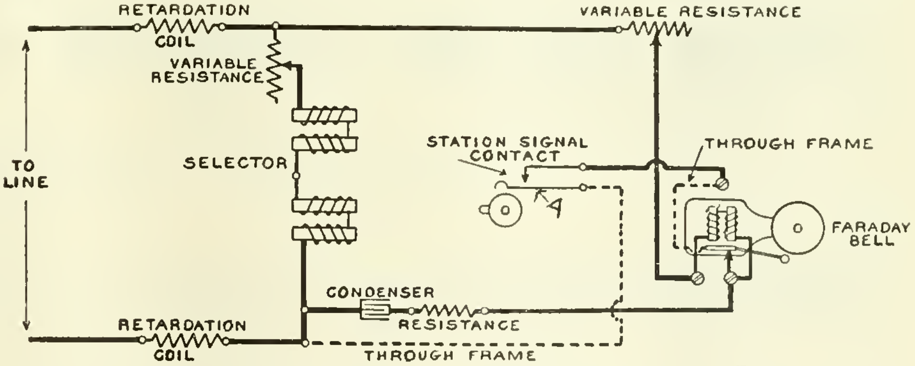

Fig. 5.—Wiring Diagram, Western Electric Selector. (Central Energy).

2. The Western Electric selector, fig. 2, is the newest, and is on the step up principle. The apparatus consists of two electro-magnets connected in series, and mounted by means of a brass frame on a porcelain base. Each magnet is equipped with two spools, the cores of which differ somewhat, one of the magnet's cores being covered with copper sleeves to produce slow action.

Fig. 3 shows the schematic diagram of the lever movements. Upon the fast acting lever is mounted a stepping-pawl A, designed to engage with a ratchet wheel, to which is fastened a platinum pointed arm, mounted on the frame work as the retaining-pawl B, designed to retain the teeth as they are stepped around. Attached to the slow acting armature are two fingers, designed to engage with the two pawls in such a way that when in normal position with the slow acting armature the two pawls will be held out of engagement with the wheel. While in the operated position, the fingers will permit the pawls to engage with the wheel.

This selector is operated by first placing on the line an impulse of current which operates both magnets. There is then placed on the line a succession of shorter impulses which cause the stepping magnet to oscillate back and forth and step the wheel around the desired number of steps. The speed with which these impulses are sent out on the line, however, does not permit the slow acting relay releasing. When the desired number of steps are taken, the contact is made and the current is held on the line, thus ringing the bell. As soon as the battery is removed from the line, the slow acting magnet releases, which raises the pawls and permits the wheel to fall back to normal position under the influence of a retractile spring.

When a station is called, say for instance, no. 15, all the selectors on the circuit take 15 steps, and the selectors at the first 14 stations will momentarily make their contacts as they step by, and the local battery at these stations close momentarily. This, however, will not cause the bell to ring, because the selector operates at the rate of 8 to 10 steps per second, and the arrangement of contact spring C, fig. 3, is such that it follows the movement of the stepping lever, and during a stepping cycle makes contact with the contact arm in but the small percentage of one-tenth of a second, the time necessary to take a step.

The contact arm of the wheel in its normal position rests against an insulated stop piece. On the other side of this stop piece is fastened a platinum contact which will engage with the contact arm when the stepping wheel is revolv-

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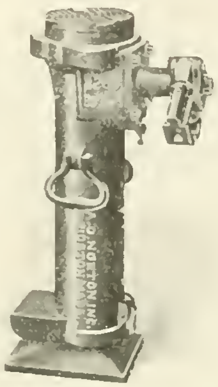

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ed to its limiting position. This stop piece is angularly adjustable and permits easy adustment of any selector for any station. This makes this selector a universal type which is very desirable in emergency. The selector requires 10-milliamperes at 37 volts for its operation, and calls at the rate of one second per 10 stations. It is sealed in a glass dustproof cover but can be easily opened for maintenance work. Fig. 4 shows the local battery way station circuit used with this selector. There are two 40-ohm choke or retardation coils placed one on each side of the selector as a protection against lightning. The selector is wound to 3750 ohms and is connected in series with a taper resistance across the line to produce equal operating current in all bridges.

When a station is called, contact A, fig. 4, is made. It closes the local battery through the vibrating bell. The bell is also equipped with an auxiliary contact which makes and breaks a 10000 ohm resistance across the line, and gives the dispatcher an "answer back"—a positive sign that he has rung the bell.

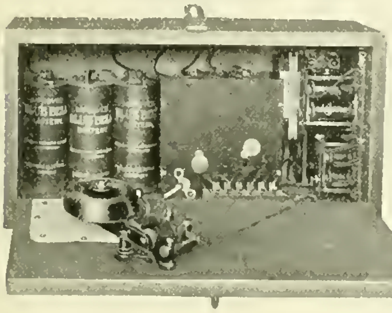

Fig. 6.—Cummings-Wray Selector.

This selector is also arranged to ring a bell by means of a main line battery located at the dispatcher's office, thus eliminating the local battery at the way station. Fig. 5 shows the apparatus so arranged.

All selectors are arranged with a back contact, by means of which time signals can be sent out to each way station on the line simultaneously for the comparison of clocks—a feature that is not obtained on any other type of selector.

The Sandwich selector is another type which is on the step-up principle. It consists of a stepping segment, stepping magnet and one locking magnet. The locking magnet controls the locking pawl and is normally one of engagement from the stepping segment. This is also true of the stepping pawl.

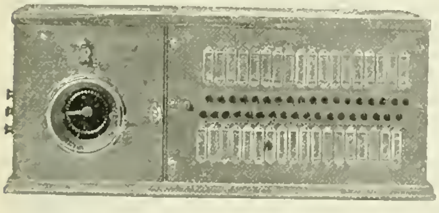

Fig. 7.—Cummings-Wray Calling Cabinet.

The locking magnet has two windings with different resistances, one being approximately 20 ohms, while the second spool is of rather high resistance. One terminal of the low wound magnet is connected to a platinum point and this contact is closed when the locking armature pawl is pulled down.

The circuit arrangement for this magnet system is such that the low wound magnet will get a portion of the line current from a shunt winding, and when the armature pulls down a magnet winding, has a local closed circuit through this contact on the armature. Thus the magnet is made slow acting since the low resistance winding has much the same effect os a copper sleeve over the core. When current is put to the line, this armature is put down as is also the stepping armature and as the circuit is interrupted, the stepping magnet will function quite rapidly, advancing the segment, while the locking magnet will not release. The stepping segment is therefore held in an advanced position.

The only successful multiple calling apparatus in service is the Cummings Ray selector, (figs. 6 and 7), which is installed on some of the western railways in the United States but is not used on any of the installations in Canada. This is based on the principle of synchronous clocks, but has of course a serious obection in that all the clocks on the circuit must be wound once a week. Indications point to a discontinuance of this system.

◆

Fire Precaution Regulations for Railways in British Columbia.

The Minister of Railways for British Columbia issued recently, regulations governing the construction and operation of railways within the province, with a view to the protection of forests from fire. The right of way is to be cleared of all perishable matter, and everything, not to be used, must be burned under a permit from a provincial fire warden. Nothing must be thrown outside the right of way, which must at all times be kept free from dead timber, brush, dry grass and other inflammable matter. In specially dangerous places the Minister may direct the cutting and clearing of fire guards on lands adjacent to the right of way. The companies must provide sufficient appliances at suitable points, and their employes, as well as the men employed by contractors, are liable to be called upon to aid in subduing forest fires in proximity to the right of way. The debris on Crown lands, where the company has cut, under permit, any timber, must be dealt with as directed by the Minister of Lands.

Following are the rules with respect to safety appliances on locomotives:

Every locomotive having an extension smoke-box shall be equipped with netting mesh, the mesh to be not larger than 2½ x 2½ per in. no. 10 Birmingham wire gauge, and to be placed in the smoke-box so as to extend completely over the aperture through which the smoke ascends; the openings of the said mesh not to exceed a quarter of an inch and one sixty-fourth of an inch to the square inch. On every engine equipped with a diamond stack the mesh to be not more than 3 x 3 per in. of no. 10 Birmingham wire gauge, and to be placed across the top of the stack so as to completely cover the same; the opening of the said mesh not to exceed three-sixteenths of an inch and one sixty-fourth of an inch to the square inch.

The openings at the back of the ash-pans on every locomotive must be covered with heavy sheet-iron dampers, or with screen-netting dampers, 2½ x 2½ per in. of no. 10 Birmingham wire gauge; such dampers to be fastened either by a heavy spring or a split cotter and pins.

Overflow pipes from the injectors must be put into the front and back part of the ash-pans and used from April to October, inclusive.

During the months from April to October inclusive, wire screens must be fixed to the windows of all smoking compartments of railway carriages.

The remaining sections of the rules provide for the inspection of these safety appliances by the railway officials at least once a week, the keeping of the records of such inspections, and for inspections at reasonable times by the Government fire wardens.

◆

Canadian Northern Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases, compared with those for 1910-11, from July 1, 1911:

	Earnings.	Expenses.	Net Earnings.	Net Increase
July	$1,475,900	$1,114,300	$361,600	$13,400
Aug.	1,420,600	1,105,900	314,700	51,700
	$2,896,500	$2,220,200	$676,300	$65,100
Inc.	578,400	513,300	65,100	....

Approximate earnings for September, $1,576,400, and for two weeks ended October 14, $941,400 against $1,279,600 and $667,700 for same periods 1910.

Milage operated during above periods, in 1911, 3,711, against 3,297 in 1910

◆

Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases, compared with those for 1910-11, from July 1, 1911:

	Earnings.	Expenses.	Net. Profits.	Net Increase.
July	$ 9,661,818.14	$5,958,789.81	$3,703,028.33	$218,408.74
Aug.	10,421,904.42	6,346,333.41	4,075,571.01	383,898.68
	$20,083,722.56	$12,305,123.22	$7,778,599.34	$602,307.42
Inc.	1,959,176.57	1,356,869.15	602,307.42	....

Approximate earnings for September, $9,834,000, and for two weeks ended October 14, $4,906,000, against $9,115,000 and $4,577,000 for same periods 1910.

◆

Grand Trunk Railway Earnings, Expenses, Etc.

The following figures show the earnings and expenses of the G.T.R., C.A.R., G.T. Western Ry. and D.G.H. & M.R., for Aug., as compared with those for Aug., 1910:—

GRAND TRUNK RAILWAY.

	1911.	1910.
Earnings	$3,548,500	$3,067,600
Expenses	2,597,800	2,213,700
Net earnings	$ 950,700	$ 853,900

CANADA ATLANTIC RAILWAY.

	1911.	1910.
Earnings	$ 189,000	$ 162,500
Expenses	175,600	157,900
Net earnings	$ 13,400	$ 4,600

GRAND TRUNK WESTERN RAILWAY.

	1911.	1910.
Earnings	$ 572,500	$ 498,200
Expenses	473,400	399,500
Net earnings	$ 99,100	$ 98,700

DETROIT, GRAND HAVEN AND MILWAUKEE RY.

	1911.	1910.
Earnings	$ 192,650	$ 156,600
Expenses	153,950	144,700
Net earnings	$ 38,700	$ 11,900

Approximate earnings for Sept., $4,409,559, and for two weeks ended Oct. 14, $1,981,330, against $4.087,955 and $1,843.722 for same periods 1910.

TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate from July 1 to Sept. 30:

	1911.	1910.
Grand Trunk Ry.	£2,125,503	£1,813,107
Canada Atlantic Ry...	113,237	95,403
Grand Trunk Western Ry.	346,035	292,226
Detroit, Grand Haven and Milwaukkee Ry.	117,200	95,064
Totals	£2,701,975	£2,295,800

◆

A large number of mules have been imported into Canada from Mexico for use on Canadian Northern Ontario Ry. construction between Gowganda Jct. and Port Arthur, Ont.

The hearing of the case of the Province of Alberta against the Royal Bank in connection with the money received from the sale of the bonds on the Alberta and Great Waterways Ry., was concluded at Edmonton, Alta., Oct. 12, and judgment reserved.

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(From Daily Papers)

"Wednesday night B——— forgot to deliver an order to hold Eastbound Passenger Train No. 6, and only the fact that the Electric Headlight of the oncoming Passenger train was seen at a great distance by the Engineer of the Westbound Freight prevented a head end collision in the ——— Canyon near ———. The warning light was seen in time to enable the freight to get back on to the siding at ———."

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CHICAGO

Canadian Ticket Agents' Association Annual Meeting.

The twenty-fifth annual meeting of the members of this Association was held at Sault Ste Marie, Ont., Oct. 4, 5 and 6. The attendance was not as large as usual, there being about 80 members present, and a large number of ladies. The Secretary-Treasurer, E. de la Hooke, as usual, had all arrangements most carefully made.

The business meeting was held Oct. 4, the President, J. F. Dolan, city ticket agent, Richelieu & Ontario Navigation Co., Montreal, being in the chair. Mayor Munro, and C. H. J. Jones, President, Board of Trade, welcomed the members and F. W. Churchill, C.P.R. ticket agent, Collingwood, Ont., responded on behalf of the Association.

The Secretary-Treasurer, E. de la Hooke, presented his annual report, showing that 25 new members had been enrolled during the year, but that 18 of the old members had not paid their subscriptions, so that there was a net gain of seven, the membership being 205 against 198 a year ago. The balance on hand at the beginning of the year was $169.58 and the receipts $669.01, a total of $838.59. The expenditures were $516.13, leaving a balance of $322.16, the largest in the Association's history.

On the question of Transportation, Mr. de la Hooke said:— "The matter of the disabilities as to free transportation in the United States, under which many of our members rest, owing to the laws laid down by the Interstate Commerce Commission, has received attention during the year. In accordance with resolution passed at the Quebec meeting your Secretary wrote G. A. Cullen, General Passenger Agent of the Delaware, Lackawanna and Western Ry., who was the accredited representative of the General Passenger and Ticket Agents' Association to our meeting to take the question up in our behalf and endeavor to interest his Association in the matter. He was given the salient points in the situation and in replying in very courteous but not encouraging terms stated that he would do all he could to advance our claims."

Reference was made to the death of four members during the year, C. E. Morgan, of Hamilton, W. Bunton, of Peterboro, J. C. Whichelo, of Parry Harbor, and W. F. Bleecker, of Marmora.

The President, J. F. Dolan, read his address in which he thanked the Association for the honor conferred on him in his election. He spoke approvingly of the selection of Sault Ste. Marie for the meeting, referring to it as a place where, "while physical beauties are everywhere to be seen, they are made to join hand in hand with commerce and industry." Feeling references were made to the members who had died during the year. He suggested a change of name to "The Canadian Association of Passenger and Ticket Agents," so as to allow general, district and travelling agents to become members.

A very interesting letter was read from Barlow Cumberland, Vice President of the Niagara Navigation Co., and one of the earliest members of the Association, regretting his inability to be present and referring to the work performed by the Association.

H. G. Elliott, General Passenger Agent, G.T.R., Montreal, as the representative of the American Association of General Passenger and Ticket Agents, and M. H. Bohreer, D.P.A., Mobile and Ohio Rd., Chicago, representing the American Association of Passenger Agents, addressed the meeting.

As suggested in the President's address, an amendment to the constitution was introduced to make eligible for membership, district passenger agents, general agents, passenger department, travelling pasenger agents and steamship agents doing business in Canada. After a good deal of discussion, this motion was carried and the name of the association was changed to Canadian Association of Passenger and Ticket Agents.

S. B. Morris,
President, Canadian Ticket Agents' Association.

W. Jackson,
Who has attended twenty-five consecutive annual meetings of the Canadian Ticket Agents' Association.

The following officers were elected for 1912:— President, S. B. Morris, C.P.R., Rodney, Ont.; First Vice President, G. J. Alexander, G.T.R., Richmond, Que.; Second Vice President, J. Kidd, C.P.R., Goderich, Ont.; Third Vice President, C. B. Janes, C.P.R., Orillia, Ont.; Secretary-Treasurer, E. de la Hooke, London, Ont.; Executive Committee, W. Jackson, C.P.R., Clinton, Ont.; M. McNamara, G.T.R., Walkerton, Ont.; F. W. Churchill, C.P.R., Collingwood, Ont.; W. McIlroy, C.P.R., Peterboro, Ont., and C. E. Horning, G.T.R., Toronto.

C. A. Cairns, G.P. and T.A., Chicago, and North Western Ry., Chicago, presented W. Jackson, C.P.R., Clinton, Ont., with a silver tray on behalf of the Association's guests, in appreciation of his untiring work in its interests and in commemoration of his attendance at every one of the twenty-five annual meetings. Mr. Cairns prefaced the presentation with a very interesting and amusing speech.

Social Features.

C. H. J. Jones, President, Board of Trade. W. B. Moorhouse, C.P.R.; W. R. Thom, Northern Navigation Co., and H. J. Herrold, A. C. & H.B. Ry., all of Sault Ste. Marie, had charge of the entertainment features of the programme and are to be congratulated on the efficient manner in which they were carried out.

On the evening of Oct. 4, a smoker was held for the men at Columbia Hall and an interesting boxing bout was given. The ladies being taken to the theatre and entertained at supper afterwards at the St. Charles Hotel. On the morning of Oct. 5, the whole party was conducted through the Lake Superior Corporation's steel plant. At noon they boarded the steamboat City of Chatham from the Commercial Dock at the plant and were given a trip through the locks and up the St. Marys river, refreshments being served on board. In the evening a reception and informal dance were given at Columbia Hall. On Oct. 6, the entire party were taken as the guests of the Algoma Central and Hudson Bay Ry. by special train to Pangissin, 68 miles north of Sault Ste. Marie, which is the farthest point to which the line is at present in operation and where a camp dinner was served.

The following presentations were made on behalf of the Association:— W. B. Moorhouse, ticket agent, C.P.R., silver chafing dish; C. H. L. Jones, President, Board of Trade, cut glass pitcher; H. J. Herrold, General Agent, A.C. & H. B. Ry., cut glass lemonade jug; W. R. Thom, Northern Navigation Co., cut glass pitcher; J. J. Brignall, Travelling Passenger Agent, C.P.R., cut glass bowl.

Transportation in the United States.

As stated in our last issue, W. McIlroy, City Passenger Agent, C.P.R., Peterboro, Ont., who was appointed to represent the Association at the American Association of General Passenger and Ticket Agents' annual meeting in St. Paul, Minn., was unable to attend, so he sent a written communication, in which, in referring to the C.T.A.A.'s Quebec meeting last year, he said:— "The subject of free transportation over U.S. railways to members of the C.T.A.A. who are not wholly employed in the ticket business, was again brought up and discussed, and I have been requested to bring the matter before you again. When the payment of commissions to agents on tickets sold by them over foreign lines were cut off some years ago, it was followed by a ruling of the Interstate Commerce Commission that no ticket agents, except those wholly employed in railway business, should secure free transportation over U.S. lines. The members of our Association who come under the ban by this ruling are successful business men in the smaller towns throughout Canada. They are paid commission for selling tickets by the railways they directly represent. They also sell coupon tickets over foreign lines, both in

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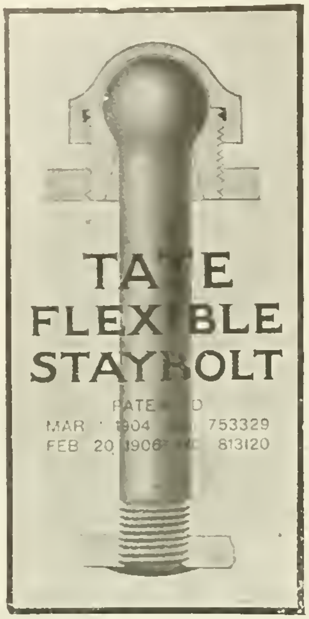

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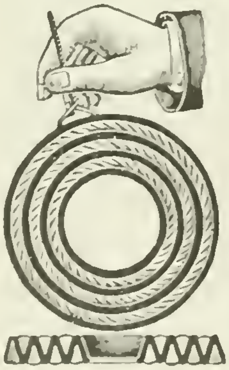

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Copper Gasket

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is for valves of Jenkins or similar types.

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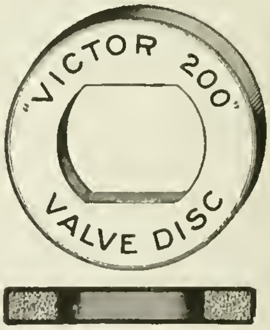

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Canada and the United States. They can get transportation over foreign lines in Canada at least once a year through the Secretary of our Association, but they get nothing from U.S. lines. The members of our Association want to go to the United States and familiarize themselves with the railways and the wonders of that great country, but they are barred out as a body by the Interstate Commerce Commission's ruling. Is there no remedy? Could not free transportation be arranged for once a year for the annual meeting to all the members of our Association? I solicit your earnest endeavours on our behalf."

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Canadian Pacific Railway Co's. Annual Meeting.

The 30th annual meeting of shareholders was held in Montreal, Oct. 4. Sir Thos. G. Shaughnessy, President and Chairman of the Board, in moving the adoption of the report, which was published in our last issue, said:

The volume of passenger and freight traffic even exceeded our expectations, with the very gratifying result that your gross operating revenue for the year was over $104,000,000. The additional acreage under crop this year at the estimated average yield per acre will furnish largely increased tonnage for the transportation companies, and, although the quality of wheat has been injuriously affected in some portions of Western Canada where bad weather prevailed during the harvest season, it is apparent that the financial return to the producers will be very large indeed.

The expenditures in the year for the upkeep of the property were on quite a liberal scale, and as a consequence your railway and equipment are in an excellent state of efficiency.

It is expected that the 75 miles of the Georgian Bay and Seaboard Ry. between Coldwater and Bethany, Ont., a portion of the shorter and more economical route between Georgian Bay and the head of ocean navigation, will be completed this autumn, and such progress has been made with the construction of the various branch lines in Western Canada that about 374 miles will be finished within the next couple of months and added to the mileage that is being operated. It will not only be desirable but necessary to continue to build year by year a good many miles of these branch lines to provide present and incoming settlers with transportation facilities, more miles, indeed, than you would have been called upon to provide had the Dominion and Provincial Governments who have pledged their credit almost beyond the limit of prudence to assist other railway companies insisted that these companies should open up new territory, instead of building their lines through settled sections of the country where ample transportation facilities already existed.

It is evident that on some portions of the system the time is almost at hand when a single track will not accommodate your growing traffic without congestion and increased expense, and, therefore, your directors are of opinion that the double track should be continued westward from Brandon to Medicine Hat, about 524 miles, as rapidly as the work can be done without undue interruption to the train service.

With all that has been done during the past seven or eight years, we find that at points like Montreal, Toronto, Ottawa, Fort William, Winnipeg, Calgary and Vancouver, we must still further enlarge our accommodation for passengers and freight. Nearly all of the requisite property has been acquired, and the various works will be carried to completion as soon as possible. It is important that modern and commodious shops should be provided for the maintenance and repair of the large number of cars and locomotives now in service on your lines in Alberta, and it has been decided that for present and future convenience and economy Calgary will be the best location for these shops, provided that suitable arrangements can be made with the city authorities.

The outcome of the first season's work on the irrigation system in what is known as the eastern block is very gratifying. The great dam at the Horse Shoe Bend of the Bow River, south of Bassano, is almost finished, and before the close of the season upwards of 6,000,000 yards of material will have been moved in making ditches. This should ensure the completion of the work within the next two years, but, of course, some of the land can be served with water before that time.

After more than twenty years of immunity from serious accident of any nature to our fleet on the Pacific Ocean, we were so unfortunate as to lose the s.s. Empress of China, wrecked on the coast of Japan, July 27. Another steamship to take the place of the Empress of China, but twice as large and costly, will be provided at the expense of the steamship replacement fund.

Very favorable business conditions exist throughout all the territory served by your lines in Canada, and there would appear to be ample justification for expecting their continuance. West of Lake Superior there is a universal spirit of confidence and buoyancy, and, while there is some apprehension that real estate values are, in certain localities, on rather a speculative basis, there is room for serious error in this regard because of the business strides that are being made by almost every city and town of any importance. It will be disappointing if the immigration next year is not larger than ever before, and with our country's advantages so well known and recognized all over the world, there would appear to be no good reason why we should not have an increasing number of new-comers year by year for a long time to come. If this be the case there will be no halt in the activity and progress of the West. The commerce and manufactures of Eastern Canada are in a thriving state, as indicated by the quantity of goods that is being shipped. The increase in the demand for a great many articles previously manufactured abroad, or that had only been made in Canada in a small way, encouraged the establishment of new industrial works, as well as the enlargement of existing ones, thus furnishing employment for thousands of additional workmen, so that in point of increased population Eastern Canada has quite kept pace with the West. With the continuance of good times in the agricultural districts the commercial interests of the country will be proportionately benefited, and those who are engaged in manufacturing enterprises should feel warranted in making such additions to their works and employing such additional workmen that large consumers of material in Canada will no longer be compelled to go abroad to meet any portion of their requirements.

The shareholders, the directors and the executive are to be congratulated on having a most capable staff of officers and employes, to whose united efforts the signal success of the company's operations may be attributed. Since the close of the fiscal year the company and the board of directors met with another serious loss by the death on July 13 of Robt. Meighen, who joined the board in 1908. He was a good citizen, a capable and upright business man, and had been a warm friend and supporter of the company from its inception. Sir Wm. Whyte, who as Vice President was for many years in special charge of the company's interests west of Lake Superior, and who recently retired from active service, has been elected a member of the board to fill the vacancy caused by Mr. Meighen's death.

Following the unanimous adoption of the report, the following resolutions were adopted:

That the lease of the South Ontario Pacific Ry. be sanctioned and approved, which lease, amongst other things, demises to this company for 999 years, the whole of the railways and branches which the S.O.P.R. Co. has been authorized to construct, and whether constructed or to be constructed, including a railway now under construction from Guelph Jct. to Hamilton, about 16½ miles, and all other railways or branches hereafter constructed by that company, and their appurtenances, at an annual rental of a sum equal to the interest payable on all bonds at a rate not exceeding 4% per annum, payable half-yearly, which the lessor may issue at the request of this company expressed in writing, the payment of such interest being guaranteed by this company, and the aggregate of all such bonds outstanding not to exceed $30,000 a mile of railway either constructed or under contract to be constructed.

That the lease from and agreement between the Alberta Ry. and Irrigation Co. and this company be sanctioned and approved, which amongst other things, demises to this company, for 999 years, the whole of the railways and branches of the lessor company, in Alberta, constructed, or to be constructed, and their appurtenances, and all the corporate powers possessed by it and such portion of all the other powers, properties, etc., in so far as they are or may become necessary for the working of the said railways and branches, at an annual rental equal to 6% per annum on the whole of the outstanding ordinary capital stock of the lessor company, viz., $3,250,000, and which lease also includes the sale and conveyance to this company of the whole of the lessor company's lands, irrigation works and mines, and generally all its assets and properties, excepting those to be leased as aforesaid, in part consideration of the above payment on the capital stock and in part consideration of the assumption by this company of all the obligations of the lessor company, including its outstanding debenture stock, the interest of which will be paid by this company half-yearly until redemption of same as provided for in the trust deed.

That the directors be authorized and empowered to enter into a lease from the Esquimalt and Nanaimo Ry. Co. to this company of its railways now constructed or to be constructed, including the railway in operation from Victoria to Wellington on Vancouver Island, about 78 miles, and the railway from Wellington to Alberni, about 60 miles, a portion of which railway, viz.:—from Wellington to Cameron Lake, 30 miles, has been completed and is now in operation, and the remainder from Cameron Lake to Alberni is approaching completion, for 99 years at a rental equal to interest at the rate of 4% per annum, payable half-yearly on mortgage bonds guaranteed both as to principal and interest by this company, and to be from time to time issued by the E. and N.R. Co. with the consent in writing of this company, the said bonds not to exceed in the aggregate $14,000 a mile in respect of the railway from Vancouver to Wellington and $30,000 a mile in respect of the branch railway from Wellington to Alberni and such other railways, branches and extensions as may be hereafter constructed; such lease to be in such form as may be approved by the directors of this com-

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The Hall Signal Company manufactures exclusively automatic signal apparatus; and its reputation is based on the quality of the apparatus produced. The Company is prepared to furnish plans and estimates for signaling any section of track, however simple or complicated, and takes this opportunity to offer the services of its engineers to the Railroads of Canada.

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Over Two Million Pounds of Vanadium Cast Steel Used in the Emergency Dams and the Lock Gates of the Panama Canal

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THE hinges or yokes of the lock gates, aggregating 1,138,236 pounds, 284 castings all told, are being made by the Wheeling Mold & Foundry Company, for the McClintic-Marshall Construction Company. "Masvan" Ferro Vanadium is used in the molten steel.

The racks and pinions for the emergency dams, aggregating 1,350,000 pounds, are being cast by the American Steel Foundries Company for the American Bridge Company. "Masvan" Ferro Vanadium is used.

Physical and dynamic qualities excelling those of any other type of steel casting are obtained for this monumental work through the use of our standard vanadium alloys. For castings or forgings designed for the hardest service, specify "Amervan," or "Masvan" ferro vanadium to your steel maker. Vanadium *as a component element of steel* gives it strength, ductility, and life, without brittleness or the tendency to crystallize. The best means of getting Vanadium into steel *as a component* part is to use "Amervan" or "Masvan" alloys.

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pany; and, that the former resolution authorizing lease of the said company's railways be abrogated.

Whereas the branch lines and extensions set forth below have been constructed or are in course of construction, and it is deemed desirable that authority be given to the directors to issue consolidated debenture stock to meet the requisite expenditure in connection therewith, it was resolved that the construction and equipment of the following branch lines and extensions of other branch lines which have been heretofore authorized, be approved:

Moose Jaw southwesterly branch, southerly and southwesterly from Moose Jaw, 35 miles.

Kerrobert northeasterly branch, northeasterly from Kerrobert, on the Moose Jaw northwesterly branch, 25 miles.

Weyburn-Lethbridge branch, extension westerly from the westerly end of the branch heretofore authorized, 21 miles.

Estevan-Forward branch, westerly and northwesterly from Estevan on the Souris branch, 55 miles.

Swift current branch, southerly and southeasterly from Swift Current, 45 miles.

Swift Current northwesterly branch, northerly northwesterly from Swift Current 35 miles.

Wilkie northwesterly branch, northwesterly from Wilkie on the Pheasant Hills branch, 32 miles.

Wilkie-Anglia branch, southeasterly from Wilkie, on the Pheasant Hills branch, 35 miles.

Bassano-Irricana branch, northerly and northwesterly from Bassano, on the main line to Irricana on the Langdon branch, 73 miles.

Kipp-Aldersyde branch, extension northwesterly from the northerly end of the branch heretofore authorized to Aldersyde, 27 miles.

And for aiding the construction and equipment of these branch lines and extensions the directors may issue and dispose of consolidated debenture stock to such an amount as they may deem expedient, not exceeding in the aggregate £6,000 sterling a mile in respect of the Moose Jaw southwesterly branch, the Swift Current southeasterly branch, the Swift Current northwesterly branch, the Bassano-Irricana branch, the Kerrobert northeasterly branch and the Wilkie-Anglia branch, and £5,000 sterling a mile in respect of the Wilkie northwesterly branch, the extension of the Weyburn-Lethbridge branch, the Estevan-Forward branch, and the extension of the Kipp-Aldersyde branch.

Whereas this company has statutory power to issue consolidated debenture stock in aid of the acquisition of steam vessels to the extent of the cost thereof, and the Fairfield Shipbuilding and Engineering Co. has recently constructed for this company on the Clyde, Scotland, two single screw steamships named Princess Adelaide and Princess Alice respectively, each being about 290 ft. long, with beam of about 46 ft., moulded depth of about 15 ft., triple expansion engines and a tonnage of about 2,000 tons; and Bow, McLachlan & Co., of Paisley, Scotland, have recently constructed for the company a steel twin-screw passenger steamship named Princess Mary, 210 ft. long with beam of 40 ft., moulded depth of 14 ft., triple expansion engines, and a tonnage of about 1,500 tons, and have entered into a contract for the construction for this company of a steel single-screw passenger steamship named Princess Sophia, about 245 ft. long with beam of about 44 ft., moulded depth of 18 ft., triple expansion engines and a tonnage of about 2,000 tons; and this company has recently purchased the steel screw steam tug Colima, 91 ft. long, beam 22 ft., depth of hold 9 ft., with compound engines; and the total cost of the said five vessels, including rigging, appurtenances and auxiliaries, will amount to about £300,000 sterling; and this company, pursuant to the authority given by the shareholders on Oct. 2, 1907, has entered into a contract for the construction by the Fairfield Shipbuilding and Engineering Co. of two steel quadruple turbine steamships for its Trans-Pacific Ocean service, to be named Empress of Asia and Empress of Russia, such steamships to have a gross tonnage of 15,000 tons each, a length of 570 ft., moulded depth of 38 ft., beam of 68 ft., and the whole cost thereof, including rigging, appurtenances and auxiliaries, complete when delivered, being £500,000 sterling, each; and the directors have decided to pay the cost of one of the last recited steamships out of the Steamship Replacement Fund; and in order to provide funds for payment of the cost of one of the steamships lastly described, and of the four steamships first described, and of the tug and their rigging, appurtenances and auxiliaries, and pursuant to the power above recited, it is deemed advisable to create an issue of consolidated debenture stock, it is resolved that this company is hereby authorized to issue consolidated debenture stock, and bearing interest not exceeding 4% per annum, to the amount of £800,000 for the purpose of paying the cost of the steamships above described and their rigging, appurtenances and auxiliaries; and that such stock may be issued in such manner and in such amounts respectively as shall from time to time be determined by the directors.

The retiring directors, Sir Wm. C. Van Horne, R. B. Angus, E. B. Osler, M.P., and H. S. Holt were re-elected for a further term of four years. At a meeting of the board held immediately after the shareholders' meeting, the following officers were re-elected for the current year: President, Sir Thos. G. Shaughnessy; Vice President, D. McNicoll; Executive Committee, R. B. Angus, D. McNicoll, E. B. Osler, M.P., Sir Thos. G. Shaughnessy, Lord Strathcona, and Sir Wm. C. Van Horne.

Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers to distinctly understand that we are not paid for the publication of any of this matter and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

The Pintsch Compressing Co., has appointed as its attorney in British Columbia, Jas. Dunn, Vancouver.

The Brown Hoisting Machinery Co., of Cleveland, Ohio, announces the opening of its San Francisco office in the Monadnock Building, with J. P. Case as Manager.

A. H. Wiggin, President, Chase National Bank, New York, has been elected a director of the American Locomotive Co., in place of the late J. E. French.

Supplementary letters patent have been issued under the Dominion Companies' Act increasing the capital of the St. Laurence Bridge Co. from $500,000 to $3,000,000.

The Pratt and Letchworth Co., Ltd., Brantford, Ont., has been authorized by letters patent under the Ontario Companies Act to increase its capital from $350,000 to $400,000.

The Titanium Alloy Manufacturing Co. calls attention to statistics issued by the American Steel Association respecting the tonnage of steel treated with various alloys during 1910. Out of a total of 567,819 gross tons, 326,316 were treated with Titanium.

T. A. Edison, Inc., Orange, N.J., has issued as a pamphlet, a reprint of argument comparing the relative economy of primary batteries and lead type portable storage batteries for railway signal operation, which was read at a recent meeting of the Railway Signal Association at Chicago, Ill., by E. E. Hudson.

The Robb Engineering Co., Ltd., Amherst, N.S., has taken the general agency for Canada of the gas engines and suction gas producers made by Davey, Paxman & Co., Ltd., of Colchester, England. The Paxman gas engine is made in a full line of sizes from 2½ to 300 h.p.; those larger than 20 h.p. are equipped with a compressed-air self starter which starts the engine with the same ease and certainty as a steam engine.

The Nova Scotia Car Works, Ltd., Halifax, N.S., is duplicating its power plant, and has placed the order with the Robb Engineering Co., Amherst, N.S., which supplied the original equipment. The new installation will consist of a 600 h.p. Corliss engine for direct connection to electric generator, three 200 h.p. return tubular boilers with self-supporting steel smoke stack 5 ft. diameter, 90 ft. high, also feed-water heater, piping and other accessories.

The Brown Hoisting Machinery Co., Cleveland, Ohio, has issued a well printed and illustrated pamphlet showing a few typical installations of the Brownhoist locomotive cranes, equipped with bottom block and lifting magnet, and some with Brownhoist grab bucket. These cranes can be used for switching purposes, the four-wheel types being equipped with drawbar, and the eight-wheel types with M.C.B. couplers. The latter are also equipped with steam brakes, M.C.B. trucks, train pipe, air hose connection and grab handles and steps.

Babcock & Wilcox, Ltd., Montreal, report the following orders: Winnipeg Electric Ry., 6,500 h.p. boilers; British Columbia Electric Ry., 2,000 h.p. boilers and C. G. stokers; Regina Electric Ry., 1,000 h.p. boilers and superheaters; Saskatoon, City Power Station, 1,500 h.p. boilers, superheaters, stokers, coal handling machinery and piping; Edmonton Electric Ry., 1,500 h.p. boilers, superheater, stokers and piping; Dominion Iron & Steel Co., 8,000 h.p. boilers, superheaters and stokers; Calgary Electric Ry., 2,000 h.p. boilers, superheaters and stokers; Moose Jaw, electric power plant, 300 h.p. boilers and superheaters; Canadian Pacific Ry., 1,200 h.p. boilers and superheaters for Windsor St. station, Montreal, and 650 h.p. for Place Viger station; Acadia Coal Co., 3,000 h.p. of boilers, superheaters, stokers and coal handling machinery; Atlin Construction Co., Prince Rupert, B.C., 500 h.p. boilers and stokers; Canada Iron Corporation, Midland, 2,500 h.p. boilers; Lethbridge Collieries, 1,000 h.p. boilers and stokers; Alberta Ry. and Irrigation Co., 500 h.p. boilers and stokers; Dominion Express Co., Montreal, 320 h.p. boilers; Canadian Car & Foundry Co., Montreal, 500 h.p. boilers; North Vancouver City Ferry, no. 2, marine water tube boilers; Montreal floating dock, 6 boilers portable type. They have recently completed etaoinshrd new boilers in the Government steamship Aberdeen at Halifax. By A. Dwight Smith.

* * *

The St. John's Ambulance Association class of the C.P.R. shops, gave a demonstration of first aid work, before the Western Canada Railway Club, at Winnipeg, Oct. 9. .

CANADIAN NORTHERN

TORONTO AND TRENTON NEW LINE--NOW OPEN

Effective Monday, Oct. 9, 1911

CONDENSED TIME TABLE

Eastbound—Read down. No. 10	No. 8	STATIONS	Westbound—Read up. No. 7	No. 9
P.M	A.M.		P.M	P.M.
6.30	9.30	TORONTO	1.00	9.30
9.00	12.00	Port Hope	10.30	7.00
9 15	12.15	Cobourg	10.15	6.45
9.43	12.43	Colborne	9.47	6.17
10 00	1.00	Brighton	9.30	6.00
10 20	1.20	TRENTON	9.10	5.40
P.M.	P.M.		A.M	P.M.

For Time at Intermediate Points, See Time Tables

Trains run daily, Sunday excepted. Solid, Wide, Vestibuled Trains.

Dining Car Service

Toronto to Trenton, on Train No. 8. Trenton to Toronto, on Train No. 9

Parlor Cars On All Trains

Trains run from and to Union Station, Toronto. Union Station with Central Ontario Railway is located in centre of Town of Trenton. All Central Ontario Railway Trains make close connections at Trenton Union Station with above trains.

GEO. H. SHAW,
General Traffic Manager,
Toronto, Ont.

R. L. FAIRBAIRN,
Asst. Genl. Pass. Agent,
Toronto. Ont.

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MONTREAL-QUEBEC TO BRISTOL
(Summer Service)
HALIFAX TO BRISTOL
(Winter Service)

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Their equipment and interior appointments are of the most luxurious and modern description, and all the conveniences and comforts that make for an enjoyable voyage have been thoroughly anticipated. Marconi wireless, deep sea telephones, passenger elevators, thermo-tank system of ventilation, superbly appointed cabins.

For full particulars apply to the nearest Railway or Steamship Agent.

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GEO. H. SHAW,
Gen. Traffic Manager,
Toronto, Ont.

WM. PHILLIPS,
Gen. Freight and Pass. Agent,
Toronto, Ont.

All Steel Section Car

No. 28 Fairbanks-Morse Gasoline Motor Cars

SPECIFICATIONS

Gauge	Any gauge 24 inches and over
Wheel Base	3 feet 10 inches.
Length of Car Over All	7 feet 0 inches.
Width, Without Guide Arms	26 inches.
Wheels	17-inch wood center and 14-inch wood center guide wheels.
Axles	Rear axle 1⅛ inches. Front axle 1½ inches.
Axle Boxes	Rear boxes are malleable iron with oil cellar. Front boxes are full brasses and oiled by engine lubricating system, as well as grease cups for emergency use.
Frame	All pressed steel and steel guide arms.
Power	Two-cylinder, 3¼ x 4 inches, two-cycle air-cooled engine, one cylinder direct connected to front axle on each side. Cranks entirely enclosed. Engine develops about 4 H.P.
Lubrication	Engine is entirely lubricated by oil mixed with the gasoline and reaches the engine with the gasoline, passing through the carburetor.
Control	Spark and throttle are controlled by levers on the seat and the throttle lever also operates a switch and cylinder relief cocks.
Brake	On front and rear wheels. Can be operated from either front or rear seat.
Seating Capacity	Three persons.
Tank	Gasoline tank holds about 2¼ gallons, which operates the car about 80 miles.
Speed	Runs either way up to 30 miles per hour.
Weight	About 400 lbs.

The Canadian Fairbanks=Morse Co., Limited

MONTREAL OTTAWA TORONTO ST. JOHN, N.B. WINNIPEG
SASKATOON CALGARY VANCOUVER

RAILWAY DEVELOPMENT.

Projected Lines, Surveys, Construction, Betterments, Etc.

Alberta Central Ry.—Steel is reported to have been laid west of the Calgary and Edmonton Ry. at Red Deer to the river, and the substructure of the bridge, half a mile in length across the river, has been completed. It is expected that the bridge will be completed by the end of the year. Track laying will be continued on the farther bank of the river pending the completion of the bridge, and it is expected to have it laid as far as Rocky Mountain House by Dec. 31.

The Board of Railway Commissioners has approved location plans for the line between mileage 64.5, and 71.3 west of Red Deer; and between mileage 160 and 194.6 east from Red Deer, Alta. (Oct., pg. 935.)

Algoma Central and Hudson Bay Ry.—The Board of Railway Commissioners has authorized the operation of trains over the extension of the main line, in Sault Ste. Marie. It has also approved location plans for the extension of the line from mileage 30.08 to 129.39.

Arrangements are being made for the letting of contracts for the building of a new station at Tagona, at a cost of about $10,000, and plans are being prepared for a new station and office building at the foot of Bruce St., Sault Ste. Marie, at an estimated cost of $100,000. R. S. McCormick, Chief Engineer, was reported as saying, Oct. 11, that the contract for this work would probably be let in the spring of 1912. (Oct., pg. 935.)

Atlantic, Quebec and Western Ry.—Track has been laid on the extension of the line into Gaspe, Que., and we are advised that construction trains are being run through to that point. The bridge work and ballasting on the extension are being finished, and it was expected to have everything practically completed by the end of October. Oct., pg. 935.)

Brandon Transfer Ry.—The short piece of line connecting C.P.R. and Canadian Northern Ry. and the Brandon, Saskatchewan and Hudson Bay Ry. (Great Northern Ry.) was opened for traffic, Sept. 19. The line was built and is being operated by the last mentioned railway, under an order of the Board of Railway Commissioners; the rate for handling traffic being $3 a car. (Oct., pg. 935.)

British Columbia and Alaska Ry.—Plans for this projected railway from Vancouver to Fort George have been filed at Victoria and Ottawa. J. Wolkenstein, President, accompanied by several of the directors, completed an inspection of the route Sept. 25, and in Vancouver, on their return from Fort George, the President said arrangements for building the line were being advanced, but whether by the company itself, or in amalgamation with another company, he was not then in a position to state. (Oct., pg. 935.)

Burrard Inlet Tunnel and Bridge Co.—An agreement was signed Sept. 28, between the company and the city of Vancouver respecting the building of a bridge across the second narrows of Burrard Inlet. Under the agreement, the city will subscribe for $200,000 of the company's stock. The company is controlled by the municipalities and the bridge is to be built in connection with railways to be built by the Vancouver, Westminster and Yukon Ry. (See Vancouver, Westminster and Yukon Ry., Oct., pg. 937.)

At a meeting of the directors, Oct. 5, Sir J. Wolfe Barry, of London, Eng., was appointed consulting engineer

Central Ry. of Canada.—We are officially advised that the engineers in charge of parties are: De S. Beaudry Hawkesbury, Ont., on the section west of that point, and L. G. Parker, St. Andrews, Que., on the section east from Hawkesbury. It is expected to get the location completed, the right of way cleared, and a start made with the earth work during the winter, so as to have some grade ready for tracklaying in the spring of 1912. L. B. Howland, Toronto, formerly President and General Manager, Irondale, Bancroft and Ottawa Ry. has been appointed Superintendent of Construction. (Oct., pg. 939.)

Dominion Atlantic Ry.—The Board of Railway Commissioners has extended the time to Mar. 31, 1912, for the completion of the reconstruction of the bridge over the Shubenacadie River at South Maitland, U.S. (Sept., pg. 853.)

Application is being made to the Dominion Parliament to extend the time within which the company may build the line from between Kentville and Canning, to between Berwick and Middleton, authorized to be built in 1908.

Edmonton, Dunvegan and British Columbia Ry.—T. Turnbull, Chief Engineer, arrived in Edmonton, Alta., Sept. 21, after having made a preliminary survey of the first hundred miles of this projected railway out of Edmonton. The company has several survey parties in the field locating the line.

A meeting of shareholders will be held in Edmonton, Nov. 6, for the purpose of formally organizing the company. C. Pringle, Ottawa, is Secretary of the Provisional Directors. (See Edmonton to Peace River, Oct., pg. 935.)

Edmonton to Peace River.—In connection with the reports referred to in our last issue, an interview with J. L. Cote, a member of the Alberta Legislature, in Vancouver, Oct. 22, states that the charter which has been acquired by the J. D. McArthur interests, covers the building of a line from Edmonton to Fort George. This is the route of the Edmonton, Dunvegan and British Columbia Ry. Mr. Cote added that a survey party was going over the route to secure data preliminary to the location survey. It is expected that construction will be started during 1912, and the line completed in 1914. (Oct., pg. 935.)

Erie, London and Tillsonburg Ry.—Dominion Parliament is being asked for an extension of time within which the projected line from Port Burwell to London may be built, J. H. Teall, Tilsonburg, Ont., is President of the company. (June, 1910, pg. 447.)

Fredericton and Grand Lake Coal and Ry. Co.—The question of the building of a railway from Fredericton or Gibson to the Queen's County coal fields near Minto, N.B., in the interests of the C.P.R. is under consideration. The Fredericton and Grand Lake Coal and Ry. Co., with H. P. Timmerman, of the C.P.R., as one of the provisional directors, was incorporated by the N.B. Legislature in 1910, and in addition to having power to build from Fredericton or Gibson to Minto, was authorized to acquire the New Brunswick Coal and Ry. Co.'s lines, etc. Location surveys have recently been made by D. F. Maxwell, who went over the route in company with Sir Thos. Tait, Sept. 30. It is reported that the F. and G.L.C. and R. Co. has entered into a contract to supply 100,000 tons of coal a year to the C.P.R., and that the line will be built at once in order to deliver the coal. One report says that the line will be completed by Oct. 1, 1912.

Under the terms of an act passed last session of the New Brunswick Legislature, the Provincial Government is authorized to guarantee the bonds of the F. and G.L.C. and Ry. Co., provided it has entered into a contract with the C.P.R. or other company for the operation of the line, and for the mining of at least 100,000 tons of coal, and also for the leasing from the province of the Coal and Ry. Co.'s line.

High River, Saskatchewan and Hudson Bay Ry.—Application is being made to the Dominion Parliament to incorporate a company to build a line from tps. 25 to 29, range 1, west of the 4th meridan, Alberta, northeasterly to Saskatoon, thence to tps. 52 to 56 on the eastern boundary of Saskatchewan, thence to The Pas, N.W.T. A. A. Ballachey, High River, Alta., is solicitor for applicants. (Sept., pg. 53.)

Intercolonial Ry.—Contracts are reported to have been let by the late Dominion Government for the building of the following lines: Dartmouth to Deane, N.S., 43.2 miles, M. P. Davis & Co.; Guysboro to Country Harbor, N.S., 72 miles, Nova Scotia Construction Co.

A contract is reported let to F. Wilson, Truro, N.S., for the erection of a new station there. The building will be 296 by 50 ft., the centre portion being two stories high. The building will be of stone and the contract price is $150,000. The actual work of building the line will be started in the spring. (Oct., pg. 935.)

Kaslo and Slocan Ry.—In a recent interview, J. L. Retallack, who is at the head of the company formed to take over this railway, stated that there is every probability that the line between Kaslo and Sproules, B.C., will be put into condition for carrying traffic this fall, and that the remainder of the line from Sproules to McGuigan, will be in shape for operations in the spring. (Oct., pg. 935.)

Kettle Vlaley Lines.—Recent press reports state that of the 250 miles under construction, 65 miles of grading has been completed, and 50 miles of track laid. It is expected that by the end of the year another 15 miles of grading will be completed, and an additional 25 miles of track laid. (Oct., pg. 935.)

Kootenay and Alberta Ry.—Application will be made to the Dominion Parliament to extend the time within which the company's projected line may be built. G. V. Cousins, Montreal, is solicitor for the company. (Oct., pg. 937.)

Michigan Central Rd.—Last year the company built a section of 16 stalls for a roundhouse at St. Thomas, Ont. Work has been started on an addition of 25 stalls, the contract being reported let to G. A. Ponsford. The old roundhouse is to be abandoned entirely as soon as the new one is completed. (Sept., pg. 855.)

Minneapolis and St. Louis Rd.—Iowa Central . Ry.—A New York press despatch of Oct. 18 says: "N. Erb., President of the Minneapolis and St. Louis Rd. and the Iowa Central Ry., who returned to-day from an inspection trip, said that preliminary arrangements had been made for extending the Minneapolis and St. Louis to the Canadian border. Engineers were instructed to make a reconaissance for two routes to the Canadian border, one from Minneapolis to Emerson, where a connection would be effected with the Canadian Northern Ry. and another from Watertown to a point on the border, where a connection would be made with the Grand Trunk Pacific Ry. as well as with the Canadian Northern."

Montreal-St. Lambert Tunnel.—It is reported in Montreal, that in connection with the announced intention of the Canadian Northern Ry. to enter Montreal by a tunnel under Mount Royal, the project of connecting Montreal with the south shore by a tunnel under the St. Lawrence River will be carried out. The Montreal South Shore Land and Development Co. is reported to have secured over 600 acres on the south shore, and is about to amalgamate with other interests having the construction of the

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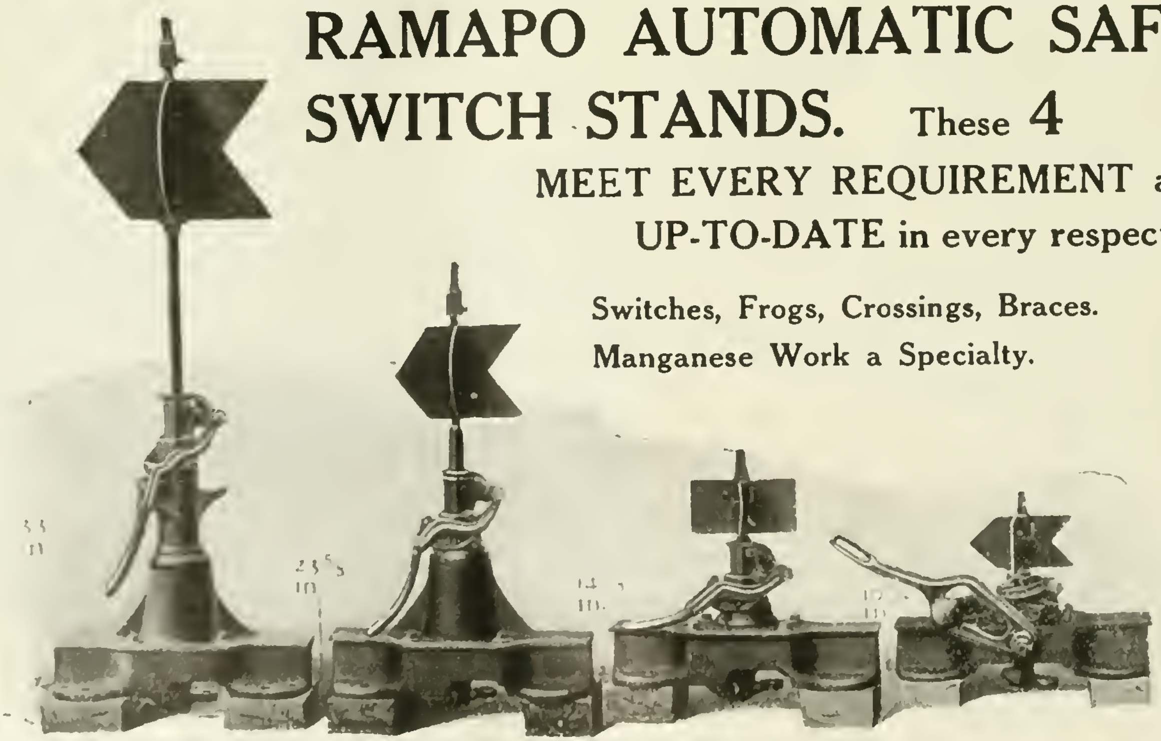

Style No. 17 Style No. 18 Style No. 19 Style No 20

Canadian Ramapo Iron Works, Limited WORKS NIAGARA FALLS, ONT.

Branches Room 3,435 Main Street, WINNIPEG 506 Eastern Townships Bank Bldg., MONTREAL

tunnel in view. The syndicate is stated to comprise among its members, R. Forget, D. McMartin, A. E. Robert, J. L. Perron, W. G. Ross, and Mackenzie, Mann & Co., Ltd. The report further states that the south end of the tunnel will be between St. Lambert and Longueuil, and that the northern end will be either in Chaboillez Square, or between Harbor and Frontenac streets. (See Montreal Central Terminal Co., July, pg. 647.)

Nelson River Ry.—Application is being made to the Dominion Parliament to declare the company's corporate powers to be in full force and effect, and extending the time within which the authorized lines may be built. (July, 1910, pg. 549.)

North Arm Bridge and Ry. Co.—The Dominion Parliament is being asked to incorporate a company with this title, to build a bridge across the north arm of Burrard Inlet, from Turtles Head to lot 575, directly north of White Rock island, with power to connect with the C.P.R. Port Moody branch to North Vancouver, or with any lines to be built on the north shore of Burrard Inlet, and with any street railway. W. H. Langley, Victoria, B.C., is solicitor for applicants.

Quebec Central Ry.—Tenders are being asked for the erection of a two story concrete station at Sherbrooke. Que. The estimated cost of the building is $30.000. Sept., pg. 855.)

Quebec Eastern Ry.—A party of 16 is reported to have left Sherbrooke, Oct. 6, in charge of Hazen Drury, to make a survey for a line from Sherbrooke to Quebec. In connection with this report it is further stated that R. Forget and J. A. Greenshields have secured control of the charter; and that they have also acquired control of the Lotbiniere and Megantic Ry., which line will be utilized as a part of the projected railway. The Q.E. Ry. Co. was originally incorporated with power to take over the L. and M. Ry., and the charter of the Wolfe, Megantic and Lotbiniere Ry. F. N. McCrea and others controlling the L. and M. Ry. were interested in the Q.E. Ry. A Montreal report, Oct. 14, says that when constructed the line will connect at Quebec with the Quebec and Saguenay Ry., now under construction. Certain preliminary surveys were made in 1909, but nothing definite was done. (May, pg. 411.)

Reid Newfoundland Ry.—A passenger train service has been put in operation on the Bonavista branch, the first of the lines to be built, under the agreement of 1909. Grading on the Trepassey line is being pushed and work on the line from Broad Cove station to Heart's Content, has been started. This line will be 35 miles long, and run along the south shore of Trinity Bay. (Oct., pg. 937.)

St. John Valley Ry.—The Premier of New Brunswick, stated Oct. 5, that the contract with the Dominion Government for the building of the projected railway from St. John to Grand Falls, was ready for signature, but it could not be signed until some small matters of detail had been arranged with the new government at Ottawa. (Oct., pg. 937.)

Temiskaming and Northern Ontario Ry.—Grading on the extension of the Porcupine branch to Pearl Lake, Ont., has been practically completed. There are four rock cuts still to be finished. Some track has been laid, and it is expected to have the extension completed early in Dec.

The spur to connect the line at North Bay with the G.T.R. at Nipissing Jct., is practically completed. A new freight shed to be used jointly by the T. and N. O.R. and the G.T.R., at Regina St., North Bay, is expected to be completed early in Nov.

Speaking in Toronto, Oct. 13, A. C. Macdonnell, M.P., said it was assured that the new Dominion Government would grant a bonus to the line, which the late Government had refused to approve.

Professor S. C. Ellis, has returned to Ottawa, having completed an exploration survey of the country between Cochrane and James Bay, and of the conditions of James Bay itself in the vicinity of Moose River. A report of his observations will be presented to the Commissioners for consideration in connection with the project to extend the line to Hudson Bay. (Oct., pg. 937.)

United Gold Fields of B.C.—The Dominion Parliament is being asked to change the head office of the company from Frank to Blairmore, Alta.; authorize a change in the location of one of its authorized lines from "range four" to "ranges three and four"; to authorize the building of the following additional lines: From the C.P.R. at Blairmore southerly to the company's coal mines, and from Blairmore easterly to Lille; and to extend the time within which the lines may be built. (Aug., 1909, pg. 577.)

Grand Trunk Pacific Ry. Co's. Annual Meeting.

The adjourned annual meeting of shareholders was held in Montreal, Oct. 10. The President, C. M. Hays, stated that during the year track laying on the main line of the Western Division had been extended from Wolf Creek to Fitzhugh west of the Athabasca River in the Rocky Mountains, which is 1,027 miles west of Winnipeg, and will be the divisional point for that section, and that construction work is under full headway with night and day forces to Tete Jaune Cache, on the Fraser River beyond Yellowhead Pass on the western slope of the Rocky Mountains, and it is expected that track laying will reach this point. 1,094 miles west of Winnipeg, before the close of the year. From Prince Rupert, track is laid easterly for 100 miles to Copper River, and construction work is being prosecuted vigorously with night and day forces from Copper River to Aldermere, 240 miles east of Prince Rupert. This section of the line includes the crossing of the Skeena River, where the substructure for a large bridge is being built, and also includes several short tunnels, the character of which will probably delay the laying of track, but it is expected that early in the season of 1912 the track will reach Aldermere. The contract for the construction of that section of the line through Northern British Columbia between Aldermere and Tete Jaune Cache, 410 miles, has been let to Messrs. Foley, Welch & Stewart, who have done most of the construction work on the main line of the Western Division. As this portion of the railway is located for the most part along the navigable rivers in that part of country which will be availed of for the transportation of material and supplies during the building of the line, it is expected that these advantages will greatly facilitate the progress of the work. The reports received from the engineers who have explored this new region are very gratifying with regard to the large areas of arable land situated in the valleys contiguous to the line, and judging from the tide of immigrants and settlers which has already set in to this territory, there is every reason for the belief that there will be a large traffic available for transportation as soon as the railway can be completed. Although this portion of the railway is designated the "Mountain Section," the future prospects of the company in connection with the same are exceptionally favorable and unique in respect to the large areas of land just referred to which are available for settlement and agriculture by reason of the fact that the valleys are wider, thus affording a more distant prospective to the mountains from the location of the line, which also enhances its scenic features.

For the purpose of occupying additional territory in the Western Provinces that is being settled which gives good promise of increasing traffic, the company has under construction approximately 1,400 miles of branch lines, considerable portions of which have already been completed, the latter including the lines to Yorkton, Canora, Regina and Moose Jaw. Lines are also under construction to Prince Albert, Battleford, Calgary and Lethbridge, which will place all these growing cities in direct communication with the main line and secure a large volume of traffic that is rapidly becoming established. Branch lines are also being built into the rich coal fields situated west of Edmonton.

On all portions of the line which have been sufficiently completed trains are in operation and a daily through freight and passenger service is established on the line between Winnipeg, Edmonton and Edson.

For the purpose of establishing suitable hotel accommodations throughout the country which will be traversed by the company's lines, it is proposed to construct a chain of first-class modern hotels. A contract has been let for the construction of a large hotel in Winnipeg at a cost of $1,500,000. This hotel will be located on Broadway, next to the Manitoba Club, and within easy access to the new union station on Main St. As the hotel is also located at the site of old Fort Garry, "The Fort Garry" has been adopted as its name. Other hotels will be constructed in the near future at Edmonton, also in Jasper Park in the Rocky Mountains, and at Prince Rupert.

The company has been granted a subsidy by the Government for the construction of a floating dry dock at Prince Rupert at an approximate cost of $2,200,000, on which work has already been commenced, and tenders have been asked for the construction of terminals and station in that city.

The steamship Prince John has been added to the company's fleet on the Pacific Coast and placed in service between Prince Rupert and the Queen Charlotte Island. This region is rapidly developing as a rich mineral and agricultural district and will no doubt eventually provide a large traffic for the company's steamships and railway.

Good progress has been made in construction on the Eastern Division (National Transcontinental Ry.). A total of 1,223.45 miles of main line track and 136.50 miles of side track have been laid, and the remaining portions of this section are all under contract. Considerable portions of the main line track have been laid in continuous sections, particularly from Moncton to the western boundary of New Brunswick, 218.2 miles; from Quebec westerly beyond La Tuque, 253 miles, and from 125 miles east of Cochrane westerly for 290 miles; from Lake Superior Junction easterly 100 miles has been laid. The line between Fort William and Winnipeg has been in operation during the past year for freight traffic principally, by means of which the company has been enabled to participate in the transportation of the northwestern grain crop to the extensive elevator and terminals which have been constructed at Fort William, and it is expected that this portion of the line will be finally completed for daily train service within a few months.

In the construction, therefore, of approximately 5,133 miles of railway un-

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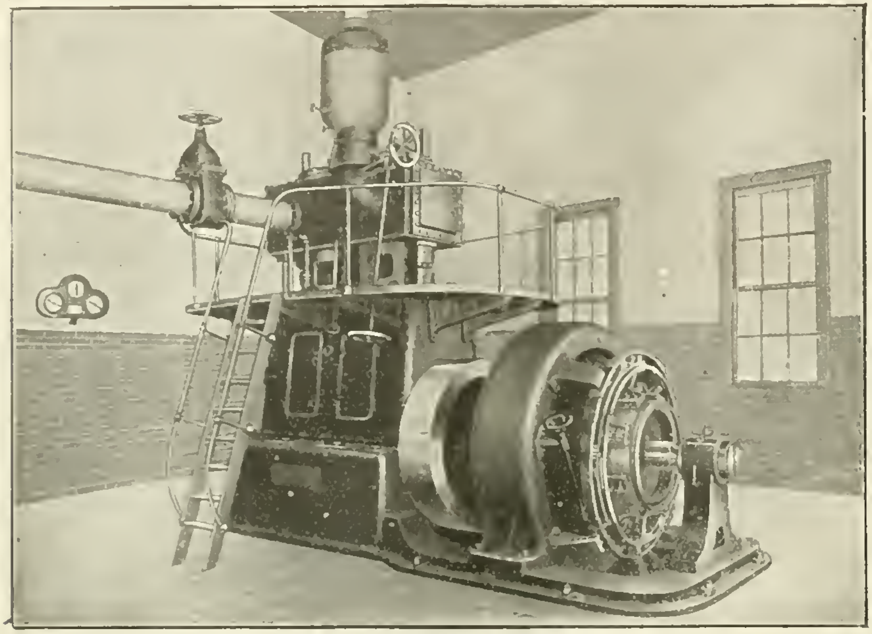

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dertaken in the first instance, there has been laid practically 3,300 miles of main line track, and on large sections on which the construction of the road-bed is already advanced, a large addition will be made to the track mileage within the next few months.

Under agreements with the Government to provide equipment for the operation of the railway, there have been purchased 13,749 freight cars, 173 passenger cars, and 129 locomotives.

The terms of office of the directors expires each year when the full board is eligible for re-election. In the representation on the board by members of the board of Grand Trunk Ry. Co. of Canada resident in London, these directors serve in turn in alternate years. Hugh A. Allan, who was a member of the first board of directors, and has served since the organization of the company in 1904, having taken up his residence in England, is unable to continue as an active member of the board, and the company and directors have much regret in parting with his able co-operation and support.

The following directors are proposed for re-election: A. W. Smithers, Sir Henry Mather Jackson, G. Von Chauvin, Col. Firebrace, C. M. Hays, E. J. Chamberlin, W. Wainwright, E. H. Fitzhugh, W. H. Biggar, E. B. Greenshields, Hon. R. Dandurand, Hon. Geo. A. Cox, E. R. Wood, J. R. Booth.

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Grand Trunk Railway Construction, Betterments, Etc.

New England Extensions.—A. W. Smithers, Chairman of the Board, G.T.R., accompanied by C. M. Hays, President, G.T.R., and officers of the Central Vermont Ry., made an inspection of the route of the projected Southern New England Ry. in Massachusetts and Rhode Island recently.

The S.N.E. Ry. has been ordered to file a bond of $1,000,000 to protect property owners in Massachusetts, whose property may be taken for the building of the line.

It appears that the differences between the S.N.E. Ry. and the New York, New Haven and Hartford Rd., in Woonsocket, Mass., have not been completely adjusted, as the latter company has filed plans for two new freight houses on North Main St., on part of the route located for the S.N.E. Ry..

Ottawa Station.—The first section of the new Central Station at Ottawa to be completed was handed over by the contractors to the company, Oct. 14. The work was reported to have been completed, with the exception of some finishing touches, Oct. 7. It was expected that the staff would move into the new offices by Oct. 30.

Ashbridge Bay Spur.—The Toronto board of control has granted the company permission to build an industrial spur and sidings from the National Iron Works to Leslie St., in the Ashbridge Bay district. The agreement provides that the line may be acquired by the city at any time it is thought advisable to take it over and make it part of the city's industrial system in the district. The line is estimated to cost $90,000.

Toronto Grade Revision Work.—Considerable progress has been made on the grade revision work westerly to Mimico, and the permanent tracks have been laid on the section to near Sunnyside, where the buildings south of the Lake Shore road have been demolished, and a start made on the work for the bridge which is to carry the road over the railway. The Board of Railway Commissioners has approved plans for this bridge, without prejudice to the Toronto and York Radial Ry. (Mimico and Lake Shore Division.)

Midland-Penetang Branches Connection.—The Board of Railway Commissioners has authorized the opening for traffic of the line from Tiny Jct., on the line from Orillia to Midland, to Saurin Jct., on the line between Colwell and Penetanguishene, Ont. A service of two trains a day each way was commenced Oct. 3.

Northern Division Bridges.—The Board of Railway Commissioners has authorized the rebuilding of 14 bridges on the Northern Division.

Hamilton.—Press reports state that the company has purchased a considerable area in the vicinity of Barton and Ferguson Sts., upon which it is expected a new station will be built. C. M. Hays, President, informed the mayor, Oct. 6, that one of the Vice Presidents would visit the city shortly and hear the representatives of the different interests as to the railway accommodation provided by the company in the city.

The mayor received a telegram Oct. 18, from C. M. Hays, stating that he, Vice President Kelley, and W. G. Brownlee, General Transportation Manager, would be in the city, Oct. 28, to discuss the question of the company's facilities there, with a view to their improvement and extension.

Guelph Station.—The new station at Guelph, Ont., has a frontage of 123½ ft., and a depth of 43 ft., with aloggia and porte-cochere. The general waiting room is 60 by 40 ft.; the ladies' parlor, 17 by 43 ft.; the smoking room, 27 by 20 ft.; parcel and baggage office, 13 by 21 ft.; baggage room, 40 by 26 ft. The ticket and telegraph office is directly opposite the porte-cochere.. There is a covered platform of 100 by 30 ft. between the station and the express building which is 40 by 33 ft. These buildings are constructed on concrete foundations, of Bryants Pond grey granite, from foundation to window-sill, with pressed buff brick for walls, trimmed with granite jamb linings, and belt course for all buildings. The entire roof is covered with dull green tile. The interior of offices and waiting rooms is finished in the floors and wainscoting, quarter cut oak trims, doors and sash, granulated plaster walls and ceilings, decorated in suitable tints. The interior of the baggage room and express building is finished in pressed brick. The area of platforms for handling of public is 29,200 sq. ft., and has four tracks in front of the station for passenger trains. At the rear is a circular driveway through a porte-cochere with a side walk from the streets, leading to the loggia for main entrance to the waiting room. The grounds on the city side and end of the building are terraced and sodded, and it is located on what was known as Jubilee Park, the tracks being elevated some 6 ft. The building has a pleasing appearance from the main streets of the city.

Brantford Industrial Switch.—Plans were approved by the Board of Railway Commissioners, Oct.. 11, for the proposed Holmedale cut-off from the Ontario Institute for the Blind to the Brantford and Tillsonburg branch line. An agreement respecting this work was made with the G.T.R. some time ago, and the commissioners' order only was required to enable the work to be gone on with. The mayor stated that the work is to be started at once and it will be completed early in 1912.

Interchange Track at Ingersoll.—The Board of Railway Commissioners has authorized the G.T.R. to build a track for the interchange of traffic with the C.P.R. at Ingersoll, Ont.

London Improvements.—C. M. Hays, President, stated in a recent interview, that nothing could possibly be considered in the way of the proposed improvements in London, Ont., until the work in progress in Toronto is out of the way. (Oct., pg. 943.)

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Traffic Orders by the Board of Railway Commissioners.

Summaries of other orders are given on another page under "Orders by the Board of Railway Commissioners.."

RATES ON MEATS, ETC., IN BRITISH COLUMBIA.

14871. Sept. 1.—Re application of Vancouver-Prince Rupert Meat Co., Ltd. complaining against increased rates charged by Great Northern Ry., under Supplement 32 to its Special Tariff. C.R.C. 602, effective Aug. 1, 1911, on meats, fresh, cured, smoked, dried, or salted, and packing house products, from Sapperton to Vancouver, B.C., shipped by the applicant company; and applying for an order directing the railway company to restore the rate of 5c. per 100 lbs., minimum weight 17,000 lbs., per car, as agreed between the applicant company and the railway company. It is ordered that the Special Tariff of the railway company, Supplement 32 to C.R.C. 602, dated July 18, 1911, effective Aug. 1, 1911, be cancelled in so far as it affects the said traffic; and the railway company is required to restore the rate on the said tariff from Sapperton, B.C., to Vancouver, in force under the tariff issued by the railway company, Supplement 22 to C.R.C. 602, effective Oct. 10, 1910; provided that should the railway company be able to prove the said restored rate to be unremunerative after it has been in effect for a period of not less than one year from the date of restoration, application may be made to the Board for leave to increase it.

G.N.R. TO FURNISH REFRIGERATOR CARS.

14872. Sept. 1.—The application of the Vancouver-Prince Rupert Meat Co., Ltd., complaining of refusal of Great Northern Ry. to furnish duty-paid refrigerator cars for dressed meat for shipment from the applicant company's plant at Sapperton, B.C., to Vancouver. It is ordered that the railway company, within the shortest time necessary to provide such equipment, furnish the applicant company with refrigerator cars properly equipped with racks, or cross-pieces, suitable for holding the hangers or hooks used by the applicant company in loading its fresh meat shipments.

GREAT NORTHERN RY. RATES.

14887. Sept. 2.—Re application of Prudential Builders, Ltd., for order directing the Great Northern Ry. to provide a 30,000 lbs. minimum weight on a 40,000 lbs. capacity car on the Vancouver, Victoria and Eastern Ry., from Burnaby Lake, B.C., to Vancouver. It is ordered that the G.N.R. amend item 70 of its Special Tariff C.R.C. 602 issued June 20, 1909, applying to lumber, lath and shingles shipped from the company's stations in British Columbia to Vancouver and New Westminster, so as to provide the reduced minimum weight of 30,000 lbs., for cars less than 36 ft. in length.

REFUND OF OVERCHARGE ON LUMBER.

14888. Aug. 31.—Re application of Fullerton Lumber and Shingle Co., for order directing the Great Northern Ry. to refund an amount alleged to have been overcharged by the railway companies on a carload of lumber shipped by the applicant company from Tynehead, B.C., to Moose Jaw, Sask. It is ordered that the railway company be permitted to refund to the applicant company $12.85 overcharged by the railway companies on the shipment.

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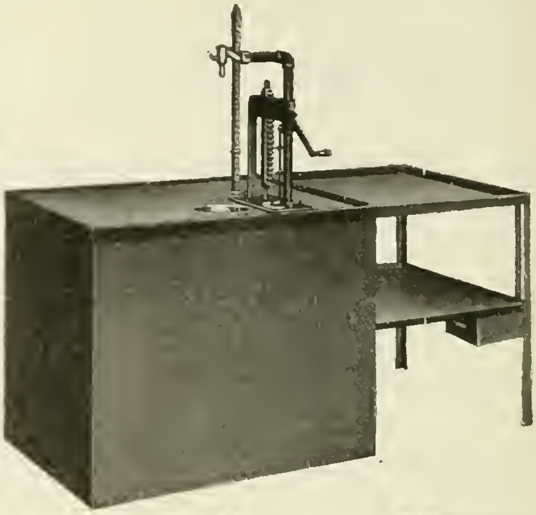
The Intercolonial Ry. has changed the name of its station at St. Michel, Que., to La Durantaye.



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Orders by the Board of Railway Commissioners.

Beginning with June, 1904, we have published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given or orders, immediately following the numbers, are those on which the hearing took place and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the dates assigned to them.

14482. Sep. 9—Approving location of G.T.P.R. station at Entwistle, Alta., authorizing the building of a highway approach thereto, and pending completion of same, ordering that trains be stopped at King St., for passengers and at the sawmill siding for freight.

14712. Sept. 6.—Approving C.N.O.R. location through unsurveyed territory, Thunder Bay District, mileage 140 to 160 from Port Arthur.

14713, 14715. Sept. 7.—Authorizing C.N.R. to cross three public roads with its Prince-Albert Battleford line, Sask.

14716. Sept. 7.—Approving plans of proposed new station and platform to be built at Shawinigan Jct., Que.

14717. Sept. 6.—Approving C.N.O.R. location through unsurveyed territory, Thunder Bay District, mileage 120 to 140 from Port Arthur.

14718, 14721. Sept. 5.—Approving Kettle Valley Ry. plans for bridges over Coldwater and Kettle Rivers, B.C.

14722. Sept. 6.—Approving C.N.O.R. location through unsurveyed territory, Thunder Bay District, mileage 179 to 200 from Port Arthur.

14723. Sept. 7.—Disallowing joint tariffs on oysters from New Haven, Conn., Providence, R.I., and other shipping points of Adams Ex. Co. taking higher through rates than $1.50 per 100 lbs. to Toronto and $1.55 per 100 lbs. to Guelph, Ont., new joint tariffs to be issued.

14724. Sept. 5.—Authorizing C.P.R. to build double track and sidings across highways on its Brandon, Man., subdivision, from mileage 57.64 to 130.49.

14725. Sept. 8.—Authorizing Vancouver Power Co., and New Westminster Southern Ry. to operate trains over crossing at Cloverdale, B.C., interlocker being completed.

14726. Sept. 9.—Authorizing C.P.R. to build bridge 133.28 over Thessalon River, Lake Superior Division.

14727. Sept. 9.—Authorizing C.P.R. to build spur into city's material yard, Lethbridge, Alta.

14728. Sept. 9.—Authorizing C.P.R. to build spur for Gordon, Ironsides & Fares Co., Moose Jaw, Sask.

14729. Sept. 8.—Authorizing G.T.P.R. to build standard no. 1 station at Reford, Sask.

14730. Sept. 9.—Authorizing G.T.R. to rebuild bridge across public road, con. 3, Tay tp., Ont.

14731. Sept. 7.—Authorizing G.T.R. to build eight bridges on District 13, Northern Division, Ont.

14732, 14733. Sept. 8-9.—Authorizing C.N.R. to cross six highways with its Prince Albert Battleford line, and five highways with its Swift Current line, Sask.

14734. Sept. 6.—Approving substructure plans of subway under C.N.R. at 23rd St., Saskatoon, Sask.

14735. Sept. 8.—Approving character and plans, ninth concession, Berfeltz and Brewer municipal drains under G.T.R. in Huron county, Ont.

14736. Sept. 12.—Authorizing G.T.R. to build siding into Tudhope-Anderson Co.'s premises, Orillia, Ont.

14737. Sept. 9.—Extending to Oct. 31, time for completion by G.T.R. of cutting down embankment in Camahe tp., Ont.

14738. Sept. 9.—Authorizing C.P.R. to build subway across Scarlett Road, York tp. and to take possession of private land.

14739. Aug. 2.—Authorizing C.P.R. to build third track between Angus and Mile End across Papineau Ave., Montreal, and Montreal St. Ry.

14740. Sept. 11.—Authorizing C.P.R. to build its Reston and Wolseley branch across 34 highways in Saskatchewan.

14741. Sept. 12.—Authorizing city of Hamilton, Ont., to maintain sewer under T.H. & B.R., on south side of Main St.

14742. Sept. 12.—Approving location of C.N.O.R station grounds at St. Benoit, Que.

14743. Sept. 12.—Ordering C.P.R. within 15 days, under penalty of $25 a day to erect between mileposts 123 and 126, fences of 4½ ft. minimum height, with swing gates at farm crossings, at Alameda, Sask.

14744. Sept. 12.—Authorizing G.T.P. Branch Lines Co., to connect its Yorkton branch with C.N.R. at Canora, Sask.

14745. Sept. 12.—Authorizing G.T.R. to change deviation of spur on its Lachine Canal branch, into Canadian Light and Power Co.'s premises, Montreal.

14746. Sept. 11.—Relieving C.P.R. from further protection of crossing on London and Chatham road at mileage 62.2, east of Chatham, Ont.

14747. Sept. 11.—Ordering G.T.R. to enlarge culvert on lot 21, con. 14, Hullett tp., Ont.

14748, 14749. Sept. 13.—Authorizing Kettle Valley Ry. to cross roads at stations 945 and 901, northwest of Midway, B.C.

14750, 14751. Sept. 11.—Authorizing C.P.R. to build spurs for Halliday Bros., Winnipeg, and Dryden Timber and Power Co., Wabigoon River, Ont.

14752. Sept. 11.—Authorizing South Ontario Pacific Ry. (C.P.R.) to build overhead crossing for its Guelph Jct. to Hamilton branch, over Mill St., Waterdown, Ont.

14753. Sept. 11.—Authorizing South Ontario Pacific Ry. (C.P.R.) to close portion of road allowance between East and West Flamboro tps., Ont.

14754. Sept. 13.—Relieving C.P.R. from further protection at Pottery Corner crossing, Ops tp., Ont.

14755. Sept. 13.—Ordering G.T.R. to provide farm crossing for J. Lauzon, Tilbury North, tp., Ont.

14756. Sept. 14.—Authorizing Saskatchewan Government to build highway crossing over C.P.R. along north of sec. 15, tu. 5, r. 11, w. 2 m.

14557. Sept. 14.—Authorizing C.P.R. to build across highway crossing east of Lachevrotiere station, Que.

14758. Sept. 14.—Authorizing C.P.R. to build its Plenty ballast pit spur on its Moose Jaw northwesterly branch to sec. 3, tp. 33, r. 19, w. 3 m., Sask.

14759. Sept. 14.—Amending orders re operating of semaphores at crossing of Hull Electric Ry. by C.P.R. at Hull, Que.

14760. Sept. 13.—Ordering C.N.R. to fence its right of way on its Wawanesa subdivision by July 1, 1912, under penalty of $25 a day.

14761. Sept. 13.—Authorizing C.N.R. to connect with G.T.P.R. Melville-Yorkton branch, in s.w. ¼ of sec. 36, tp. 30, r. 4. w. 2 m., Sask.

14762. Sept 14.—Extending to Oct. 15, time for completion by C.N.R. across Notre Dame St., Montreal, and Montreal St. Ry.

14763. Sept. 14.—Authorizing C.N.R. to cross and divert public road on its Rossburn line, between secs. 21 and 20, tp. 25, r. 31, w. p.m., Sask.

14764. Sept. 18.—Authorizing C.N.R. to cross with its Strathcona-Camrose line eight highways in Alberta.

14765. Sept. 11.—Ordering C.P.R. to build crossing at extension of Henderson St., Grayson, Sask.

14766. Sept. 18.—Authorizing C.P.R. to rebuild bridge 93.5 over Stave River, B.C.

14767. Sept. 18.—Authorizing C.P.R. to extend spur serving National Portland Cement Co. in Brant tp., Ont.

14768. Sept. 16.—Authorizing C.P.R. to operate sidings for Lethbridge Collieries Co. 4 m., near Lenzie, Alta.

14769. Sept. 16.—Authorizing C.P.R. to build two spurs to proposed freight shed at corner of Water and Sherbrooke Sts., Peterboro, Ont.

14770, to 14772. Sept. 18-16.—Approving details of masonry of abutments for subway to be built at Keele St., and or bridges to be built at Jameson and Dowling Aves. Toronto.

14773 to 14775. Sept. 18.—Authorizing G.T.P. Branch Lines Co., to cross with its Biggar-Calgary branch, three highways in Winslow municipality, and two highways in Prairiedale municipality, Sask.

14776. Sept. 18.—Authorizing G.T.P.R. to cross with its Lake Superior branch, C.N.R. main line at Empire St., Fort William, Ont., interlocker to be installed.

14777. Sept. 18.—Authorizing C.P.R. to join its main line at mileage 88 from Victoria Harbor, with its Ontario and Quebec line at mileage 38.57 from Havelock, Ont.

14778. Sept. 18.—Approving C.N.R. location through tps. 10-11, r. 1-3, w. 3 m., Sask.

14779. Aug. 8.—Appointing 12 fire wardens to investigate fire appliances with which locomotives operating in British Columbia are equipped

14780, 14781. Sept. 2, Aug. 31.—Dismissing Fullerton Lumber and Shingle Co.'s complaint re credit allowed on shipments of lumber, C.P.R. accepting complainant's bond, and dismissing its complaint re rates on lumber.

14782. Sept. 2.—Dismissing New Westminster Board of Trade's application re cost of protecting crossing there.

14783 to 14785. Sept. 2-1.—Dismissing applications of Prudential Investment Co., and Prudential Builders, Ltd., re rebate on cost of spur rates on V.V. and E. Ry., and cost of constructing spur at Burnaby Lake, B.C.

14786. Aug. 31.—Dismissing V.V. and E. Ry. application to take certain lands at Burrard Inlet, Vancouver, B.C.

14787. Sept. 7.—Dismissing complaint of Canadian Rate Adjusting Agency, Lethbridge, Alta., re car of apples frozen in transit.

14788. Sept. 7.—Dismissing complaint of Elko B.C., board of trade re refusal of G.N.R. to instal agent there.

14789. Sept. 15.—Authorizing C.N.R. to cross highway in Maryfield, Sask., with its Prince Albert-Battleford line.

14790. Sept. 14.—Authorizing city of Toronto to erect wirts across C.P.R. wires at Avenue Road.

14791, 14792. Sept. 15—Authorizing G.T.P. and G.T.P. Branch Lines Co. to build stations at Mackay and Alix, Alta.

14793. Sept. 15.— Authorizing G.T.R. to build spur or W. Laking, Haliburton, Ont.

14794. Sept. 15.—Approving G.T.R. plans of gates at Simplex St., St. Pierre, Que.

14795. Sept. 14.—Authorizing C.N.R. to cross public road on its Prince Albert-Battleford line in Mayfield, Sask.

14796. Sept. 13.—Authorizing C.P.R. to cross with its Lauder Westerly extension from Tilston to Griffin, four highways in Albert municipality, Sask.

14797. Sept. 13.—Authorizing C.P.R. to cross three highways with its Bulyea South branch, Alta.

14798. Sept. 15.—Authorizing C.P.R. to build additional track across St. Hubert St., Montreal.

14799. Sept. 16.—Authorizing C.P.R. to build extra track under viaduct on Wellington St., Ottawa, Ont.

14800. Sept. 13.—Authorizing C.P.R. to rebuild five bridges on its Eastern Lake Superior and Alberta Divisions.

14801. Sept. 13.—Approving details of subway to be built over Jane St. West Toronto, Ont.

14802. Sept. 18.—Authorizing Canadian General Electric Co. to erect travelling crane over C.P.R. spur, Peterboro, Ont.

14803. Sept. 18.—Approving Alberta Central Ry. location from mileage 64.5 to 71.3 west of Red Deer.

14804. Sept. 19.—Authorizing C.N. Alberta Ry. to cross seven highways with its St. Albert Westerly line.

14805. Sept. 19.—Authorizing C.N.R. to cross with its Rossburn line 13 highways in Saskatchewan.

14806. Sept. 19.—Authorizing C.P.R. to build siding across road allowance near Qu Appelle station, Sask.

14807. Sept. 18.—Approving location of G.T.P. Branch Lines Co.'s line from east line of sec. 9, tp. 33, r. 21, to south line of sec. 11, tp. 31, r. 25, w. 3 m. mileage 50.23 to 77.13, ask.

14808. Sept. 19.—Authorizing G.T.P. Branch Lines Co. to cross highway with its Calgary branch at mileage 185, Alta.

14809 Sept. 15.—Approving site of G.T.P.R. station at Rosevear, Alta.

14810. Sept. 18.—Approving stress sheets of proposed G.T.R. bridge at Lost Channel, District 30, near St. Louis station.

14811. Sept. 19.—Further extending to July 1, 1912, time for completion by G.T.R. of overhead bridge at Lachine Road, Montreal.

14812. Sept. 11.—Ordering C.N.R. to file plans within one month for undercrossing about one mile from Camrose, Alta.

14813. Aug. 31.—Dismissing application of Matsqui-Sumas board of trade for order directing C.P.R. and B.C. Electric Ry. to build crossing at Hazel St., Abbottsford, B.C.

14814. Aug. 31.—Dismissing application of C. J. Piper, Piper's Siding, B.C., re passenger rates charged by Vancouver, Fraser Valley and Southern Ry.

14815. Sept. 1.—Dismissing application of transportation committee of Surrey, B.C., board of trade, re refusal of G.N.R. to carry explosives on its mixed trains to Hazelmere, B.C.

14816. Sept. 2.—Authorizing C.P.R. to build spur for Nicola Valley Pine Lumber Co.

14817. Sept. 20.—Approving Alberta Central Ry. location from mileage 160 to 194.6 east from Red Deer.

14818. Sept. 20.—Authorizing C.P.R. to build spur to Louden Hardware Specialty Co.'s premises, Winnipeg, Man.

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14819. Aug. 1.—Ordering G.T.R. to build interchange track with C.P.R. at Ingersoll, Ont.

14820. Sept. 21.—Ordering C.P.R. to submit within 30 days reasons why it should not erect or join with Napierville Jct. Ry., in erecting a station at Delson Jct., Que., re order 14362, July 21.

14821. Sept. 19.—Authorizing G.T.R. to build spur into Beardmore & Co.'s premises, Acton, Ont.

14822. Sept. 4.—Authorizing B.C. Electric Ry. to cross G.N.R. at New Westminster, interlocking plant to be installed.

14823. Sept. 11.—Ordering C.P.R. .to build highway crossing at First Street North, Strathcona, Alta.

14824. Sept. 8.—Dismissing application of town of Nanton, Alta., for crossing at Alberta St., by C.P.R.

14825. Sept. 14.—Ordering city of Moose Jaw, Sask., to show cause why it should not contribute to cost of bridge over C.P.R. at Thunder Creek.

14826. Sept. 20.—Authorizing C.P.R. to build bridge 3.6 Benny's Subway-Montreal Terminals, Eastern Division.

14827. Sept. 20.—Approving location of Algoma Central & Hudson Bay Ry., from mileage 30.08 to 83.

14828. Sept. 20—Approving detail plans of C.N.O.R. bridge over Rideau River, Gloucester and Nepean tps.

14829. Sept. 20.—Approving location and detail plans of passenger shelters for Sandwich South tp., Ont., to be built by Windsor, Essex and Lake Shore Rapid Ry.

14830. Sept. 21.—Approving plans of South Ontario Pacific Ry. bridge at mileage 12.46 East Flamboro tp.

14831 to 14833. Sept. 21.—Authorizing C.P.R. to build spurs for A. Bremner, Ltd., to ballast pit, Terrebonne County, Que.; John Morrow Screw Works, Ltd., Ingersoll, Ont., and Sand & Supplies Ltd., Dumfries tp. Ont.

14834. Sept. 21.—Approving detail plans of C.P.R. overhead roadway bridge, Peterboro Lumber Co.'s premises to George St., Peterboro, Ont.

14835. Sept. 22.—Authorizing G.T.P. Branch Lines Co., to build its Biggar-Calgary branch across three highways in Alberta.

14836. Sept. 22..—Approving C.N.O.R. revised location through Boulter, Chisholm, and Himsworth tps., Nipissing and Parry Sound districts, mileage 316.74 to 328.13.

14837. Sept. 22.—Authorizing C.N.O.R. to cross and divert Stanley Ave., Junction Gore, Gloucester tp.

14838. Sept. 22.—Authorizing C.N.O.R. to cross Riviere des Prairies, main channel, at mileage 40 from Hawkesbury.

14839. Sept. 25.—Ordering C.P.R. to make Verner, Ont., a flag station for trains nos. 1 and 2, for passengers travelling either way between Verner and any point.

14840. Sept. 25.—Approving change in location of proposed C.P.R. station at Hammond, B.C.

14841. Sept. 25.—Authorizing G.T.P. Branch Lines Co. to cross with its Prince Albert branch, highways between mileage 85.7 and 85.9, East Saskatchewan District.

14842. Sept. 25.—Authorizing G.T.P.R. to operate trains over bridge at Kaministikwia River, near Fort William, Ont.

14843. Sept. 25.—Authorizing G.T.P.R. and C.P.R. to operate trains over interlocking plant, near Forrest, Man., without coming to a stop.

14844. Sept. 27.—Approving C.N.R. location through tp. 11, r. 5 to 7, w. 3 m., Sask., mileage 77.27 to 97.

14845, 14846. Sept. 23.—Approving C.N.O.R. revised location, mileage 89 78 to 94.97 and 101.52 to 110.14 from Sudbury Jct., Algoma District.

14847. Sept. 25.—Rescinding order 14761, Sept. 13, re connection of C.N.R. and G T P.R. s.w. ½ sec. 36, tp. 30, w. 2 m., Sask.

14848, 14849. Sept. 27.—Authorizing C.P.R. to build its Virden-McAuley Branch across 12 highways in Manitoba.

14850. Sept. 26.—Authorizing C.P.R. to build extension to bridge 43.4 on its Farnham subdivision, over G.T.R. and Montreal, Park and Island Ry.

14851. Sept. 26.—Authorizing Kootenay Central Ry. Co. (C.P.R.) to divert highway at mileage 11.

14852. Sept. 27.—Approving details of South Ontario Pacific Ry. bridge 15.4 over G.T.R. near Hamilton, Ont.

14853. Sept. 25.—Authorizing South Ontario Pacific Ry. (C.P.R.) to divert forced road on lots 12 and 13, con. 2. East Flamboro. tp., Ont.

14854. Sept. .26.—Approving location of G.T.P. Branch Lines Co.'s proposed station at Mulcahey, Sask., on its Melville-Regina Branch.

14855. Sept. 25.—Authorizing G.T.P. Branch Lines Co., to cross highway with its Prince Albert Branch at mileage 86.5, Sask.

14856. Sept. 26.—Approving location of Algoma Central and Hudson Bay Ry. from mileage 83.00 to 129.39, Ont.

14857. Sept. 27.—Relieving Toronto, Hamilton and Buffalo Ry. from further protection at Bow Park crossing, east of Brantford, Ont.

14858. Sept. 26.—Authorizing C.P.R. to build spur into Alberta Sewer Pipe Co.'s premises, at Calgary Jct., Alta.

14859. Sept. 28.—Authorizing C.P.R. to cross with its Virden-McAuley Branch, 17 highways in Saskatchewan.

14860. Sept. 28.—Authorizing G.T.P. Branch Lines Co., to cross highways on its Melville-Regina Branch, Assiniboia District Sask.

14861. Sept. 30.—Authorizing C.N.R. to open for traffic its line from Toronto to Trenton.

14862. Sept. 25.—Authorizing C.P.R. to build spur for W. A. Denby, Calgary Jct., Alta.

14863. Sept. 1.—Authorizing C.P.R. to take certain lands in Coquitlam municipality, New Westminster District, B.C., for accommodation of traffic.

14864. Sept. 28.—Authorizing G.T.R. to build spur for Crushed Stone, Limited, in Eldon tp., Ont.

14865. Sept. 27.—Authorizing G.T.R. to build additional track across Montrose St., Preston, Ont.

14866. Sept. 22.—Approving plans of G.T.R. bridge at Sunnyside crossing, Toronto, without prejudice to Toronto & York Radial Ry.

14867. Sept. 19.—Dismissing application of C.N.O. Ry. to divert private roadway to C.H. & B. Billings, Junction Gore, Gloucester tp.

14868. Sept. 23.—Approving C.N.O.R. location from mileage 0 to 10.97 from Yonge St. and through part of York tp. and Etobicoke.

14869. Sept. 1.—Authorizing Vancouver Victoria & Eastern Ry. to build farm crossing over C.P.R. between Rymer and Campbell Aves., Vancouver, B.C.

14870. Sept. 4.—Authorizing B.C. Electric Ry. to cross C.P.R. at Millside, B.C

14871, 14872. Sept. 1.—Cancelling G.N.R. Special Tariff Supplement 32 to C.R C. 602, so far as it affects traffic of Vancouver-Prince Rupert Meat Co., and to restore Supplement 22, and ordering G.N.R. to furnish refrigerator cars properly equipped for handling the company's meat shipments.

14873. Sept. 15.—Authorizing Vancouver-Nanaimo Coal Co. to carry its line from coal mine across Esquimalt & Nanaimo Ry., Mountain District, Vancouver Island.

14874. Aug. 31.—Ordering C.P.R. to provide safe crossings in Yale, B.C., and to limit speed of trains through town.

14875. Sept. 2.—Ordering G.N.R. to file within 30 days, plans showing interchange track with C.P.R. at Sapperton, B.C.

14876. Sept. 2.—Ordering G.N.R. to provide station at Mountain, B.C., equal to standard no. 2.

14877. Sept. 14.—Authorizing city of North Vancouver, B.C., to build subway at Columbia Ave., on C.P.R. lands, 20% of cost to be paid from railway grade crossing fund.

14878. Sept. 19.—Authorizing G.T.R. to build subway under its tracks at Guelph, Ont.

14879. Sept. 23.—Extending to Oct. 31 time for completion of C.P.R. subway at 8th St. West, Calgary, Alta.

14880. Sept. 28.—Ordering C.P.R. to build highway crossing at milepost 158 on its Sault Branch, for Laird tp., Ont.

14881, 14882. Sept. 15.—Prescribing express delivery and collection limits for Brandon and Portage La Prairie, Manitoba.

14883. Sept. 19.—Ordering G.T.R. to build a foot subway east of eastern abutment of Huskisson St., Guelph, Ont., and to widen approaches to main subway.

14884. Sept. 30.—Authorizing G.T.R. to build spur at Point Claire Station, Que.

14885. Sept. 19.—Authorizing C.N.O.R. to cross Point Anne Road, Point Anne con., Thurlow tp.

14886. Aug. 19.—Dismissing application to compel G.T.P.R. to erect station at Kitsumkalum and siding and flag station at Stewarts Landing, B.C.

14887. Sept. 2.—Ordering G.N.R. to amend item no. 70 of Special Tariff C.R.C. 602, June 20, 1909, applying on lumber, lath and shingles shipped from B.C. to Vancouver and New Westminster to provide the reduced minimum of 30,000 lbs. for cars less than 36 ft. long.

14888. Aug. 31.—Authorizing G.N.R. to refund to Fullerton Lumber & Shingle Co. $12.85, amount overcharged on shipment of lumber from Tynehead to Moosejaw.

14889, 14890. Sept. 29.—Authorizing G.T.R. to rebuild 10 bridges on its Northern Division.

14891. Sept. 29.—Authorizing International Bridge & Terminal Co. to build bridge over Rainy River at Fort Frances, Ont.

14892. Sept. 30.—Authorizing C.N.Q.R. to cross Valois St., Montreal.

14893. Sept. 30.—Extending to Mar. 31, 1912, time for completion by Dominion Atlantic Ry. of bridge over Shubenacadie River at South Maitland, N.S.

14894. Sept. 30.—Authorizing C.N.Q.R. to cross Ontario St., Montreal.

14895. Sept. 30.—Relieving G.T.P. Branch Lines Co. from installing interlocking plant at crossing of its Melville-Regina Branch with C.N.R. incinerator spur, near Saskatoon, Sask.

14896. Sept. 29.—Authorizing G.T.R. to rebuild four bridges on its Northern Division.

14897. Sept. 30.—Authorizing C.N.R. to cross with its Swift Current line, 13 highways in Saskatchewan.

14898, 14899. Sept. 30.—Authorizing Algoma Central & Hudson Bay Ry to operate extension of its main line to Bruce St. and extension across Huron, Hudson, West and Portage Sts., Sault Ste Marie, Ont.

14900, 14901. Sept. 29.—Authorizing C.N.Q.R. to cross Chambly and Nicolet Sts., Montreal, by adding double track.

14902. Oct. 2.—Authorizing C.N.R. to open for traffic its line from Totogan to end of track, 17 miles, on its Oakland Extension, Man.

14903. Sept. 29.—Authorizing C.P.R. to build branch and Y near Byng Inlet station, Parry Sound District, Ont.

14904. Sept. 29.—Authorizing Georgian Bay & Seaboard Ry. (C.P.R.) to cross C.N.O.R. at mileage 41.08 from Victoria Harbor, interlocking plant to be installed.

14905. Sept. 29.—Authorizing C.P.R. to open for traffic its Lacombe Easterly Branch from mileage 85.89 to 105, between Castor and Coronation, Alta.

14906, 14907. Sept. 14. 15.—Prescribing express delivery and collection limits for Regina, Sask., and St. Boniface, Man.

14908. Sept. 7.—Dismissing application of residents of Kipp, Alta., to compel C.P.R. to erect station.

14909. Oct. 3.—Authorizing C.N.O.R. to build bridge over creek at station 135.80, Gloucester tp.

14910. Oct. 3.—Authorizing G.T.R. to open for traffic its railway between Orillia and Midland, at Tiny Jct., to between Colwell and Penetanguishene, at Saurin Jct., Ont.

14911. Sept. 25.—Authorizing Essex Terminal Ry. to cross Sandwich, Windsor and Amherstburg Ry. on Bedford St., Sandwich, Ont. derails and signals to be provided.

14912. Oct. 2.—Extending to Dec. 31 time for completion by C.P.R. of subway in sec. 34, tp. 24, r. 2, w. 5 m.

14913. Oct. 2.—Dismissing application of city of St. Boniface, Man., re constructing Rue Messier across C.P.R. Emerson branch.

14914. Oct. 3.—Authorizing Essex Terminal Ry. and Windsor, Essex and Lake Shore Rapid Ry. to operate trains over crossing on Howard Ave., Windsor, Ont., without being brought to a stop.

14915. Oct. 3.—Authorizing G.T.P. Branch Lines Co. to cross with its Brandon branch five highways in North Cypress municipality, Man.

14916. Oct. 3.—Authorizing G.T.R. to make deviation in siding into National Mfg. Co.'s premises, Ottawa, Ont.

14917. Oct. 3.—Authorizing C.N.O.R. and G.T.R. to operate trains over interlocker at Cobourg without stopping.

14918. Oct. 3.—Authorizing city of Toronto to maintain a relay telephone and 2.200 volt pole line in connection with its hydro electric system across C.P.R., G.T.R. and G.N.W. and C.P.R. Telegraph Co.s' wires at Strachan Ave.

14919. Oct. 3.—Authorizing South Ontario Pacific Ry. (C.P.R.) to build crossing at mileage 2.5.

14920. Oct. 2.—Authorizing C.P.R. to open for traffic its double track, Brandon Subdivision, mileage 55 to 92.4 and 121 to 131.2, Man.

14921. Oct. 3.—Authorizing C.P.R. to build spur for Standard Chemical Iron & Lumber Co., Winnipeg, Man.

14922. Oct. 4.—Authorizing C.N.R. to open for traffic its line from Vegreville to Warden, Alta., 109 miles.

14923. Oct. 2.—Authorizing Alberta Central Ry. to build bridge over Medicine River west of Red Deer, Alta.

14924, 14925. Oct. 5.—Authorizing C.N.Q. Ry to build double track across Orleans

(*Continued on page* 1047.)

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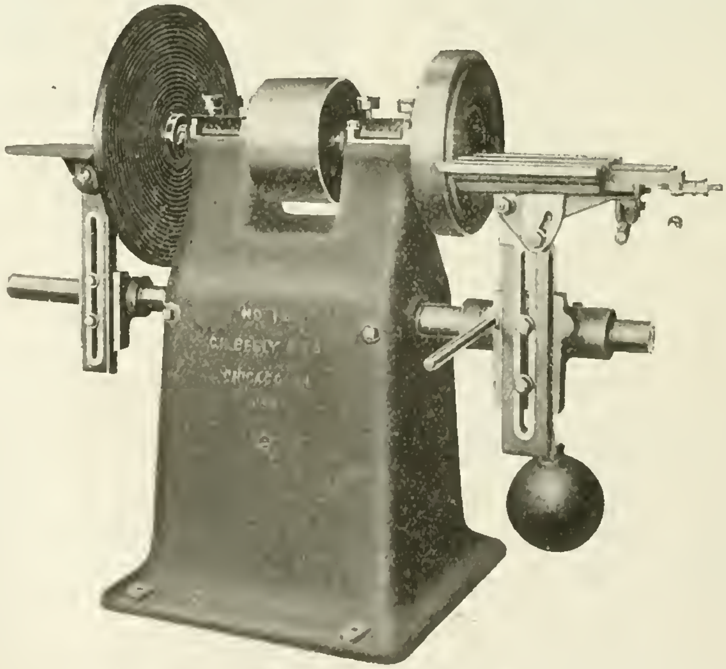

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Toronto, Canada, November, 1911.

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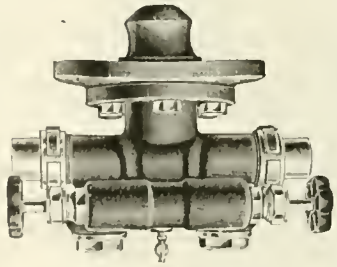

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(*Continued from page* 1043.)

and St. Jean D'Arc Sts., Montreal.

14926. Oct. 2.—Authorizing Thurlow Ry. to connect with C.N.O.R. on lot 23, Con. 1, Thurlow tp.

14927, 14928, Oct 5-4.—Authorizing G.T.P. Branch Lines Co., to build its Prince Albert branch across highway at mileage 103.5, and to cross with its Biggar-Calgary branch, 11 highways in Saskatchewan.

14929. Sept. 29.—Authorizing Toronto Eastern Ry. to connect with C.N.O.R. in con. 3, Darlington tp., fro mits line on Wellington St., Bowmanville.

14930, 14931. Oct. 2.—Authorizing C.P.R to extend spur in Moose Jaw, Sask., and to extend spur for Alexander Brown Milling Co., near Princess St., Toronto.

14932. Oct. 5.—Extending to Dec. 31, time within which C.P.R. may complete for Provincial Reformatory, Guelph tp. Ont., branch authorized by order 12409, Nov. 10, 1910.

14933. Oct. 3.—Authorizing C.P.R. to extend spur on Jarvis Ave., Winnipeg, for Gaar, Scott & Co.

14934. Oct. 4.—Authorizing C.P.R. to build its Quill Lake branch across 11 highways in Saskatchewan.

14935 to 14937. Oct. 4-5.—Approving location of C.P.R. stations at Champion, Nightingale, and Standard, Alta.

14938. Oct. 4.—Authorizing C.P.R. to build spur for Castor Coal Co. Castor, Alta.

14939. Oct. 6.—Authorizing C.P.R. to rebuild bridge 8.8 on its Cranbrook subdivision, Alberta Division.

14940. Oct. 7.—Authorizing G.T.P.R. to cross two highways in Shoal Lake District, Man., at mileage 8.8 and 9.5, Manitoba.

14941, 14942. Oct. 6-7.—Authorizing G.T.P. Branch Lines Co. to cross with its Brandon Branch, 12 highways in Manitoba, and to cross with its Battleford Branch two highways in Saskatchewan.

14943, 14944. Oct. 6.—Authorizing G.T.R. to build spur into St. Mary's Portland Cement Co.'s premises, Blanshard tp., Ont.

14945. Oct. 6.—Ordering Michigan Central Rd. to replace pipes under Wellington and Forest Sts. and third Ave., St. Thomas, Ont.

14946. Oct. 7.—Extending for 30 days time, time for installation of electric bell by C.P.R. at crossing near Piles Jct., Que.

14947. Oct. 7.—Approving G.T.R. plan A for re-arrangement of tracks at Powasson station, Ont.

14948. Oct. 7.—Authorizing James Bay and Eastern Ry. (C.N.R.) to cross and divert public road in Ashuapmouchonan tp., Que.

14949. Oct. 7.—Authorizing G.T.R. to build spur into Dominion Sugar Co.'s premises, Berlin, Ont.

14950. Oct. 9.—Authorizing G.T.R. to rebuild bridges 273. and 288 in Albion and Innisfail tps., Ont.

14951. Oct. 9.—Authorizing G.T.R. to build spur into Standard Chemical Iron and Lumber Co. of Canada's premises, South River, Ont.

14952 to 14954. Oct. 9, 5.—Authorizing G.T.P.R. to cross highway in n.w. ¼ sec. 5, tp. 11, r. 2, w. p.m., mileage 113.9; approving revised location from sec. 9, tp. 47, r. 1, to sec. 23, tp. 45, r. 4, w. 6 m. mileage 99.70 to 129 Alberta District, and from sec. 1 to sec. 8, tp. 45, r. 1, w. 6 m., mileage 110.57 to 113.53 Alta.

14955. Oct. 7.—Authorizing G.T.P. Branch Lines Co. to build across highway on its Yorkton extension, Sask.

14956. Oct. 9.—Authorizing C.N.R. to open for traffic its line between Delisle and MacRorie, Sask., 46 miles.

14957. Oct. 9.—Authorizing C N.O.R. to cross C.P.R. and G.T.R. near St Clair Ave., Toronto.

14958. Sept. 5.—Authorizing James Bay and Eastern Ry. (C.N.R.) to cross public road in Demueles and Ashumpmonchouan tps., Que.

14959. Oct. 4.—Approving location of Campbellford, Lake Ontario and Western Ry. from mileage 0, at Glen Tay, on C.P.R. southerly for 15.1 miles to western boundary of South Sherbrooke tp., Ont.

14960. Sept. 5.—Authorizing C.P.R. to divert original road allowance between secs. 20 and 29, tp. 15, r. 10, w. 4 m., Alta.

14961. Oct. 4.—Authorizing C.P.R. to cross with its Manitou Lake branch, eight highways in Manitoba.

14962. Oct. 6.—Approving location of C.P.R. Wilkie-Anglia branch, mileage 7.46 to 24.90, Sask.

14963. Sept. 11.—Dismissing application of A. R. Hanson, Prevost, Alta., re shipment on which overcharge is alleged against C.P.R.

14964. Sept. 19.—Ordering C.P R. to reduce export rate on lumber from Loranger. Hebert and Campeau to 5c. per 100 lbs., and to file a traiff making rates effective by Oct. 18.

14965. Sept. 14.—Ordering C.P.R. to extend its grain loading platform at Earl Grey, Sask., by No. 1.

14966. Sept. 7.—Dismissing application of farmers in vicinity of Staunton, Alta., re C.P.R. switching accommodation.

14967. Oct. 9.—Authorizing C.P.R. to use bridge 72.6 over Little Key River, Lake Superior Division.

14968, 14969. Oct. 6.—Authorizing C.P.R. to rebuild bridges 19.6 Brandon sub division, Manitoba Division, and over Kicking Horse River, Golden Mountain subdivisions, British Columbia Divisions.

14970. Oct. 6.—Authorizing Niagara, St. Catharines and Toronto Ry. to build spur for MacMahon Bros., Thorold, Ont.

14971. Oct. 9.—Authorizing B.C. Electric Ry. to cross C.P.R. at Columbia St. New Westminster.

14972, 14973. Oct. 3.—Authorizing Oshawa Electric Ry. to make certain changes in orders 14509 and 14508, Aug. 8, re spur to carriage factory and across Simcoe St., Oshawa, Ont.

14974. Sept. 19.—Authorizing Algoma Central and Hudson Bay Ry. to cross C.P.R. at grade at Hobon, Ont., interlocking plant to be installed.

14975. Oct. 4.—Approving deviation of Alberta Central Ry. location mileage 0 to 64.5, west from Red Deer.

14976. Sept. 15.—Dismissing application Municipality of Shellmouth, Man., re highway crossing on C.N.R.

14977. Sept. 15.—Ordering C.N.R. to erect gates at Main St crossing, Winnipeg, pending completion of track elevation required by order 14159, 30% of cost to be paid by C.N.R., 30% by city of Winnipeg, 30% by city of St. Boniface, 10% by Winnigeg Electric Ry; night and day watchman to be appointed.

14978. Oct. 3.—Approving C.N.Q. Ry. plans for bridge over Rouge River, St. Andrews Parish, Que..

14979. Sept. 19.—Authorizing C.N.Q.R. to take 15 ft. of B. J. Coghlin Co.'s land for railway purposes in Hochelaga ward, Montreal.

14980. Oct. 6.—Approving revised location C.N.O.R. Toronto-Ottawa line at Buck Lake, Bedford tp.

14981. Sept. 19.—Authorizing C.N.O.R. to operate trains for construction purposes only until Dec. 31 over C.P.R. and G.T.R. near Ottawa.

14982 to 14989. Aug. 10, Sept. 15.—Naming express delivery and collection limits for Port Arthur, Ont., Selkirk, Man., Watrous, Saskatoon and Prince Albert Sask. Edmonton Alta., Victoria and Vancouver, B.C.

14990. Sept. 14.—Authorizing G.T.P. Branch Lines Co. to cross two road allowances and divert one on its Prince Albert Sask. branch.

14991. Sept. 1-4.—Authorizing G.T.P.R. to build footwalk along Main St. and over C.P.R. to new dock at Vancouver, B.C., C.P.R. to build spur to wharf upon terms to be agreed upon.

14992. Oct. 12.—Authorizing C.P.R. to build spur for International Harvester Co., Regina, Sask.

14993. Sept. 11.—Authorizing city of Edmonton, Alta., to extend James St., across C.N.R.

14994. Sept. 11.—Extending to May 1st, 1912, time within which city of Edmonton, Alta., may comply with order 5598 re construction of subway for Edmonton Radial Ry. under C.N.R. and G.T.P.R. at First and Nemayo Aves., watchman to be installed at crossings.

14995. Aug. 31. Ordering G.N.R. to build iron pipe culvert on west side Cariboo Rd., Burnaby municipality, B.C., by Oct. 15, cost to be paid by municipality.

14996. Sept. 15. Authorizing Midland Ry. of Manitoba (G.N.R.) to connect with C.N. R. and cross G.T.P.R. in parish lot 55, St. Boniface parish, Man., interlocker to be enlarged at junction.

14997. Aug. 31. Ordering that G.N.R. drawbridge across False Creek, Vancouver, B.C., be protected by derails interlocked with home semaphores and operated by electricity.

14998 to 15001. Aug. 10 to Sept. 14.—Naming express delivery and collection limits for Fort William, Ont., Weyburn and Moose Jaw, Sask., and Nelson, B.C.

15002. Sept. 15.—Authorizing G.T.P. Branch Lines Co. to connect its Melville-Regina branch with C.P.R. Prince Albert branch in s.e. ¼ sec. 36, twp. 17, r. 20, w. 2 m., Regina, Sask., interlocking plant to be installed

15003. Oct. 3.—Extending to Jan. 1, 1912, or later, time for installation of interlocker at Chaudiere Jct., near Ottawa, for crossing of C.N.O.R. by C.P.R., crossing to be used on hand signal for construction purposes in meantime.

15004. Oct. 3.—Refusing application of Montreal St. Ry. for recommendation to Governor in Council of amalgamation agreements with Montreal Terminal Ry. and Montreal, Park Island Ry.

15005. Oct. 3.—Authorizing C.N.R. to build across Rainy Lake, Ont., and approving revised location subject to conditions to allow tying up of logs, and for passage of steamboats and logs.

15006. Sept. 15.—Naming express delivery and collection limits for Winnipeg.

15007. Oct. 5.—Authorizing C.N.Q.R. to cross with double track Bourbonniere St., Maisonneuve.

15008. Sept. 14.—Dismissing city of Saskatoon application for C.N.R. spur to power house under construction.

15009. Oct. 10.—Authorizing C.P.R. to build spurs for Thessalon Lumber Co., Lefrey tp., Ont.

15010. Sept. 1.—Naming express delivery and collection limits for New Westminster, B.C.

15011. Oct. 3.—Authorizing Kootenay and Alberta Ry. to take land at junction with C.P.R. Crow's Nest line in Alberta.

15012. Oct. 12.—Amending order 14562 re Alberta Government highway crossing over C.P.R. in s.w. ¼ sec. 36, tp. 46, r. 22, w. 4 m., by providing that cost of building and maintaining crossing be paid by C.P.R.

15013. Aug. 2.—Authorizing Alberta Ry. and Irrigation Co. to build Fourth Ave. across its railway in Warner.

15014. Aug. 2.—Authorizing South Ontario Pacific Ry. (C.P.R.) to connect its Guelph Jct. to Hamilton line with T.H. & B. Ry at mileage 16.17 near Hamilton, Ont.

15015. Aug. 2.—Authorizing G.T.R. to build branch crossing C.P.R. to connection with T. & N.O.R. at Nipissing Jct., Ont., interlocking plant to be installed.

15016. Oct. 12.—Approving plans of bridge to carry Dufferin St., Toronto, over G.T.R.

15017, 15018. Oct. 12.—Authorizing G T.P. Branch Lines Co. to amend orders 18890, June 13, and 10550, May 13, 1910, re location of Calgary branch.

15019 Oct. 11.—Authorizing C.P.R. to build spur for Harrison & Beatty, on lot 14, con. 12. Sydenham tp., Ont.

15020. Oct. 12.—Authorizing McKim tp. Ont., to build crossing over C.P.R. Stobie branch.

15021. Oct. 12.—Approving revised location of Vancouver Victoria and Eastern Ry. from Hope to west boundary of Yale District B.C., 24.17 miles.

15022, 15023. Oct. 12.—Amending orders 14890 and 14889 re G.T.R. Northern Division bridges.

15024. Sept. 15.—Naming express delivery and collection limits for St. Boniface, Man., and rescinding order 14907.

15025. Oct. 11.—Ordering Central Ontario Ry. to provide proper drainage for A. Doxstatot, Glen Ross, Ont.

15026. Oct. 16.—Authorizing C.N.O.R. to build bridge over Sydenham Lake, Loughborough tp.

15027. Oct. 10.—Authorizing C.P.R. to operate passing siding south of present main track, Thessalon tp., Ont.

15028 to 15031. Oct. 11, 10.—Authorizing C.P.R. to rebuild bridges at mileage 0.41. Manitoba Division, Fort William Terminals, at mileage 43.79, Chalk River subdivision, Eastern Division, at mileage 165.01 Sault Ste. Marie and branch, approving plans for work to be done at bridge 30.55, Gibson subdivision, Atlantic Division.

15032. Oct. 9.—Authorizing C.P.R. to build its Lacombe Easterly branch across 16 highways and divert one between mileage 106.30 to 119.72, Alta.

15033. Oct. 12.—Authorizing C.P.R. to cross passing siding over road allowance in Lefroy tp., Ont.

15034, 15035. Oct. 9.—Authorizing C.P.R to cross with its Regina, Saskatoon and North Saskatchewan line, six highways in Saskatchewan.

15036. Oct. 10.—Approving location of C. P.R. branch from MacLeod to Frank, mileage 0 to 54.52, Alta.

15037. Oct. 9.—Authorizing G.T.P.R. to build its main line across highways at mileage 72, North Alberta District.

15038 to 15042. Oct. 11, 10.—Authorizing G.T.P. Branch Lines Co. to cross with its Biggar-Calgary branch 11 highways and with its Calgary, Melville-Regina and Prince Albert branch at five highways in Saskatchewan.

15043. Oct. 10.—Authorizing G.T R. to rebuild swing bridge over Richelieu River, District 30.

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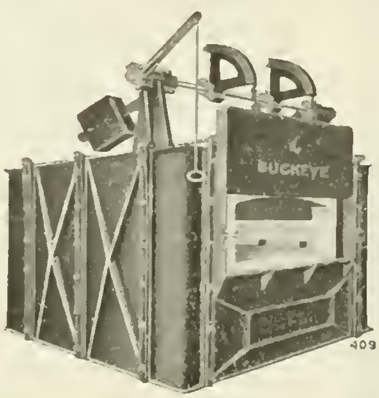

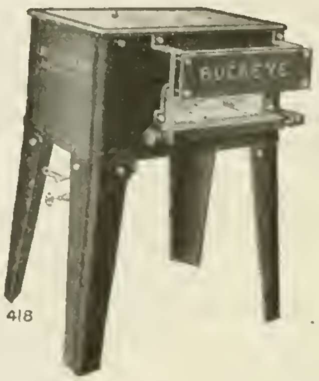

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D. McNicoll, Vice President, C.P.R., has been elected a director of Molson's Bank.

W. J. Lynch, son of P. J. Lynch, Superintendent, G.T.R. Barrie, Ont., died there recently.

C. M. Hays, President, G.T.R., and Mrs. Hays, returned to Montreal, Oct. 7, from their summer residence.

A. R. Owen, C.P.R. agent at Shanghai, left Montreal, Sept. 7, on his return to China, after a trip to Europe.

C. F. Smith, Vice President, Dominion Express Co., died in the Royal Victoria Hospital, Montreal, Sept. 30, aged 70.

T. Bower, for many years foreman in the Michigan Central Rd. shops, St. Thomas, Ont., died there, Sept. 30, aged 64.

S.R. Poulin, District Engineer, District F., National Transcontinental Ry., died in the hospital at St. Boniface, Man., Oct. 14.

Sir William Whyte, director, C.P.R., has been elected a director of the Imperial Guarantee and Accident Insurance Co. of Canada.

Sir W. H. White, director, G.T.R., accompanied by Lady and Miss White, arrived in Canada, at the end of September, on a short visit.

Sir Donald Mann, Vice President, Canadian Northern Ry., has been elected Honorary President of the Toronto Inverness-shire Association.

R. A. R. Sinclair, son of Angus Sinclair, C.E., contractor, Canadian Northern Ry., was married at Toronto, Oct. 14, to Miss Muriel Jarvis.

Arrangements are being made for a public banquet to Sir Wm. Whyte, in Winnipeg, in connection with his retirement from railway service.

E. J. Wearing, G.T.R. passenger agent in Liverpool, Eng., arrived in Victoria, B.C., Oct. 11, on a tour over the G.T.R. and G. T. Pacific Ry. lines.

Mrs. Balkwill, mother of Jas. Balkwill, chief clerk in the Superintendent's office, Michigan Central Rd., St. Thomas, Ont., died at Dutton, Ont., Oct. 6.

W. G. Annable, General Passenger Agent, C.P.R., Atlantic Lines, and Mrs. Annable, returned to Montreal, Sept. 29, from a trip to Great Britain.

W. Harty, President, Canadian Locomotive Co., Kingston, Ont., has resigned the chairmanship of the Governors of the School of Mines, Kingston.

Miss Gertrude Foy, eldest daughter of the late John Foy, President of the Niagara Navigation Co., was married in Toronto, Oct., 17, to C. S. Murray.

H. G. Wilson, secretary to Superintendent Tisdale, G. T. Pacific Ry., was run over by an engine and killed, Sept. 23, in the yards at Transcona, Man.

E. H. Keating, M. Can. Soc. C.E., ex-Manager, Toronto Railway, returned to Toronto, Oct. 22, from Europe, accompanied by Miss Keating and Miss Jessie Keating.

M. W. Irwin, who died in Guelph, Ont. Oct. 13, from the effects of an accident, was a twin son of J. Irwin, Superintendent, Canadian Northern Ry., Dauphin, Man.

Lord Northcote, who died in England, Sept. 29, was, as H. Stafford Northcote, one of the first directors of the C.P.R. Lady Northcote is the adopted daughter of Lord Mount Stephen.

Mrs. J. D. McDonald and Miss McDonald have left Toronto to reside in Chicago, in consequence of Mr. McDonald's appointment there as Assistant General Passenger Agent, G.T.R.

Miss E. M. Reid, daughter of the late R. Reid, of London, one of the original members of the National Transcontinental Railway Commission, was married in Ottawa, Oct. 11, to G. J. Ingram.

Guy Tombs, General Freight and Passenger Agent, Canadian Northern Quebec and Quebec and Lake St. John Railways, has been appointed a justice of the peace for the Province of Quebec.

John H. Mulock, who died in Jersey, Channel Islands, recently, was a native of Brockville, Ont., and for some years was chief clerk in the audit section of the C.P.R. Freight Department, Montreal.

The King has awarded the King Edward medal of the first class to the widow of W. McFall, a C.P.R. locomotive driver, who was killed through devotion to duty at North Wakefield, Que., in April.

C. Luscombe, of the C.P.R. engineering staff at Smiths Falls, Ont., was presented with a cabinet of silver by his associates, on the occasion of his marriage to Miss M. Smith, which took place at Quebec, Oct. 12.

F. Jaques, of C. E. Jaques & Co., Montreal, was presented with a cabinet of silver by the marine men of the city, Oct. 12, R. Bickerdike, M.P., acting as spokesman. Mr. Jaques was married Oct. 18 to Miss M. Fahim.

J. W. Phair, Bridge and Building Master, Canadian Northern Quebec Ry., and Quebec and Lake St. John Ry., Joliette, Que., was killed near Quebec, Oct. 11, as a result of a collision between his gasoline car and an express train.

R. W. Fair, Stratford, Ont., won a G.T.R. scholarship at McGill University, Montreal, in the recent examinations. for the three scholarships open this year, there were only two candidates, and only one scholarship was awarded.

A. B. LaPrairie, who died at Point St. Charles, Montreal, Oct. 1, aged 73, retired from active railway service two years ago, after having been for 55 years with the G.T.R. for the last 33 years of which period he was foreman in the car repairing department.

J. C. Stubbs, Vice President and Director of Traffic of the Oregon-Washington Rd. and Navigation Co., the Oregon Short Line Rd., the Southern Pacific Ry., and the Union Pacific Rd., has announced, according to press reports, that he will retire on Jan. 1.

W. B. Scott, at one time clerk in the G.T.R. freight service at Guelph, Ont., and latterly Assistant Director of Maintenance and Operation, Union Pacific Rd., at Chicago, is reported to have been appointed Vice President and General Manager of that road at Omaha, Neb.

T. Skinner, of London, Eng., director, C.P.R., returned to Montreal, Oct. 16, after a trip to the Pacific coast on business connected with the Hudson's Bay Co., of which he is Deputy Governor. He was re-elected a director of the Dominion Atlantic Ry., at the annual meeting in Montreal, Oct. 13.

Lord Strathcona, who sailed from England, Sept. 23, on a flying visit to Canada, via New York, spent a few days in Montreal and Ottawa, returned to New York and sailed from there, Oct. 4, for England. It is announced that he will retain the office of High Commissioner for Canada, in England, for the present.

W. H. Plummer, Sault Ste Marie, Ont., who died in Toronto, Oct. 13, was associated with F. H. Clergue in the early days of the various industries owned by the Lake Superior Corporation. He was a brother of J. H. Plummer, President, Dominion Steel Corporation, and of F. Plummer, General Manager, Canadian Lake Line.

A. E. Boughner, who has been appointed Superintendent of Transportation, Missouri, Kansas and Texas System, Denison, Tex, was born in St. Thomas, Ont., and began his railway career with the Canada Southern Ry., where he was, from 1876 to 1880, consecutively, messenger, call boy and telegraph operator.

Miss Wicksteed, eldest daughter of H. K. Wicksteed, M. Can. Soc. C.E., Chief Engineer of Surveys, Mackenzie, Mann & Co., Ltd., was married at Cobourg, Ont., Oct. 18, to H. Morrison, of Dartmouth, N.S. The staff of the survey department gave a bracelet watch to the bride and a gold watch to the bridegroom. The C.N.R. management placed an official car at their disposal for a trip to Quebec.

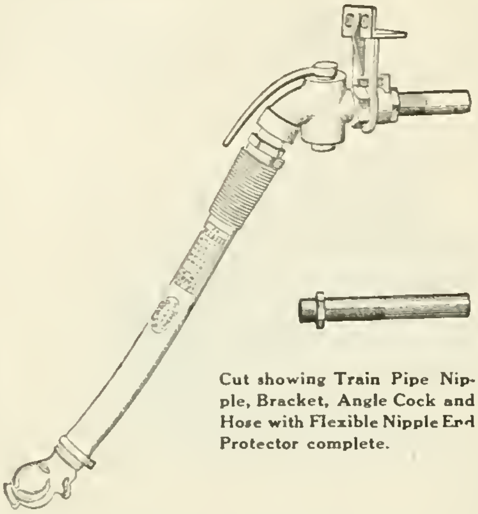
R. W. Leonard, M. Can. Soc. C.E., who has been appointed Chairman of the National Transcontinental Railway Commission, has been connected with railway construction with the C.P.R., and the St. Lawrence and Adirondack Ry. He is a graduate of the Royal Military College, Kingston, Ont., and a Governor of the Queens School of Mining. He is President and General Manager of Coniagas Mines, Ltd., and in military life holds the rank of Major. The salary attaching to the position is $10,000 a year.

Hon. Francis Cochrane, who has been appointed Minister of Railways and Canals, was born at Clarenceville, Que., Nov. 18, 1852. He entered political life as Minister of Lands and Mines in the Ontario Government, May 30, 1905, when he was elected as member of the Legislature for East Nipissing, and was re-elected for the newly created constituency of Sudbury in 1908, and continued to administer the same department, the name of which was changed to Lands, Forests and Mines, until his present appointment.

D. E. Galloway, who has been appointed Assistant to the President, G.T.R., and G.T.P.R., was born in Puslinch tp., Ont., Aug. 31, 1882, and entered G.T.R. service, Feb. 1, 1901, since when he has been, to Nov., 1901, in Claims Department, Hamilton, Ont.; Nov., 1901, to Sept. 21, 1904, in Claims Department and General Freight Department, Montreal; Sept. 21, 1904, to Jan. 7, 1910, private secretary to the Second Vice President and General Manager, G T.R., Montreal, and Jan. 7, 1910, to Oct. 2, 1911, private secretary to the President, G.T.R., and G.T.P.R., Montreal.

G. R. Starke, Secretary, Dominion Transport Co., W. A. Clarke, general agent, Dominion Express Co., and E. R. Belcourt, Manager, Shedden Forwarding Co., Montreal, are among the directors of the Montreal Vehicular Traffic Co., which has been incorporated under the Quebec Companies Act, with a capital of $10,000 and office in Montreal, to promote and facilitate the improvement of streets and roads, to suggest and promote the passing of bylaws and legislation as to traffic, and to do "every act and deed which may be expedient or necessary for the protection of the rolling and vehicular traffic generally."

Hon. John Douglas Hazen, who has been appointed Minister of Marine and Fisheries, was born at Oromocto, N.B., June 6, 1860. He was called to the bar in 1883, and was a member of the senate of the University of New Brunswick, and also registrar and treasurer, from 1882 to 1890. He was elected to the House of Commons for St. John, N.B., in 1891, but was defeated in 1896. In 1899 he was elected to the New Brunswick Legislature for Sunbury and was re-elected in 1903 and 1908. From 1899 to Mar. 24, 1908, he was leader of the opposition in the Legislature, and from the latter date he was Premier and Attorney General of the province.



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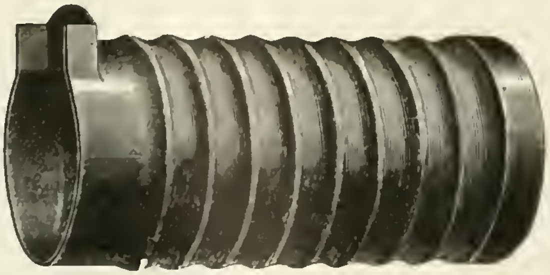

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M. G. Murphy, who has been appointed District Passenger Agent, C.P.R., Toronto, was born at Halifax, N.S., Feb. 26, 1878, and entered C.P.R. service, Mar. 31, 1899, since when he has been, to Jan., 1901, agent and operator, Atlantic Division; Jan., 1901, to 1903, chief clerk, Freight Agent, C.P.R., and agent, Dominion Express Co., Halifax, N.S.; 1903 to 1905, Travelling Passenger Agent, Atlantic Division; 1905 to June, 1907, Assistant to District Passenger Agent, St. John, N.B.; June, 1907, to Nov. 1, 1910, General Travelling Passenger Agent, Western Lines, Winnipeg; Nov. 1, 1910, to Oct. 1, 1911, General Travelling Passenger Agent, All Lines, Montreal.

The Canadian Freight Association, at its meeting in Montreal Oct. 19, passed the following resolution: "This association learns with regret that W. B. Bulling, owing to ill-health, has been obliged to retire temporarily from active duty as Assistant Freight Traffic Manager, C.P.R. Its members desire to place on record an appreciation of his services. His long years of experience, his accuracy and strength of memory, and the thoroughness of his work inspired respect and confidence, while his unfailing patience, integrity and courtesy caused him to be held in high esteem and friendly affection by all. It is the hope of this association that a complete rest may restore his health and enable him to once again become an active member."

C. H. Temple, who has been appointed Superintendent of Motive Power, Western Lines, C.P.R., Winnipeg, was born in Montreal in 1862, and entered railway service in 1874, since when he has been, to 1881, office boy and apprentice, G.T.R., Belleville, Ont.; 1881 to 1886, mechanic and mechanical clerk in Mechanical Superintendent's office, G.T.R. Montreal; in 1886 he was appointed Foreman, C.P.R. shops at Yale, B.C., and subsequently, to 1902, he acted as Foreman at Kamloops, Vancouver, Revelstoke and North End, B.C.; 1902 to Jan., 1905, Master Mechanic, Pacific Division, C.P.R.; Jan., 1905, to June, 1909, Master Mechanic, Central Division, C.P.R., Winnipeg; June, 1909, to Oct., 1911, Assistant Superintendent of Motive Power, Western Lines, C.P.R., Winnipeg.

R. S. Logan, who has been appointed Vice President, G.T.R., in charge of Land, Tax, Claims and Mail Department, Montreal, was born at St. Louis, Mo., Feb. 13, 1864, and entered railway service in 1885, since when he has been, to Dec. 1, 1890, clerk in General Manager's office, Wabash, St. Louis and Pacific Ry.; Dec. 1, 1890, to July 1, 1896, secretary to General Manager, Wabash Rd.; July 1, 1896, to Jan. 1, 1901, secretary to General Manager, G.T.R.; Jan. 1 to Mar. 15, 1901, Assistant to General Manager, G.T.R.; Mar. 15, 1901, to Mar. 17 1902, Vice President and General Manager, Central Vermont Ry.; Mar. 17, 1902, to Jan. 7, 1910, Assistant to Second Vice President and General Manager, G.T.R.; Jan. 7, 1910, to Oct. 2, 1911, Assistant to the President, G.T.R. and G.T.P.R.

M. M. Reynolds, who has been appointed Vice President, G.T.R., in charge of the Financial and Accounting Departments, Montreal, was for eleven years prior to Jan., 1892, Auditor, National Ry. of Mexico; Feb., 1892, to Mar., 1896, General Auditor, Central Vermont Rd., St. Albans, Vt.; Mar., 1896, to Apr. 30, 1899, Auditor for the Receivers, same road; May, 1899, to Sept. 30, 1902, Auditor, Central Vermont Ry., successor to the C.V. Rd.; Oct. 1, 1902, to Apr. 13, 1904, Comptroller, National Ry. of Mexico; Apr. 13, 1904, to Apr., 1908, Comptroller, same road, Mexican International Ry. and Mexican Interoceanic Ry.; Apr. 1, 1908, to Jan. 7, 1910, Fifth Vice President, G.T.R.; Jan. 7, 1910, to Oct. 2, 1911, Third Vice President, same road, and from Apr., 1908, also Third Vice President, G.T.P.R.

F. Nowell, who has been appointed District Master Mechanic, C.P.R., White River, Ont., was born at Stratford, Ont., May 31, 1872, and entered railway service, Feb. 1886, since when he has been, to 1893, machinist apprentice, C.P.R., Montreal; 1893 to Sept. 1895, not in railway service; 1895 to 1897, fitter and leading hand in erecting shop, C.P.R., Montreal; 1897 to July 1900, fitter, C.P.R., Kamloops, B.C.; July, 1900, to Feb., 1901, fitter, C.P.R., Montreal; Feb. 1901, to 1903, relieving foreman, C.P.R. shops, Montreal; 1903 to Jan., 1905, Night Locomotive Foreman, C.P.R., Outremont, Que.; Sept. 1905 to Dec., 1907, Locomotive Foreman, C.P.R., Three Rivers, Que.; Dec. 1907, to Mar., 1908, Locomotive Foreman, C.P.R., Quebec, Que.; Mar. 1908 to Sept., 1911, Locomotive Foreman, C.P.R., Ottawa, Ont.

R. L. Burnap, who has been appointed Assistant Freight Traffic Manager, G.T.R., Chicago, Ill., was born Sept. 20, 1872, and entered railway service in 1894, since when he has been, to May 1, 1896, consecutively, clerk in Local Freight Agent's office, Central Vermont Ry.; clerk in Division Freight Agent's office, Ogdensburg Transit Co., and clerk in Division Freight Agent's office, Central Vermont Ry., Ogdensburg, N.Y.; May 1 to Sept. 1, 1896, clerk in Commercial Agent's office, Central Vermont Ry., New York City; Sept. 1, 1896 to Feb. 1, 1900, Travelling Freight Agent, Central Vermont Ry., New London, Conn.; Feb. 1, 1900 to Aug. 1, 1905, Commercial Agent, Central Vermont Ry., New York City; Aug. 1, 1905 to May 1, 1908, General Freight Agent, Central Vermont Ry., St. Albans, Vt.; May 1, 1908 to Oct. 16, 1911, Assistant General Freight Agent, G.T.R., Chicago, Ill.

John Pullen, who has been appointed President, Canadian Express Co., was was born at Shepton Mallet, Eng., Jan. 23, 1863, and entered G.T.R. service, 1877, since when he has been, to 1878, in various capacities in the Assistant General Freight Agent's office, Sherbrooke, Que.; 1878 to 1880, in General Freight Department, Montreal; 1880 to 1890, secretary to Traffic Manager, Chicago, Ill.; 1890 to 1896, Agent, West Shore Fast Freight Line and subsequently Agent, Reading Despatch, Chicago, Ill.; 1896 to 1897, Division Freight Agent, Stratford, Ont.; 1897 to May 1, 1899, Division Freight Agent, Hamilton, Ont.; May 1, 1899, to May 1, 1900, General Freight Agent, Central Vermont Ry., St. Albans, Vt.; May 1, 1900 to Aug. 14, 1905, General Freight Agent, G.T.R., Montreal; Aug. 14, 1905, to Oct. 2, 1911, Assistant Freight Traffic Manager, G.T.R., Montreal.

J. E. Dalrymple, who has been appointed Vice President, G.T.R., Fourth Vice President, G.T.P.R., and Vice President, Central Vermont Ry., Montreal, in charge of traffic, was born at Montreal, Jan. 1, 1869, and entered G.T.R. service, July 1, 1883, since when he has been, to 1890, in various capacities in the Treasurer's office, Montreal; Apr. 1, 1890, to Feb. 1, 1896, secretary to Traffic Manager, Chicago, Ill.; Feb. 1, 1896, to May 1, 1899, secretary to General Traffic Manager, Montreal; May 1 to Aug. 1, 1899, Division Freight Agent, Hamilton, Ont.; Aug. 1, 1899, to May 1, 1900, Division Freight Agent, Detroit, Mich., Manager, G.T. Despatch Fast Freight; May 1, 1900 to 1902, General Freight Agent, Central Vermont Ry.; 1902 to 1903, Assistant to General Manager, G.T.R., Montreal; 1903 to Aug 14, 1905, General Freight Agent, Central Vermont Ry.; Aug. 14, 1905, to Apr., 1908, General Freight Agent, G.T.R., Montreal; Apr., 1908, to Oct. 2, 1911, Assistant Freight Traffic Manager, G.T.P.R., Winnipeg.

George Bury, who has been appointed Vice President and General Manager, Western Lines, C.P.R., and whose portrait appears on the first page of this issue, was born at Montreal, Mar. 6, 1866, and entered C.P.R. service in 1883, since when he has been, to 1887, clerk in Purchasing Department, and in General Manager's office; 1887 to 1889, secretary to Vice President and afterwards to President; 1889 to Mar., 1890, acting Superintendent, Dining, Sleeping and Parlor Car Service; Mar., 1890, to Sept., 1899, successively Assistant Superintendent at Chalk River, Ont., and Superintendent at North Bay, Ont.; Sept., 1899, to Feb., 1901, Superintendent at Fort William, Ont.; Feb., 1901, to Feb., 1902, Superintendent, Crows Nest Pass line, Cranbrook, B.C.; Feb. to May, 1902, Assistant General Superintendent, Lake Superior Division, North Bay, Ont.; May, 1902, to 1905, General Superintendent, Lake Superior Division, North Bay, Ont.; 1905 to Feb., 1907, General Superintendent, Central Division, Winnipeg; Feb., 1907, to Mar. 1, 1908, Assistant General Manager, Western Lines, Winnipeg; Mar. 1, 1908, to Oct., 1911, General Manager, Western Lines, Winnipeg.

C. A. Hayes, who has been appointed Freight Traffic Manager, G.T.R., Montreal, was born at West Springfield, Mass., Mar. 10, 1865 and entered railway service in 1882, since when he has been, to 1884, clerk, Freight Auditor's office, Connecticut River Rd., now Boston and Maine Rd.; 1884 to Oct. 1887, similar position, Boston and Lowell Ry., Boston, Mass.; Oct. 1887 to Nov., 1890, clerk, General Freight Agent's office, Boston and Lowell Ry., and its successor, Boston and Maine Rd.; Nov. 1890, to June 1892, General Freight and Passenger Agent, Central New England and Western Ry., Poughkeepsie, N.Y.; June to Oct. 1892, Division Freight Agent, Philadelphia and Reading Rd., while it had control of the C.N.E. and W.R., Hartford, Conn.; Oct., 1892 to June, 1896, New England Agent, National Despatch Line, Boston, Mass.; June 1896 to July, 1899, New England Agent and acting General Manager, National Despatch Line, Boston, Mass.; July, 1899, to May, 1903, Manager, National Despatch-Great Eastern Line, Buffalo, N.Y.; May, 1903, to Apr. 1908, Assistant General Freight Agent, G.T.R., Chicago, Ill.; Apr., 1908, to Oct. 16, 1911, General Freight Agent, G.T.R., Montreal.

H. G. Kelley, who has been appointed Vice President, G.T.R., in charge of Construction, Transportation and Maintenance Departments, Montreal, was born at Philadelphia, Pa., Jan. 12, 1858, and entered railway service in 1881, since when he has been, to 1884, Assistant Engineer on location, construction and bridge construction, Northern Pacific Ry., Western and Pacific Divisions; 1884 to 1887, engaged in mining; 1887, to Jan., 1890, Resident Engineer and Superintendent of Bridges and Buildings, St. Louis Southwestern Ry System, including the St. Louis Southwestern Ry. of Texas; Jan., 1890, to Mar., 1898, Chief Engineer, same road; Mar., 1898, to July, 1907, Chief Engineer, Minneapolis and St. Louis Rd., and from July, 1900, to July, 1907, also Chief Engineer, Iowa Central Ry., and from Mar. 1898, to Mar., 1899, also Consulting Engineer, St. Louis Southwestern Ry.; July, 1907, to Oct. 2, 1911, Chief Engineer, G.T.R. He is a member of the Institute of Civil Engineers of Great Britain, of the Canadian Society of Civil Engineers, and of the American Society of Civil Engineers, and served two terms as President of the American Railway

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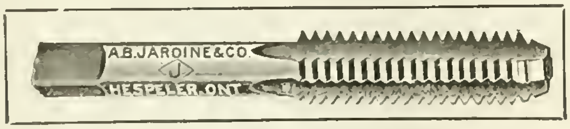
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J. G. Sullivan, who has been appointed Chief Engineer, Western Lines, C.P.R., Winnipeg, was born at Bushnell's Basin, N.Y., Jan. 11, 1863, and graduated C.E., at Cornell University, June, 1888. He entered railway service in July, 1888, since when he has been, to Mar., 1889, rodman, Great Northern Ry.; Apr., 1889, to Aug., 1890, rodman, instrument man and assistant engineer, Spokane Falls and Northern Ry.; Aug., 1890 to May, 1893, Asistant Engineer, Great Northern Ry. coast lines; July, 1893 to Feb., 1894, Assistant Engineer, Alberta Ry. and Coal Co.; July to Oct., 1894, section foreman, Northern Pacific Ry.; Oct. 1894, to Apr. 1895, Locating Engineer, Butte, Anaconda and Pacific Ry.; Apr. to Dec., 1895, Division Engineer, Kaslo and Slocan Ry.; Dec. 1895, to Feb., 1901, Locating and Reconnaissance Engineer and Engineer in Charge of Construction, Columbia and Western Ry.; Feb. 1901, to Sept., 1905, Division Engineer of Construction, Western Lines, C.P.R.; Sept. 1905 to Feb., 1907, Assistant Chief Engineer, Panama Canal; Feb. 1907, to Sept. 15, 1908, Manager of Construction, Eastern Lines, C.P.R., Toronto; Sept. 15, 1908, to Jan. 1, 1911, Assistant Chief Engineer, Eastern Lines, C.P.R., Montreal; Jan. 1, to Oct. 9, 1911, Assistant Chief Engineer, Western Lines, Winnipeg.

Grant Hall, who has been appointed Assistant General Manager, Western Lines, C.P.R., Winnipeg, was born at Montreal. Nov. 27, 1863, and entered railway service as an apprentice in the G.T.R. shops, Montreal. He has been from Mar. to July 1888, Master Mechanic, International Ry., Sherbrooke, Que.; Aug. 1888 to June 1889, Locomotive Foreman, C.P.R., Megantic, Que.; July 1889 to March 1890, Locomotive Foreman, C.P.R., Brownville Jct., Me.; Apr. 1890 to Feb. 1893, Locomotive Foreman, C.P.R., Windsor St., Montreal; Mar. 1893 to Aug. 1898, General Foremon, Intercolonial Ry., Moncton, N.B.; Sept. to Dec. 1898, Locomotive Foreman, C.P.R., Windsor St., Montreal; Jan. 1899 to Jan. 1901, General Foreman, C.P.R., McAdam Jct., N.B.; Feb. to June, 1901, General Foreman, C.P.R., Winnipeg; July 1901 to Nov. 1902, Master Mechanic, Pacific Division, C.P.R., Revelstoke. B.C.; Dec. 1902 to Feb. 1904, Assistant Superintendent of Rolling Stock, C.P.R.. Montreal; Mar. to Sept. 1904, Assistant Superintendent of Motive Power, C.P.R.. Montreal; Oct. 1904 to Jan. 1908, Assistant Superintendent of Motive Power. C.P.R., Winnipeg; Jan. 1908, to Oct. 1911, Superintendent of Motive Power, C.P.R., Winnipeg.

E. H. Fitzhugh, who has relinquished the duties of First Vice President, G.T.R., in consequence of his appointment as President, Central Vermont Ry, Central Vermont Transportation Co., Southern New England Rd. Corporation. Southern New England Ry., and Montreal and Southern Counties Ry., was born in Montgomery county, Mo., Feb. 1, 1853, and entered railway service in 1873, since when he has been, to 1889, successively, clerk in Master Car Builder's office, St. Louis, Kansas City and Northern Ry., in car mileage office, same road, and chief clerk to Superintendent, Western Division, Wabash, St. Louis and Pacific Ry.; 1889 to Jan., 1896, Master of Transportation, Wabash Rd., Moberley, Mo.; Jan., 1896, to May, 1899, Superintendent, Middle Division, G.T.R., Toronto; May, 1889, to Mar., 1901, Vice President and General Manager, Central Vermont Ry.; Mar. to Dec., 1901, Assistant to President, Southern Pacific Co.; Feb., 1902, to Dec., 1904, Vice President and General Manager, Central Vermont Ry., St. Albans, Vt.; Jan. 1, 1905, to Jan. 7, 1910, Third Vice President, G.T.R., Montreal; and Vice President, Central Vermont Ry.; Jan. 7, 1910, to Oct. 2, 1911, First Vice President, G.T.R., and to July 27, 1911, Vice President, Central Vermont Ry., at which date he was appointed President C.V.R.

Harry Robinson Safford, who has been appointed Chief Engineer of the Grand Trunk Railway System, was born at Madison, Ind., in 1875, and was educated in a course of civil engineering at Purdue University in that State, graduating from that institution in 1895. Previous to graduation, he had had active service in his profession, being employed with an engineering corps operating on the Pennsylvania lines west of Pittsburgh in 1893. Immediately after graduation, he entered the service of the Illinois Central Railroad, and was continually with it until May, 1910. During the first year of service he was employed as a rodman, since when he has been consecutively, 1896 to 1897, Resident Engineer; 1897 to 1900, Assistant Engineer; 1900 to 1901, Roadmaster of Amboy Division; 1901, Roadmaster Freeport Division; 1902, Roadmaster, St. Louis Division; 1903 to 1905, Principal Assistant Engineer; 1905 to 1907, Assistant Chief Engineer. In 1907 to 1910, Chief Engineer of Maintenance of Way; 1910 to 1911, Assistant to the President, Edgar Allan Manganese Steel Co.; 1911, Chief Engineer, George B. Swift Co. He is a member of the American Society of Civil Engineers and a charter member also of the American Railway Engineering Association, and has been very active in the work of the latter body, having served as chairman of the committee on records and accounts for a number of years.

W. Wainwright, who has been appointed Vice President, G.T.R., Montreal, was born at Manchester, Eng., Apr. 30, 1840, and entered railway service, Jan., 1858, with the Manchester, Sheffield and Lincolnshire Ry., now the Great Central Ry., serving successively as junior clerk in the Chief Accountant's office, senior clerk in the same office, secretary to Assistant General Manager, and secretary to General Manager. In 1862 he joined the G.T.R. staff, serving one year as senior clerk in the Accountant's office, three years as secretary to the Managing Director, six years as senior clerk to the Managing Director and in charge of the car mileage department, eight years and five months as General Passenger Agent; May, 1881, to May, 1890, Assistant Manager; May, 1890, to May, 1896, Assistant General Manager; from Apr., 1883, to Sept., 1895, also General Manager, North Shore Ry.; May, 1896, to July, 1907, General Assistant; Dec., 1900, to July, 1907, also Comptroller; July, 1907, to Jan. 7, 1910, Fourth Vice President; Jan. 7, 1910, to Oct. 2, 1911, Second Vice President, also Second Vice President, G.T.P.R.. He is a director of the Guarantee Co. of North America, director, Montreal Telegraph Co., Vice President, Richelieu and Ontario Navigation Co., Vice President, Grand Trunk Insurance and Provident Society, director, Canadian Express Co., and of various G.T.R. subsidiary lines. He was for eight years in command of a company of artillery in the old Grand Trunk Brigade, and retired with the rank of captain on its disbandment.

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Quebec Central Ry.—Gross earnings for July, $125,106.47; expenses $81,252.84; net earnings, $43 853.63, against $123,947.37 gross earnings; $80,592.21 expenses; $43,355.16 net earnings for July, 1910.

The Intercolonial Ry. has ordered 1,500 car wheels from the Nova Scotia Car Works, Halifax, to be delivered within one year.

Great Northern Ry. Lines in Canada

Midland Great Northern Ry. or Midland Ry. of Manitoba.—Track is reported to have been laid from St. James Jct., to the river, about two miles, on the company's line into Winnipeg. It is said that as soon as the bridge over the river is completed track laying will be resumed on the remaining mileage to a junction with the Canadian Northern Ry. line to Emerson.

It is said that the C.N.R. will, for the present, operate through freight over the C.N.R. line from Emerson as far as the junction and then over its own line to its own terminals. It is reported that an arrangement has been made by which the G.N.R. passenger trains will be run over the C.N.R. into Fort Garry station, Winnipeg, and that this arrangement will be put into effect as soon as it has received parliamentary sanction.

Crows Nest Southern Ry.—J. M. Gruber, General Manager, and other G.N.R. officials, went over this line Sept. 26, and local reports state that in addition to business connected with the annual inspection of the company's lines in Canada, the question of extending the line along the Elk Valley in the direction of Calgary was under consideration.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—Tracklaying is reported to be in progress beyond Princeton, B.C., through the Tulameen canyons. About five miles of track has been laid, and three bridges are being built. It is expected that track will be laid to Coalmount, 14 miles from Princeton, early in November. As soon as this is finished the bridge over the Similkameen River west of Maplehurst, will be built.

The General Manager and a party of officials visited Vancouver Oct. 9, and looked over the work in progress at the new False Creek terminals. It is said that it has been decided to transfer the handling of the local traffic from the present yards on Pender St., to the south side of False Creek and that tracks for this purpose will be laid at once.

Victoria Terminal Ry. and Ferry Co.—The Victoria city council is applying to the Provincial Government to compel the V.T.R. and F. Co., to observe the agreement with the city as to the laying of tracks and the operation of trains. It is alleged that tracks have been laid since 1909 without authority, and that the tracks do not conform to the grade of the streets.

Victoria and Sidney Ry.—It is reported that arrangements have been made to operate the car ferry now running from Victoria to New Westminster, between Victoria and Port Guichon. The change, it is said, will enable the ferry to make five additional round trips a month. (Oct., pg. 939.)

◆

A Railway to Hudson Bay.—It was reported Oct. 17, that the Department of Railways had notified the J. D. McArthur Co., which has the contract to build 185 miles of this line from Pas Mission, Sask., to delay further operations for time being. Up to the present time the contractor has only been taking in plant and supplies. A later report Oct. 23, stated that after an interview with the Minister, Mr. McArthur was given authority under which he will be able to proceed with certain portions of the work. (Oct., pg. 921.)

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Canadian Northern Railway Construction, Betterments, Etc.

Quebec, New Brunswick and Nova Scotia Ry.—A Quebec press report states that the projected extension of the Canadian Northern Ry. from Quebec to Fredericton, N.B., and the Atlantic coast in Nova Scotia, for which the company holds a charter with the above title, will be abandoned if a satisfactory agreement can be made for operating rights over the Intercolonial Ry.

Canadian Northern Quebec Ry.—The Board of Railway Commissioners has authorized the company to carry its lines across Ontario, Valois, Chambly and Nicolet streets, Montreal, the crossing of the last two streets being by a double track. The company had started operations on Valois St., Sept. 23, but had to stop upon the city council obtaining an injunction pending the order of the Board, which was made Sept. 30. This crossing is being made in connection with the enlargement of the freight yards.

Upon a recent trip to Montreal, Sir Donald Mann, is reported to have said he expected to see the C.N.R. transcontinental line completed in three years. With regard to the position of Montreal, the company would have a central terminal station in the heart of the city. The question of a union station with the G.T.R. had never been discussed. An announcement as to the terminal plans, etc., would be made in due time. He favored the tunnel approach, of the feasibility of which he was assured. The plans for all this work, however, would have to be approved by the city.

Application is being made to the Dominion Parliament to incorporate the Canadian Northern Montreal Tunnel and Terminal Co. to construct and operate a railway tunnel from some point in Montreal generally westerly under Mount Royal with the necessary approaches and works; to build the necessary lines of railway to connect the tunnel with the C.N.Q. Ry., the C.N. Ontario Ry., and with the Montreal Harbor Commissioners' tracks, the undertaking to be one for the general advantage of Canada.

Press reports say the C.N.R. interests are desirous of purchasing the St. James Methodist church property in Montreal, for terminal purposes. The property has an area of 77,550 sq. ft. with four frontages. The trustees announced Oct. 9 that they would consider an offer of $2,000,000 for the property, and this amount is said to have been put up by those desirous of making the purchase.

The Board of Railway Commissioners has authorized the building of a bridge across the main channel of Riviere des Prairies, at mileage 40 on the new line from Montreal to Hawkesbury.

The Dominion Parliament is being asked to extend the time within which certain lines authorized to be built in 1907 may be constructed.

Canadian Northern Ontario Ry.—The first section of 100 miles of the Toronto-Ottawa line was opened for traffic Oct. 9. It branches off from the Toronto-Sudbury line in the Don Valley, extending to Trenton, Ont., where a junction is effected with the Central Ontario Ry., which is under C.N.R. control. The Board of Railway Commissioners authorized the opening of the line for traffic Sept. 30, the inspecting engineer of the Department of Railways having approved the line Sept. 24. The construction of the remaining mileage into Ottawa is being proceeded with at a satisfactory rate.

The matter of the route from the Don Valley along the north part of Toronto in the direction of Hamilton, etc., has been before the Board of Railway Commissioners on several occasions lately. On Sept. 30, the Commissioners approved location plans from mileage 0 to 10.97 from Yonge St., and through part of York and Etobicoke tps. On Oct. 14, after a lengthy argument the Board ordered the C.N.R. and the C.P.R. to prepare and file plans by Dec. 31, for the elimination of all grade crossings from Avenue Road westward to Dufferin St. This order was made on the C.N.O.R. application for a final approval of its location across North Toronto, the C.P.R. being opposed to the utilization of a portion of its right of way by the C.N.O.R.

Ottawa press reports, Oct. 18, state that the C.N.R. proposes to build car shops on the large areas of land purchased by the C.N.R. around Merivale, about three miles from the Experimental farms and that options were taken on half a dozen farms, which have been closed.

The Dominion Parliament is being asked to extend the time within which certain already authorized lines may be built, and to give power to build the following additional lines: from Chisholm tp. southeasterly, to a junction with the Central Ontario Ry., and from near the head of Long Lake, northwesterly to a junction with the National Transcontinental Ry.

The Ontario and Ottawa Ry., which is a subsidiary of the C.N.R., is applying to the Dominion Parliament to extend the time for the building of the line authorized in 1910, and to authorize the construction of a line from Lake Couchiching westerly to Georgian Bay.

Sir William Mackenzie was reported as stating Oct. 1, that the Dominion guarantee of bonds in respect of the building of the Ottawa-Port Arthur line, has been fully settled. The Board of Railway Commissioners has approved revised location plans for the line through Boulter, Chisholm, and Himsworth tps., mileage 316.74 to 328.13; from mileage 89.78 to 94.97, and from mileage 101.52 to 110.14 from Sudbury Jct.

The construction of what is called the Sudbury-Port Arthur line is being carried out from both ends, one district having its engineering headquarters at Sudbury, with E. T. Agate as District Engineer, and the other its headquarters at Port Arthur, with H. T. Hazen as District Engineer. There are eight divisional engineers in the Sudbury district, each of whom has a staff of resident engineers under him. Following are the names and offices of the Division Engineers, with the names of their resident engineers:— Division A, G. Scott, Gowganda Jct.; G. F. Harrison. Division B, G. Scott, Gowganda Jct.; H. W. Perkins. Division C, Geo. Scott, Gowganda Jct.; Sect. 1, G. Taylor; Sect. 2, H. P. Thompson; Sect. 3, C. G. Brook; Sect. 4, A. B. Manson; Sect. 5, C. B. Price. Division D, F. G. Mackie, Bisco; H. Knifton, J. B. McLachlan, J. S. McIntosh, B. B. Hill. Division E, L. F. McCoy, Bisco; R. H. Duff, H. H. Blackwell, C. R. Needs. Division G, G. I. Root, Missanabi; E. W. Delano, P. Hone, C. M. Ainslie, R. Ridge. Division H, S. L. Whelham, Missinabe; W. L. Young, A. B. Churchill. Division I, W. M. Wilkie, Hobon; R. B. Jennings, J. A. Baird, E. L. Frost, F. C. Hay. There are four division engineers in the Port Arthur district, with 17 resident engineers stationed as follows:—Division A, A. P. Wenzell, Port Arthur; C. R. Schulb, B. H. Dow, T. C. Kanter, E. R. Griffin, C. D. Ashbrooke. Division B, E. L. Dorsett, Nipigon; W. K. Tanner, Pearl, Ont.; K. G. Polybank, Dorion, Ont.; C. H. West, Hurket, Ont.; R. M. Magnus, Coglin, Ont.; C. B. Croasdale, Nipigon, Ont.; Division C, C. T. Delamere, Nipigon; K. C. McFarland, L. E. Purvis, O. R. Lundbland, R. W. McKenney, W. A. Loomis. Division D, A. J. Isbister, Nipigon; H. C. Nelson, O. D. Jones.

It was reported, Oct. 12, that over 3,000 men were at work along the line. One of the most important pieces of work on the contract is the diversion of the Nipigon River, which is being done under contract awarded by the late Government. The river sweeps around a curve with such force as to eat away about 10 ft. of the bank in a year, and in order to make the permanent way possible a canal or cut-off is necessary, which when finished will divert the waterway nearly half a mile from its present channel.

Duluth, Winnipeg and Pacific Ry.—The tunnel at Short Line Park, Duluth, Minn., was reported completed, Sept. 26, and track has been laid through it. The tunnel is 50 ft. long, with a bore 17½ by 26 ft., with a 1% gradient, and is on a seven degree curve. The reconstruction of the bridge at 49th Ave., Duluth, is reported practically complete.

Canadian Northern Ry.—A contract is reported to have been signed under which Barnett and McQueen will build an extensive addition to the coal docks at Port Arthur, Ont. The addition will be 3,000 by 500 ft. It is expected to start construction in Jan., 1912.

The Board of Railway Commissioners has authorized the International Bridge and Terminal Co., which is one of the C.N.R. subsidiaries, to build a bridge over the Rainy River, at Fort Frances, Ont. This work is in connection with the company's line to Duluth, the final section of which, under the charter of the Duluth, Winnipeg and Pacific Ry., is approaching completion.

In connection with the extension of the Bird's Hill branch in the direction of Fort Alexander, it was reported, Oct. 12, that the company had acquired about 3,000 acres of land near Bird's Hill, and it is conjectured that it is proposed to locate shops there.

Plans were submitted to the city council of St. Boniface, Man., Oct. 7, for the company's terminals at that point. The members of the council subsequently went over the ground which it is proposed to lay out.

The extension of the Oakland branch from near Totogan, Man., for 17 miles was opened for traffic Oct. 3, the authorization of the Board of Railway Commissioners having been signed, Oct. 2. Totogan is at the head of navigation on Lake Manitoba and is one of the oldest settlements in the province.

The relaying of the old Qu'Appelle, Long Lake and Saskatchewan Ry. with heavier steel, has been practically completed between Regina and Saskatoon. A spur from the main line at Clarkboro is under construction into Saskatoon, where a store house is being built for locomotive and other supplies. At Warman, where the main line crosses the Q.'A., L.L. and S. Ry., considerable additional siding accommodation is being provided.

Engineers are reported to be at work making surveys for a line from Canora, Sask., on the main line, northerly to a junction with the Thunderhill line at Stanhope.

The Board of Railway Commissioners has approved location plans for a C.N.R. line through tp. 11, range 5, west of the 3rd meridian, mileage 77.27 to 97.

The plans for the C.N.R. line into Moose Jaw were before the city council, Sept. 30, and it was reported that the track laying gang had completed its work to about three miles south of Moose Jaw.

The Cowan Construction Co.'s grading outfit was delivered at Macleod, Alta., Oct. 10, and work was at once started about a mile south of the town. The route located proceeds southerly via Wellsville, then easterly to Eveline and on to Pincher Creek. H. L. Vercoe, one of the company's engineers, was in

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Macleod completing the arrangements for the work, Oct. 3. A Pincher Creek dispatch, Oct. 13, stated that the route had been approved from Macleod to a point nine miles southeast of Pincher Creek. This line, it is said, will form the continuation either of the line now being built from Maryfield westerly, or of that now being built to Moose Jaw.

The Board of Railway Commissioners has authorized the opening for traffic of the branch line from Vegreville to Warden, Alta., 109 miles, and a train service was put on Oct. 12. The construction of the line is being pushed on to Calgary, at which point, Sir Wm. Mackenzie, President, recently stated, a station, roundhouse and machine shop will be built this fall. It is said that the line will be extended southerly to a junction with the line near Standoff mentioned in the last paragraph.

From this Vegreville-Calgary line a branch is being built from Stettler to Rocky Mountain House. Track laying is reported to have been completed to Poplar Ridge, where a bridge is being built. Grading has been completed on the Medicine River, where another bridge is being built.

The Alberta Legislature is being asked to pass an act amending chap. 48 of the statutes of 1910 (second series) respecting the Canadian Northern Western Ry., by authorizing the building of the following additional lines of railway: from the Edmonton and Slave Lake Ry. between the southern boundary of tp. 61 and Athabasca Landing, generally northeasterly to Fort McMurray on the Athabasca River; from near Edmonton northerly and northeasterly passing west of Lac la Biche to a junction with the Fort McMurray line; from between Stony Plain and Wabamum Lake on the Edmonton, Yukon and Pacific Ry. southwesterly to tp. 49, range 8, west of the 5th meridian; from between Ladyminster and Minburn on the C.N.R. southerly to Medicine Hat; from between Cochrane and Nanton on a previously authorized line southerly to Pincher Creek; from near Brule Lake on the C.N. Alberta Ry. northerly to a junction with one of the already authorized lines of the C.N.W.R.

Another notice states that the C.N.W.R. will ask the Alberta Legislature to authorize the building of the following lines: from Athabasca Landing to Fort McMurray; from some point on this line to Lac la Biche; from Edmonton on the north side of the North Saskatchewan River to the eastern boundary of Alberta; from Bruderheim to Vermillion and thence to the southern boundary of the province; from near Wabamum Lake to tp. 4-9, range 8, west of the 5th meridian; from near Brule Lake, for 35 miles northwesterly; from Brule Lake northerly to a junction with a C.N.R. line; from Little Smoky River to Lesser Slave Lake; from near Medicine River southerly to Pincher Creek; from near Camrose to the eastern boundary of Alberta; from Athabasca Landing northerly to Peace River Landing; from near Big River or Stettler to the Saskatoon-Calgary line; from Calgary for 70 miles northerly; from Strathcona for 50 miles southwesterly.

Track laying is expected to be completed into Athabasca Landing, Alta., by Dec. 30, and for a considerable mileage on the line being built out from Onoway. Reports state that the whole of the extension from Onoway to the British Columbia boundary is under contract, and that steel had been laid to the Sturgeon River. The sub-contractors working on the line are reported to be: Phelan and Shirley, McMillan Bros. and Kenny, D. F. McArthur, and Jas. O'Connor. Work will be continued through the winter.

Application is being made to the Dominion Parliament to authorize an extension of time within which certain already authorized lines in Saskatchewan and Alberta, under the acts of the C.N. Ry., the Saskatchewan North Western Ry., the Saskatchewan Midland Ry. and the Alberta Midland Ry. may be built.

Canadian Northern Pacific Ry. With respect to the revision location survey of the line from Kamloops, B.C., to the summit of the Rocky Mountains in the Yellowhead Pass, at the British Columbia-Alberta boundary, we are officially advised that the distance between the two points is 250 miles. A level location was made in 1910 which showed that it was possible to obtain less than a 1% gradient over the worst section, which lies between the lower end of Moose Lake and 150 miles above Kamloops. Going west from the summit a gradient of 0.7% is obtained to Albreda summit, the divide between the Fraser and the North Thompson water, and it is expected that this gradient will not be exceeded between there and down to within 125 miles of Kamloops, to which point there is a 0.4% gradient from the coast. That is, there will be a gradient of 0.4% from the coast for 375 miles east, and it is expected that the gradient will not exceed 0.7% for the remaining 125 miles to the Yellowhead Pass. This 125 miles is not yet all definitely located, but three survey parties are at work, and it is expected to have the location furnished during the winter.

The contract for this section—from Kamloops to the Yellowhead Pass—has been let to the Northern Construction Co. and Cowan, and we are officially advised that construction gangs are at work on the first 40 miles out of Kamloops, and it is expected to have the next 60 miles under sub-contract immediately. There are no serious difficulties in the way of construction above Kamloops, and for the first 85 miles the work will be, for the most part, light and only comparatively heavy for the remainder of the distance to the summit. There are no long tunnels and little heavy bridging.

Vancouver Island Lines.—Press reports state that tenders will shortly be asked for a second section of the line on Vancouver Island. The section which will be put under contract will extend from mileage 60 to 100, near the northwest corner of Cowichan Lake. It will include some heavy work. Location surveys are reported to have been completed to Alberni, about 53 miles from the Cowichan summit.

Canadian North Eastern Ry.—A regular train service is being placed in operation from Stewart to Red Cliff, B.C The ballasting of the spur line to the Red Cliff mine was reported to be practically finished Sept. 30. A turntable is being put in at Red Cliff.

Plans of the preliminary survey for an extension of the line through the Bear River Pass to the Meziadin Lake have been prepared. They show a route passing through a tunnel 2008 ft. long at the pass, and along the north-eastern shore of the lake. A survey party in charge of C. Hoard is reported to be working from the Meziadin Lake easterly, with the view of joining up the surveyed route with a line which is being run by a party working west from the Rocky Mountains. This latter party was reported to be working in the vicinity of Fort Connolly, Sept. 29. (Oct. pg. 953.)

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Alberta Central Ry.—The Board of Railway Commissioners has approved location plans for the line between mileage 64.5. and 71.3 west of Red Deer; and between mileage 160 and 194.6 east from Red Deer, Alta. (Oct. pg. 935.)

Dominion Atlantic Railway Annual Meeting.

The annual meeting was held at the new head office, C.P.R. Windsor St. Station, Montreal, Oct. 13, the previous fourteen annual meetings having been held in London, Eng. Following are extracts from the report:

There has been a healthy increase in passenger business during the year, to which both railway and steamers have contributed. Freight business, however, shows a large decrease, there being a shrinkage of £20,474 in earnings under this head. The principal cause of the decreased freight earnings was the failure of the apple crop, which alone accounted for a falling off of nearly £15,000 in receipts. Both in quantity and quality the crop was the poorest Nova Scotia has had for many years, it being only about one-third of that of the previous year. With their receipts for apples thus reduced the spending power of the population in the territory served by the company was severely curtailed, with the result that the earnings in nearly all other commodities were adversely affected.

The balance available for the year, including £1,597 10s. 7d. brought forward from last year, is £42,503 6s. 10d. Against this, interest charges amount to £44,047 13s. 4d. The sale of investments held by the company, which stood in the books at £17,500, realized £16,280 7s., a loss of £1,219 13s. The total deficiency on net revenue account is £2,763 19s. 6d., and this has been charged to suspense account, which now stands at £33,039 3s. 2d. The proportion of working expenses to gross receipts was 84.3%, or an increase of 5.6% compared with the previous year.

There was no capital expenditure during the year. By the sale of the company's investments a reduction of £16,280 7s. was effected in the amount of temporary loans. A further sum of £9,000 was contributed from the company's general funds. This item now stands at £73,719 13s., compared with £99,000 at June 30, 1910.

The directors have arranged with the Canadian Pacific Ry. Co. to lease this company's railways and their appurtenances to that company for 999 years upon terms and conditions contained in lease which will be submitted for approval. As practically the whole of the preference and ordinary stocks are now held in Canada, the head office of the company has been transferred to Montreal. On July 12, at the special meeting of the stockholders, Sir Thomas G. Shaughnessy and D. McNicoll were elected additional directors. For the reason mentioned above H. W. Bilks and F. W. Taylor have tendered their resignations. In accordance with the bylaws all the directors retire at this meeting, and Sir Thomas G. Shaughnessy, D. McNicoll and T. Skinner offer themselves for re-election. To fill the vacancies created by the resignation of Messrs Birks and Taylor, it is proposed to elect R. B. Angus and I. G. Ogden. In consequence of the transfer of the head office to Montreal, the auditors, Drury, Thurgood & Co., of London, and Cunningham & Co., of Ottawa, do not seek re-election. John Leslie, of Montreal, will be nominated as auditor.

The following are the directors for the current year: President, Sir Thomas G. Shaughnessy; Vice President, D. McNicoll; other directors, T. Skinner, I. G. Ogden; Secretary, H. Campbell Oswald.

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The Board of Railway Commissioners has approved the G.T.P.R. standard freight mileage tariff between Prince Rupert and Vanarsdol, B.C., effective Oct. 10.

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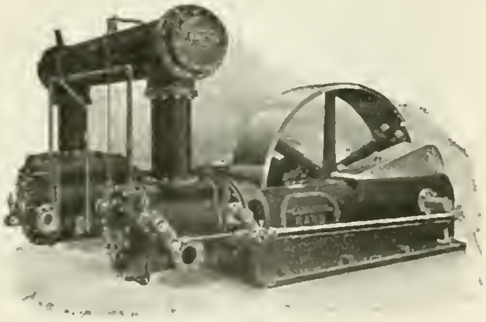

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National Transcontinental Railway Construction, Etc.

Tenders will be received by the Commissioners to Nov. 8, for the construction and erection complete of two 150 h.p. horizontal return tubular boilers and boiler room equipment in the engine houses at Napadogan, and Edmundston, N.B., and three similar boilers at Cochrane, Ont.

We are officially advised that the contract for the building of the terminal station at Quebec has been let to Jos. Gosselin, Levis, Que. The ex-Minister of Railways stated Oct. 2, that the contract had been awarded to the lowest tenderer for $145,015. A description and plans of the building were given in our Sept. issue.

The new Minister of Railways, Hon. F. Cochrane, issued an order Oct. 16, directing that contractors engaged on contracts in connection with the railway entered into since the dissolution of Parliament, are to cease work. The reason for this order is that there is no money on hand to pay progress estimates, on these works, the necessary supplies not having been voted prior to dissolution. The order does not affect work being done on contracts entered into prior to dissolution, for which supplies had been voted. As a result of a further consideration of the matter the contractors are allowed to proceed with foundations on station and other buildings. This permission does not extend to the contractor for the terminal station at Quebec.

It was recently reported in Fort William, that track had been laid easterly for about 100 miles from Superior Jct., Ont., and it was expected that the steel laying gang would reach Lake Nipigon by the end of the year. (Oct., pg. 941.)

The shops at Transcona, Man., it is reported, will be completed in about six weeks, and the repair of locomotives, etc., will be started with the new yea..

F. J. McIntosh, Assistant District Engineer, St. Boniface, Man., stated Oct. 12 that there was no truth in the reports that the piers of the bridge over the Seine River were sinking because of the weakness of the foundations. The two piers and abutments were completed during the summer and the steel work is practically completed. There has, he says, been absolutely no movement of the bridge since the concrete was placed.

A later dispatch states that the foundation for the report as to the state of the bridge, lies in the fact that one of the approaches was built over a sewer at Archibald St., which caved in, and caused a crack in the west wing wall.

Grand Trunk Pacific Railway Construction, Etc.

The excavation for the foundations of the company's hotel at Winnipeg, is being rushed forward, and it is expected to have it completed by Dec. 1. The general contractors, Geo. A. Fuller Co., Ltd., sublet this part of the work to Rigby and Kellett, Winnipeg. The permit issued by the city of Winnipeg puts the cost of the building at $1,300,000.

The Board of Railway Commissioners has approved the location of a branch line in Saskatchewan from the east line of sec. 9, tp. 33, r. 11, to the south line of sec. 11, tp. 31, r. 25, w. 3rd m. mileage 50.23 to 77.13.

Reports state that in addition to the completion of the branch from Melville into Regina, Sask., work has been done to Sept. 30, as follows:— Grading 95% completed on the 130 mile branch from Regina to the International boundary; grading has been completed for 30 miles on the branch from Regina to Moose Jaw, Sask; 50% of the grading has been completed on the 48 mile branch from Moose Jaw northwesterly; grading has been completed on 86 miles and track laid for 67 miles on the branch from Young to Prince Albert; 70% of the grading has been completed on the Battleford branch; 50 miles of grading on the branch from Biggar towards Calgary has been completed and the remaining 52 miles is under contract; the grading on the Vegreville-Calgary branch is 75% completed beyond the point to which track was laid in 1910, and tracklaying is in progress; 60% of the grading has been completed and six miles of track laid on the Alberta coal branch.

Local reports state that a large block of property between Namayo and Kinistino streets, Edmonton, Alta., has been bought by the G.T.P. Ry. upon which it is intended to erect freight sheds. The owners of some portions of the property have received notice to vacate it at once. The question of the construction of subways on Namayo and other streets in the vicinity, for which the Board of Railway Commissioners has issued orders, is being reconsidered by the city council in connection with the project.

We are advised that the shop to be built at Edson, will be a small one, 130 by 50 ft.

Tenders have been asked for the excavation and grading necessary for the station, and roundhouse sites, the clearing of the yards, etc., at Prince Rupert, B.C. (Oct., pg. 941.)

A. W. Smithers, Chairman of the Board, G.T.R., on returning to Montreal, after having been over the entire system, said the G.T.P. Ry. was running trains over 1,800 miles of line, the financing had been completed for the building of the line through to the Pacific coast; contracts for all the work had been let and it was expected to have the work done by the fall of 1914. The line had been opened for traffic from Prince Rupert to Haslemere, B.C., 100 miles, and the grading had been completed to Aldermere, 245 miles from Prince Rupert. The contract for grading the line between Aldermere and Tete Jaune Cache, had been let to Foley, Welch and Stewart, and work was already in progress from both ends.

Considerable information as to the progress of construction is given in the report presented at the company's recent annual meeting, which appears on another page.

Railway Finance, Meetings, Etc.

Alberta Ry. and Irrigation Co.—Notice has been issued that the company will, on Jan. 1, 1912, pay off and redeem its 5% debenture stock, outstanding on that date. The transfer books relating to this stock will be finally closed Dec. 4, and as soon as possible afterwards a notice will be sent to each stockholder regarding the steps to be taken for paying off the stock. Interest will cease to accrue on and from Jan. 1, 1912.

The annual meeting of shareholders will be held at the C.P.R. offices, Montreal, Nov. 1, In addition to ordinary business it is proposed to submit a bylaw reducing the number of directors to five.

Application is being made for the ratification by the Governor General of an agreement leasing this railway to the C.P.R. for 99 years from Jan. 1, 1912.

Brockville, Westport and Northwestern Ry.—An order has been made in the action against this company by the trustee for the bondholders directing the sale of the property by auction at Osgoode Hall, Toronto, on Dec. 14. The property will be offered in one lot and will consist of 45 miles of railway from Brockville to Westport, Ont., with all its property, rights, powers and franchises. A reserve price has been placed on the property.

Canadian Northern Alberta Ry.—There has been deposited with the Secretary of State at Ottawa, a trust mortgage dated Mar. 22, securing the company's 3½% 50-year debenture stock, guaranteed by the Dominion to the amount of £647,260. 5s. 6d., upon certain lines of railway in Alberta.

Canadian Northern Ontario Ry.—There was deposited with the Secretary of State at Ottawa, Oct. 4., a trust deed securing an issue of 3½% 50-year debenture stock of the company to the amount of £7,493,835 12s. 4d., guaranteed by the Dominion upon the line now under construction between Ottawa and Port Arthur, Ont.

The Canadian Pacific Ry. Co. is applying to the Dominion Parliament for power to acquire the debenture and other stock of railway companies the principal and interest of which has been guaranteed by the C.P.R., in the same way that it can now acquire mortgage bonds, by the issue of C.P.R. 4% debenture stock.

Central Ry. of Canada.—The final instalment of 20%, of the recent issue of £600,000 5% bonds is due and payable in London, Eng., Nov. 1.

Dominion Atlantic Ry.—Gross earnings for Aug., $173,200, against $160,676 for Aug. 1910. Aggregate for two months, ended Aug. 31, $333,800 against $309,108 for same period 1910.

Quebec Central Ry.—Gross earnings for Aug., $138,995.80; expenses, $82,444.96; net earnings $56,550.84, against $132,376.89 gross earnings; $78,477.06 expenses; $53,899.83 net earnings for Aug. 1910. Aggregate gross earnings for two months ended Aug. 31, $264,102.27; expenses $163,697.80; net earnings $100,404.47, against $256,324.26 aggregate gross earnings; $159,069.27 expenses; $97,254.99 net earnings for same period, 1910.

Cables from London, Eng., state that at the annual meeting of shareholders held Oct. 18, the accounts showed a surplus of $160,415, out of which a dividend of 3% was declared. The report referred to the provisional arrangement which had been entered into for leasing the line to the C.P.R. for 999 years. Some shareholders disapproved of the proposed lease, but the report was adopted. The formal meetings to ratify the lease will be held at some future date.

Temiscouata Ry.—Profit on operation for July, $6,372, against $4,646 for July, 1910. Aggregate profit for seven months ended July 31, $27,546, against $26,474 for same period, 1910.

Temiskaming and Northern Ontario Ry.—Gross earnings for Aug., $190,329.33; expenses $122,585.46; net earnings, $67,743.87; ore royalties $3,779.68; net income $71,527.55; less hire of equipment $4,223.74; net result $67,299.81.

St. Mary's and Western Ontario Ry.—A meeting of the representatives of the municipalities holding second mortgage bonds was held at Embro, Ont., Oct. 12, at which it was decided to decline the recent offer of the C.P.R. to give 25% of the face value of the bonds for the release of the mortgage. It was further decided to submit an offer to the company.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—Following are the directors and officers for the current year elected at the annual meeting in Vancouver, Oct. 11: President, L. W. Hill, St. Paul, Minn.; other directors: W. H. Barker, E. E. Evans, F. J. Bayfield, K. J. Burns, Vancouver; Judge Brown, Seattle, Wash. K. J. Burns is General Agent of the Great Northern Ry. in Vancouver.

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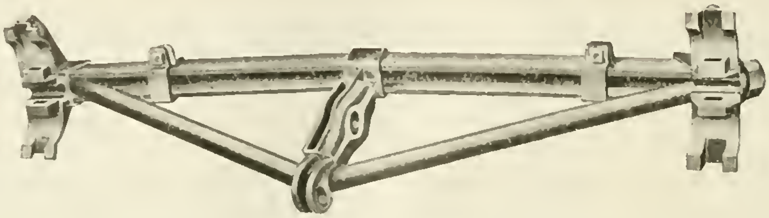

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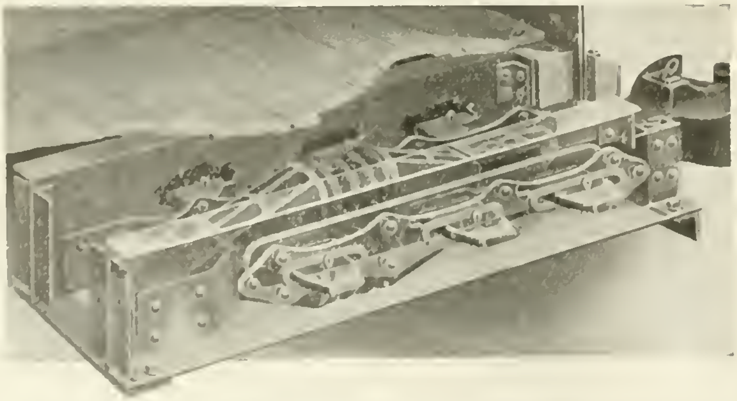

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Canadian Pacific Railway Construction, Betterments, Etc.

St. John, N.B., to Digby, N.S.—Local reports state that the question of the operation of a car ferry for freight between the C.P.R. at St. John, N.B., and the Dominion Atlantic Ry. at Digby, N.S., is under consideration.

Second Track Reports.—A press report states that arrangements are being made to build a second track from Adirondack Jct., via St. Johns to Farnham, Que.

Windsor St. Station.—It was stated, Oct. 18, that the office section of the extension to the Windsor St. station will be ready for occupation in May, 1912, and that the remainder of the building will be ready for occupation about a month later. There is a 20 ft. space between the present building and the addition, which will not be connected up until the offices in the south of the present structure are removed.

Place Viger Improvements.—The viaduct along Notre Dame St., over the C.P.R. yards at Place Viger, which has been under construction for the past two years, was opened for traffic Oct. 17. It extends from Berri St. to Montcalm St., 1,200 ft. On the surface a double track electric car line has been laid, with ample room for vehicular and pedestrian traffic, while underneath is the company's bonded warehouse. Considerable progress has been made with the work of laying out the new yards. The inbound and outbound sheds are situated between the viaduct and the river. They are 1,000 and 1,200 ft. long respectively and they are separated by a 1,000 ft. covered transfer platform. All three sheds are of concrete and steel construction and are equipped with fire walls, sliding doors and all the latest weighing appliances. The total capacity of the freight tracks is about 900 cars. For the outward bound shed there are four tracks, with a capacity of 122 cars. For the inward bound shed there are three tracks, with a capacity of 75 cars, and for the bonded shed there are two tracks. The storage and teamway tracks have a capacity of about 600 cars.

Second Track Ste. Therese-Quebec Jct.—The second track work being done at Montreal at present extends from Ste. Therese to Quebec Jct., 7.22 miles. It is expected to have the grading completed this fall, but the finishing of the work and the building of the second track on the bridge at Ste. Rose, will not likely be gone on with before next year.

Smith's Falls-Glen Tay Second Track. The second track work between Smith's Falls and Glen Tay, Ont., has been practically completed and is being ballasted.

Georgian Bay and Seaboard Ry.—The Board of Railway Commissioners has authorized the company to connect the tracks of this line at mileage 88 from Victoria Harbor with the line between Montreal and Toronto at mileage 38.57 from Havelock, Ont. The contract for the erection of stations, freight sheds, water tanks, etc., along the line is reported to have been let to G. T. Martin, of Smiths Falls, Ont.

The last rail on this line was laid Oct. 18, and the ballasting is being pushed as fast as possible. It is expected that it will be ready for traffic by the end of the year. The line is in operation from Coldwater Jct., on the Toronto-Sudbury line to Victoria Harbor, where large terminal facilities are under construction. The extension easterly from Coldwater Jct., 88 miles, joins the Montreal-Toronto line near Bethany Siding, Ont. The Toronto Construction Co. had the contract.

The C.P.R. has given a contract to John S. Metcalf Co., Ltd., Montreal, for 700 ft. of cribbed wharf with reinforced concrete superstructure at Victoria Harbor, Ont., in addition to the 6,500 ft. of wharf already built and under construction by the Metcalf Co., at Victoria Harbor.

South Ontario Pacific Ry.—The Board of Railway Commissioners is being asked to recommend the Dominion Government to sanction a lease of the line now under construction from Guelph Jct. to Hamilton, Ont., to the C.P.R. for 99 years from Jan. 1, 1912. The board has approved plans for the building of bridges at mileage 12.46 in West Flamboro tp., and over the G.T.R., near Hamilton.

The Dominion Parliament is being asked to extend the time within which the line, now under construction, may be built, and to authorize the company to enter into an agreement with the C.P.R. for any purpose specified in sec. 361 of the Railway Act.

Entrance to Stratford, Ont.—J. W. Leonard, Assistant to the Vice President, met members of the city council and of the board of trade, Oct. 10, to discuss the plans for the route of the company's projected line through the city. Several suggestions were made, and Mr. Leonard promised to have them looked into by an engineer. The company desires to have a route through the city along the river, but this is being opposed by the citizens on the ground that it would destroy the park, etc.

London Station.—Work was started on the new station on Quebec St., London, Ont., Oct. 1, and it is expected that it will be completed by the end of the year. The station building will have a total length of 121 ft., the main building being 65 ft. long and a story and a half high, while the single story sheds at each end will be 28 ft. long. The main waiting room, in the east end of the building, will be 26 by 17 ft. deep, and adjoining it will be ladies' rooms with lavatory accommodation.. In the other parts of the building there will be offices for the agent, rooms for the operators, caretakers, etc., and the baggage and express rooms will be in the sheds at the ends. Upstairs will be offices for the district superintendent, etc. The building, which will cost about $10,000, is being built by the company's staff.

Branch at Byng Inlet.—The Board of Railway Commissioners has authorized the building of a branch line and a Y at Byng Inlet, Ont., on the Toronto-Sudbury line.

Northern Colonization Ry.—The Dominion Parliament is being asked to extend the time within which the extension of the railway to a junction with the Ottawa and North Western Ry. at Maniwaki, Que., may be built.

Ottawa and North Western Ry.—The Dominion Parliament is being asked to extend the time within which the lines authorized to be built by the company's acts of 1899 and 1900, may be built.

Campbellford, Lake Ontario and Western Ry.—Press reports state that a choice will be made at an early date from among the routes surveyed, for the projected line from between Blairton and Ivanhoe to between Locust Hill and Leaside Jct., on the existing line between Montreal and Toronto, the new line being projected to serve the lake front towns as far as possible.

West Ontario Pacific Ry.—The Dominion Parliament is being asked to extend the time within which the line authorized by the acts of 1906 may be built.

Subway at Fort William.—Tenders were received to Oct. 16 for the construction of a subway at Syndicate Ave., Fort William, Ont.

Winnipeg-Brandon Second Track.—The second track work into Brandon, Man., has been completed, and the first passenger trains were operated over it to and from Winnipeg, Oct. 10.

Shops at Neepawa.—We are officially advised that it is not the intention to erect new shops and a roundhouse at Neepawa, Man., as reported in daily papers.

Shops at Weyburn.—We are officially advised that it is not the intention to erect locomotive and car repairing shops at Weyburn, Sask., as reported in daily papers.

Regina to Bulyea.—The new line connecting Regina and Bulyea, Sask., is expected to be opened for traffic early in Nov.

Manitoba and North Western Ry.—Application is being made to the Dominion Parliament to authorize the building of a line from Harrowby, southeasterly and southerly to near Hamiota, Man., and to extend the line for the building of lines from Churchbridge to Cutarm Creek, Sask.; from Theodore to a junction with the Russel branch in tp. 20 or 21, range 28, west of the 3rd meridian, Sask. and Man.; from Butte to Hamiota, Man.; and from Russell to the mouth of Shoal River on Lake Winnepegosis, Man.

Calgary Shops.—The Calgary city council approved an agreement with the C.P.R. in connection with the location of the proposed new shops there, at a meeting held Oct. 14. The agreement provides that the company shall have free use of the city sewers and shall give a site for disposal works; water rates for the shops to be the same as for other industrial concerns; the street railway to be extended to the shops; operation to be started on the building of shops within 30 days after the ratification of the agreement; the city to maintain certain grade crossings, and to sell electric power upon terms to be arranged between engineers representing the company and the city. These terms were arranged after a discussion of the matter with F. W. Peters, Assistant to the Vice President, Oct. 13. There are some small points of difference between what the company asked and what the city is prepared to grant, but it is expected that these will be settled, in time to permit the bylaw to be submitted at the next municipal elections.

Lacombe Easterly.—The Board of Railway Commissioners has authorized the opening for traffic of the Lacombe branch, of the Calgary and Edmonton Ry., from Castor to Coronation, Alta., 25 miles.

Strathcona-Edmonton High Level bridge.—The concrete substructure of the high level bridge over the Saskatchewan River, on the new line to connect Strathcona with Edmonton, Alt., is reported to have been completed. The erection of the steel work is expected to be comenced early in Nov. Track has been laid from Strathcona to the bridge to facilitate the work of getting in the steel superstructure.

Western Lines.—Application is being made to the Dominion Parliament to authorize the building of the following branch lines; from range 10, 11 or 12, on the Estevan-Forward branch to a junction with the Weyburn-Lethbridge branch in range 24, 25 or 26, west of the 2nd meridian, Sask.; from near Sedgewick southerly to a junction with the Lacombe branch in tp. 35, 36 or 37, range 10, 11 or 12, west 4th meridian, Alta.; from north of the Battle River on the last mentioned line northwesterly to a junction with the Wetaskiwin branch in ranges 17, 18 or 19, west 4th meridian, Alta. An extension of time for the building of the following lines is also asked: from Osborne to a point between Cartwright and Boissevain, Man.; from Otterbourne to Stuartburn, Man.; from the Icelandic River northwesterly for 100 miles in Manitoba; from Killam to Strathcona, Alta.

Rocky Mountain Water Powers.—A recent press report stated that the water power of the Adams River, which flows into the South Thompson River, near the west end of Shuswap Lake, had been secured in the name of J. S. Dennis, Manager Irrigation and Land Interests in Alberta and British Columbia, and that the purchase had been made with the view of preparing for the operation of certain of the C.P.R. lines in the vicinity, by electricity. Mr. Dennis wrote us on Oct. 21, that as far as he knew the company had not taken any steps to acquire a water power at that point.

Coquitlam Yards, Etc.—Local press reports state that arrangements are being made for clearing the land acquired at Coquitlam, B.C., for yard and other purposes.

Vancouver Station.—We are officially advised that it is not likely the plans for the proposed new station building at Vancouver, B.C., will be ready for some little time.

Esquimalt and Nanaimo Ry.—It is expected that the extension to Alberni, will be opened for traffic early in Nov. The grading of the extension to Cowichan is going ahead rapidly, and the steel for laying the first 25 miles has been delivered.

Application is being made to the Dominion Parliament for an extension of time for the building of certain lines authorized by the company's acts of 1884 and 1906. (Oct., pg. 945.)

Investigation of Fire Precautions in British Columbia.

The Board of Railway Commissioners recently issued an order providing for the investigation of fire appliances with which locomotives of railway companies subject to the Board's jurisdiction and operating in British Columbia, are equipped, and also the condition of the companies' right of way, as to whether it is free from dead grass, weeds and other combustible matter. By arrangement with the Forestry Branch of the Interior Department, the services of fire wardens, already engaged in fire preventive work, will be utilized. The instructions relative to the order have been given by the Board's operating officers and report of the investigations will be made to them. The following fire wardens have been detailed for the work: Supervisors of Fire Wardens, W. H. McGregor, Nelson, and W. C. Gladwin, Vancouver; Assistant Supervisor of Fire Wardens, W. F. Loveland, Nelson; Division Fire Wardens, G. B. Watson, Cranbrook, R. J. Long, Nelson, W. A. Wilmot, Fernie, M. V. Allen, Vernon, F. D. Markland, Victoria, J. K. McLean, Revelstoke, and W. H. Smith, Vancouver; Fire Wardens, R. E. Allen, New Denver, and G. A. Kerr, Kitselas.

H. H. Vaughan, Assistant to the Vice President, C.P.R., Montreal, accompanied by Mrs. Vaughan, sailed from Quebec, on the s.s. Empress of Ireland, for England, for a holiday, intending to be absent about five weeks.

W. S. Painter, who has resigned as Chief Architect, C.P.R., is reported to have entered into partnership with F. H. Swales, a London architect, with offices at Montreal and Vancouver, B.C. It is said that Mr. Painter will be retained by the C.P.R. in a consulting capacity, especially in regard to western work.

Railway Rolling Stock Notes.

The Canadian Northern Ry. has ordered six snow ploughs from the Canadian Car and Foundry Co., Montreal.

The Intercolonial Ry. has added two vans to its rolling stock, since Sept. 18, both having been built in its Moncton shops.

The Temiskaming and Northern Ontario Ry. has received three parlor-cafe cars, named Sesekinika, Tetepaga and Wasaksima, from the Canadian Car and Foundry Co., Montreal.

The Grand Trunk Ry. has ordered 25 first class cars and 25 baggage-express cars from the American Car and Foundry Co., and 25 first class cars and 25 baggage-express cars from the Pullman Co., for delivery towards the end of the year.

The C.P.R., between Sept. 13 and Oct. 13, placed orders at its Angus shops, Montreal, for the following rolling stock,—90 box cars, 15 stock cars, three vans, two refrigerator cars, freight, 31 colonist cars, 30 baggage and express cars, 25 suburban cars, 15 first class cars, and 15 first class and smoking cars.

The Canadian Northern Ry., between Sept. 15 and Oct. 15, ordered one dining car and six snow ploughs from the Canadian Car and Foundry Co., Montreal, and two passenger and mail cars and three second class passenger and baggage cars from the Preston Car and Coach Co., Preston, Ont.

In our July issue it was stated that the G.T.R. had ordered 1,000, 36-ft. steel under frame box cars from the Canadian Car and Foundry Co., Montreal, and in September we received a communication from a G.T.R. official about a similar 1,000 cars, mentioned as having been ordered from the Canadian Car and Foundry Co. This latter information was taken as referring to an additional order, and was so treated in our October issue. Enquiry has shown that only one order has been placed.

The Canadian Northern Ry., between Sept 15 and Oct. 15, ordered the following rolling stock,—1,500 box cars, 300 steel underframe flat cars and 15 first class cars, from the Canadian Car and Foundry Co., Montreal; 400 Hart convertible cars, from the Hart-Otis Car Co., Montreal; 200 flat cars, 300 box cars, 12 baggage cars, 12 baggage and mail cars and 20 cabooses from the Crossen Car Manufacturing Co., Cobourg, Ont.; 1,000 box cars from the Nova Scotia Car Works, Halifax, and 50 flat cars.

The Canadian Northern Ry. has ordered 1,500 box cars from the Canadian Car and Foundry Co., Montreal:—

Length inside body	33 ft. 10¾ ins.
Width inside body	8 ft. 6⅛ ins.
Height top of floor to bottom of carlin	8 ft.
Length over end sills	36 ft. 9¾ ins.
Width over side sills	9 ft. 0¾ in.
Width at eaves	9 ft. 7⅜ ins.
Height over sill	14 ft.
Truck centres	26 ft. 9¾ ins.
Door opening	7½ by 6 ft.
Bolsters and brake beams	Simplex
Draft springs	M.C.B. 6¼ by 8 ins.
Air brakes	Westinghouse K C. 812
Trucks	Arch bar type
Journal boxes	M.C.B. cast iron
Axles	Steel
Wheels	Cast iron, 33 ins.
Brake shoes	Steel back

O'Brien, McDougall and O'Gorman, railway contractors, have ordered 15 Hart convertible cars, from the Hart-Otis Car Co., Montreal. Following are the chief details:—

Capacity	80,000 lbs.
Width over side sills	8ft. 10 ins.
Length inside, as hopper	20 ft. 10 ins
Length inside, as goodola	84 ft. 8 ins
Width, inside	8 ft. 8 ins
Width overall	10 ft 2½ ins
Width at top	9 ft. 10 ins.
Height from rail to top of floor	4 ft. 4¼ ins.
Height from rail to top of car	8 ft. 1⅜ ins.
Height inside	3 ft. 9¼ ins.
Truck centres	26 ft. 8 ins.
Wheel base of truck	5 ft. 4 ins.
Length of hopper door opening	16 ft. 8½ ins
Width of hopper door opening	2 ft. 9 in.

The C.P.R., between Sept. 13 and Oct. 13, received the following additions to rolling stock,—445 wooden box cars, 45 vans, two baggage and smoking cars, three second-class cars, one baggage and express car, four compartment sleeping cars, seven switching locomotives, and four D.10 locomotives from its Angus shops, Montreal; 15 D.10 locomotives and three N.3 locomotives from the Montreal Locomotive Works; seven N.3 locomotives from the Canadian Locomotive Co., Kingston, Ont.; 571 steel frame box cars from the Canadian Car and Foundry Co., Montreal, and 695 steel frame box cars and 343 steel coal cars from the United States.

The Edwardsburg Starch Co., Cardinal, Ont., has ordered one four-wheel saddle tank switching locomotive from the Montreal Locomotive Works. Following are the chief details:—

Cylinders	13 by 18 ins.
Driving wheels, diar.	36 ins.
Boiler, diar.	46 11-16 ins.
Boiler, pressure	165 lbs.
Firebox	47½ by 36⅛ ins.
Tubes, no. and diar.	100; 2 ins.
Tubes, length	10 ft.
Heating surface, tubes	524 sq. ft.
Heating surface, firebox	53 sq. ft.
Heating surface, total	577 sq. ft.
Grate area	11.9 sq. ft.
Weight in working order	56,000 lbs.
Maximum tractive power	11.851 lbs.
Capacity, coal	900 lbs
Capacity, water	1,000 galls.
Wheel base	6 ft. 3 ins.

Following are chief particulars of the four dining cars which the Canadian Northern Ry. is having built by the Canadian Car and Foundry Co., Montreal:—

Length over end sills	72 ft. 6 ins.
Length over buffers	80 ft. 6¼ ins.
Width over side sills	9 ft. 10½ ins.
Width over sill at eaves	10 ft. 2¾ ins.
Width between deck sills	5 ft. 6 ins.
Height, top of sill to bottom of plate,	6 ft. 8½ ins.
Height over roof board	14 ft. 2⅜ ins.
Body holsters	Cast steel double
Vestibules	Pullman wide, type C
Platforms	Standard Steel Co. type A3
Heating	Gold combination steam and hot water
Air brakes	Westinghouse L.N. 1812
Trucks	C.N.R. standard 6-wheel, 80,000 lbs. capacity wood passenger trucks
Wheels	Steel tired, 36 ins.
Axles	M.C.B. 5 by 9 ins.

P. Lyall and Sons, Montreal have ordered one four wheeled saddle tank locomotive from the Montreal Locomotive Works. Following are the chief details:

Weight	56,000 lbs
Wheel base	6 ft. by 3 ins.
Cylinder, diar. and stroke	13 by 18 ins.
Wheels, diar.	36 ins.
Boiler, type	Straight top.
Boiler, pressure	165 lbs.
Boiler, diar, at front end	41-11-16 ins.
Firebox	47-11-16 by 36⅝ ins.
Tubes, no. and diar.	100-2 ins.
Tubes, length	10 ft.
Heating surface, tubes	524 sq. ft.
Heating surface, firebox	53 sq. ft.
Heating surface, total	577 sq. ft.
Grate area	11.9 sq. ft.
Tank capacity	1,000 galls.
Maximum tractive power	11,850 lbs.

The Reid Newfoundland Co., which is building at its St. John's shops, a number of locomotives, details of which we gave in our last issue, is also building three sleeping cars, 49 ft. long, 8½ ft. wide, 6 ft. 4½ ins. wall, with steel platforms, with eight sections and drawing room; four first class day cars, 47 ft. long, 8½ ft. wide, 6 ft. 5½ ins. wall; six second class cars, same dimensions as the first class; two baggage cars, 52½ ft. long, 8½ ft. wide, 6 ft 5½ ins. wall; two dining cars, 41 ft. long, 8½ wide, 6 ft. 4½ ins. wall, to seat 18 passengers; 50 box cars, 30 ft. long, 8 ft. wide, 6 ft. 4 ins. wall, 40,000 lbs. capacity; two snow ploughs, all equipped with air brakes and Tower couplers.

Roger Miller and Son, Toronto, have ordered two four wheeled saddle tank locomotives from the Montreal Locomotive Works. Following are the chief details:

Weight, total	39,000 lbs.
Wheel base	4 ft. 9 ins.
Cylinder, diar. aud stroke	11 by 16 ins
Wheels, diar.	33 ins.
Journals	5 by 6 ins.
Boiler, type	Straight top.
Boiler, pressure	165 lbs.
Boiler, diar. at frout end	35⅝ ins
Firebox	40½ by 33 ins.
Tubes, no. and diar.	85-2 ins.
Tubes, length	8 ft. 3½ ins.
Heating surface, tubes	367 sq. ft.
Heating surface, firebox	41 sq. ft.
Heating surface, total	408 sq. ft.
Grate area	9.3 sq. ft.
Tank capacity	750 galls.
Maximum tractive power	8,230 lbs.

The Canadian Northern Ry., between Sept. 15 and Oct. 15, received the following additions to rolling stock,—28 flat cars, 136 box cars, two first class cars and three baggage cars, from the Canadian Car and Foundry Co., Montreal; 47 refrigerator cars and six cabooses from the Crossen Car Manufacturing Co., Cobourg, Ont.; two second class passenger and baggage cars from the Preston Car and Coach Co., Preston, Ont.; 195 box cars from the Nova Scotia Car Works, Halifax; five consolidation locomotives from the Baldwin Locomotive Works, Philadelphia, Pa., five ten wheel locomotives from the American Locomotive Co., and 150 flat cars for the Duluth, Winnipeg, and Pacific Ry.

The use of gas-electric motor cars on the Central Ontario Ry. between Trenton and Picton, Ont., is said to be under the consideration of officials of the Canadian Northern Ry., which now controls the C.O.R. The prime mover in these cars is a gas engine, the energy from which is transmitted to the driving wheels by an electric drive, thus avoiding any direct mechanical gearing. The engine is direct coupled to an electric generator forming a compact power plant. The electric motors under the car are standard railway motors. A number of these cars are in operation on the Buffalo, Rochester and Pittsburg Ry. and the Southern Ry., and some have been built recently for the St. Louis and San Francisco Rd.

The Toronto, Hamilton and Buffalo Ry. has ordered two consolidation locomotives, equipped with superheaters, from the Montreal Locomotive Works. Following are the chief details:—

Cylinders, diar and stroke	23 by 28 ins.
Driving wheels, diar.	55 ins.
Boiler, outside diar., at front end	64¼ ins
Boiler, pressure	180 lbs.
Firebox	96 by 75¼ ins.
Tubes, no. and diar.	202-2 ins; 28-5⅜ins.
Tubes, length	15 ft.
Heating surface, tubes	2162 sq. ft.
Heating surface, firebox	168 sq. ft.
Heating surface, total	2330 sq. ft.
Grate area	50.2 aq. ft.
Wheel base, driving	17 ft.
Wheel base, engine	57 ft. 3 ins.
Weight on leading truck	28,000 lbs.
Weight on driving wheels	175,000 lbs.
Weight, total	203,000 lbs.
Weight, tender	140,000 lbs.
Tractive power	41,200 lbs

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The Titanium Alloy Manufacturing Co. calls attention to statistics issued by the American Iron and Steel Association respecting the tonnage of steel treated with various alloys during 1910. Out of a total of 567,819 gross tons, 326,316 were treated with Titanium.

The Supreme Court gave judgment at Ottawa, Oct. 5, in the appeal against the Exchequer Court decision in E. A. Walberg's action for extras on the contract for building the new shops for the Intercolonial Ry. at Moncton, N.B. The court reduces the amount fixed by the Exchequer court to that named by the referee.

TRANSPORTATION APPOINTMENTS.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canadian Northern Ontario Ry.—J. W. Kelly has been appointed Car Foreman in charge of all work pertaining to the Car Department. Car inspectors will send all correspondence to him and work will be under his supervision. Office, Parry Sound, Ont.

Canadian Northern Quebec Ry., Quebec and Lake St. John Ry.—L. P. McGee has been appointed acting Bridge and Building Master, vice J. W. Phair, accidentally killed on the Q. & L. St. J. R., near Chambord Jct., Que., Oct. 11. Office, Joliette, Que.

Canadian Northern Ry.—J. D. Sinclair, heretofore Contracting Freight Agent, Toronto, has been appointed Travelling Freight Agent, Toronto, vice G. D. Lindsay, resigned.

I. L. Healy, heretofore in Freight Traffic Department, Toronto, has been appointed Contracting Freight Agent, Toronto, vice J. D. Sinclair, promoted.

H. R. Safford,
Chief Engineer, Grand Trunk Railway.

S. J. Lupton has been appointed General Foreman Boilermaker, with jurisdiction over boiler inspecting, testing and repair work generally at all points, vice P. Spence, Boiler Inspector, assigned to other duties. Office, Winnipeg.

P. Spence has been appointed Locomotive Foreman at Saskatoon, Sask., vice P. H. Neville, assigned to other duties.

Canadian Pacific Ry.—W. B. Brown, heretofore Trainmaster and Chief Dispatcher at St. John, N.B., has been appointed Assistant Superintendent, District 1, Atlantic Division, the dispatching office at St. John having been consolidated with that at Brownville Jct., Me., on the adoption of the telephone dispatching system on the division. Office, St. John, N.B.

A. W. Horsey, heretofore District Master Mechanic, District 1 and Montreal Terminals, Eastern Division, Farnham Que., has been appointed District Master Mechanic, District 1, Eastern Division. Office, Farnham, Que.

G. A. Balfour has been appointed Assistant to the General Superintendent, Eastern Division. Office, Montreal. This is to relieve F. P. Gutelius of much of the detail work, which has increased greatly on account of the larger volume of business now being done.

John Burns, heretofore District Master Mechanic, London, Ont., has been appointed Master Mechanic, Eastern Division, succeeding J. B. Elliott, who is retiring on well earned pension after faithfully serving the company from its formation. Office, Montreal.

H. A. Pepler has been appointed District Master Mechanic, District 2 and Montreal Terminals, Eastern Division. Office, Montreal.

W. S. Painter, Chief Architect, has resigned to carry on private practice.

J. M. Burke, heretofore District Master Mechanic, Districts 2 and 4, Eastern Division, Smiths Falls, Ont., has been appointed District Master Mechanic, District 4, Eastern Division. Office, Ottawa, Ont.

M. G. Murphy, heretofore General Travelling Passenger Agent, Montreal, has been appointed District Passenger Agent, Toronto, vice R. L. Thompson, resigned. Office, 16 King St. East.

A. J. Downing, heretofore chief clerk to agent, has been appointed city ticket agent, C.P.R., and agent Dominion Ex. Co., Woodstock, Ont., vice G. A. Joyce, resigned.

R. T. Moran has been appointed Chief Dispatcher at Sudbury, Ont., vice J. O'Meara.

F. Nowell, heretofore Locomotive Foreman at Ottawa, has been appointed District Master Mechanic, District 2, Lake Superior Division, vice J. A. Carroll, resigned to enter other service. Office, White River, Ont.

E. T. Wright has been appointed Storekeeper at Schreiber, Ont.

George Bury, heretofore General Manager, Western Lines, has been appointed Vice President and General Manager Western Lines, vice Sir William Whyte, Vice President, who has retired from active service. Office, Winnipeg.

Grant Hall, heretofore Superintendent of Motive Power and Car Department Western Lines, has been appointed Assistant General Manager, Western Lines in charge of matters pertaining to operation and maintenance. Office, Winnipeg, Man.

J. G. Sullivan, heretofore Assistant Chief Engineer, Western Lines, has been appointed Chief Engineer, Western Lines. Office, Winnipeg. The position of Assistant Chief Engineer has been abolished.

C. H. Temple, heretofore Assistant Superintendent of Motive Power, Western Lines, has been appointed Superintendent of Motive Power, vice Grant Hall, promoted. Office, Winnipeg.

C. A. Davis has been appointed Locomotive Foreman at Rogers Pass, B.C. vice G. R. Steeves, assigned to other duties.

G. Donley has been appointed Assistant Foreman of Repair Track at Vancouver, B.C.

W. Woodhouse has been appointed Assistant Coach Yard Foreman at Vancouver, B.C. This is a new position.

Capt. C. D. Neroutses, heretofore in command of the C.P.R. s.s. Princess Royal, has been appointed Marine Superintendent, B.C. Coast Steamship Service. Office, Victoria, B.C.

A. L. Sauve has been appointed City Passenger Agent, Detroit, Mich., succeeding G. G. McKay, transferred to Chicago as City Passenger Agent.

Central Vermont Ry.—See Grand Trunk Ry. for particulars respecting the President of the C.V.R., etc.

J. E. Dalrymple, Vice President, G.T.R., and Fourth Vice President, G.T.

P.R., has also been appointed Vice President, C.V.R., in charge of traffic. Office, Montreal.

Grand Trunk Pacific Ry.—J. E. Dalrymple, heretofore Assistant Freight Traffic Manager, Winnipeg, has been appointed Fourth Vice President, in charge of Traffic. Office, Montreal.

D. E. Galloway, heretofore private secretary to the President, G.T.R. and G.T.P.R., has been appointed Assistant to the President, G.T.R. and G.T.P.R., vice R. S. Logan, appointed Vice President, G.T.R. Office, Montreal.

In our October issue mention was made of a report that J. H. Hanna, at one time Division Freight Agent, G.T.R., Hamilton, Ont., had been appointed City Passenger Agent, G.T.P.R., Calgary, Alta. We are advised that the report is incorrect.

The following agents have been appointed: Pope, Man., F. J. Brande; Rea, Man., A. G. Ridford; Atwater, Sask., N. Fizer; Bangor, Sask., R. W. Esty; Birmingham, Sask., C. A. Swan; Ituna, Sask., H. S. McClelland; Balcarres, Sask., C McMahon; Hinton, Alta., F. R. Harrison.

Grand Trunk Ry.—In order to relieve the President of the more important detail work, which has heretofore been largely centralized, the directors have approved the reorganization of the executive staff of the G.T.R. and affiliated companies.

E. H. Fitzhugh, heretofore First Vice President, G.T.R., having been elected President Central Vermont Ry., Central Vermont Transportation Co., Southern New England Rd. Corporation, Southern New England Ry. and Montreal and Southern Counties Ry., has relinquished his duties in connection with his former position to devote his time to the affairs of the companies named. He will also perform such duties in connection with other G.T.R. subsidiary lines as may hereafter be assigned to him. Office, Montreal.

The practice of designating the several vice presidents by numbers has been discontinued.

W. Wainwright, heretofore Second Vice President, has been appointed Vice President. Office, Montreal.

M. M. Reynolds, heretofore Third Vice President, has been appointed Vice President, in charge of Financial and Accounting Departments. Office, Montreal.

H. G. Kelley, heretofore Chief Engineer, has been appointed Vice President, in charge of Construction, Transportation and Maintenance Departments. Office, Montreal.

J. E. Dalrymple, heretofore Assistant Freight Traffic Manager, G.T. Pacific Ry., Winnipeg, Man., has been appointed Vice President, G.T.R., in charge of Traffic. Office, Montreal.

R. S. Logan, heretofore Assistant to the President, G.T.R. and G.T.P.R., has been appointed Vice President, G.T.R., in charge of Land, Tax, Claims and Mail Departments. Office, Montreal.

D. E. Galloway, heretofore private secretary to the President, G.T.R., and G.T.P.R., has been appointed Assistant to the President, G.T.R. and G.T.P.R., vice R. S. Logan, appointed Vice President, G.T.R. Office, Montreal.

H R. Safford, M. Am. Soc. C.E., at one time Chief Engineer of Maintenance of Way, Illinois Central Rd., has been appointed Chief Engineer, G.T.R., vice H G Kelley, promoted. Office, Montreal.

J. W. Loud, Freight Traffic Manager, after 40 years continuous service with the G.T.R. and affiliated lines, has retired under the provisions of the Pension Fund. President Hays, in the circular announcing the retirement, said: "It is a pleasure to testify to the faithful and efficient manner in which he has discharged his duties in the various positions occupied.

John Pullen, Assistant Freight Traffic Manager, Montreal, has resigned on his appointment as President, Canadian Express Co., in succession to C. M. Hays, elected Chairman of the Board of Directors.

C. A. Hayes, heretofore General Freight Agent, Montreal, has been appointed Freight Traffic Manager, vice J. W. Loud, retired. Office, Montreal.

H. C. Martin, heretofore Second Assistant General Freight Agent, Chicago, Ill., has been appointed General Freight Agent, vice C. A. Hayes, promoted. Office, Montreal.

A. F. Read, heretofore Foreign Freight Agent, Montreal, has been appointed General Foreign Freight Agent. Office, Montreal. This is a new position.

F. J. Watson, heretofore Division Freight Agent, Montreal, has been appointed Assistant General Freight Agent. Office, Montreal.

G. T. Pettigrew, heretofore Division Freight Agent, Stratford, Ont., has been appointed Division Freight Agent, Montreal.

W. H. Tool, heretofore Inspector of Bridges and Buildings, Allandale, Ont., has been appointed Master of Bridges and Buildings, Northern Division, vice E. Brown, resigned. Office, Allandale, Ont.

R. J. S. Weatherston, heretofore chief clerk, Division Freight Agent's office, Hamilton, Ont., has been appointed Division Freight Agent, Stratford, Ont.

F. Dearing, heretofore Car Distributor at Stratford, Ont., has been appointed Car Distributor at London, Ont., vice E. R. Harwood, promoted.

E. R. Harwood, heretofore Car Distributor, London, Ont., has been appointed chief clerk to Master of Transportation, with entire charge of freight car distribution. Office, London, Ont.

J. E. Van Kauren has been appointed Car Distributor at Stratford, Ont., vice F. Dearing, transferred.

S. E. Dewey, heretofore Soliciting Freight Agent, New York City, has been appointed Commercial Agent, Pittsburgh, Pa., vice E. F. Flinn, promoted.

R. L. Burnap, heretofore Assistant General Freight Agent, Chicago, Ill., has been appointed Assistant Freight Traffic Manager, vice John Pullen, resigned on his appointment as President, Canadian Express Co. Office, Chicago, Ill. Mr. Pullen's office was at Montreal.

E. F. Flinn, heretofore Commercial Agent, Pittsburgh, Pa., has been appointed Division Freight Agent, Chicago, Ill.

S. L. Strauss, heretofore chief clerk, Tariff Department, Chicago, Ill., has been appointed Chief of Tariff Bureau. Office, Chicago, Ill.

James Waugh, heretofore Travelling Freight Agent, Philadelphia, Pa., has been appointed Commercial Agent, Omaha, Neb., vice A. Wallace, resigned.

The following agents have been appointed: Coteau Jct., Que., W. J. Ferguson, Noyan Jct., Que., F. X Landry, Kirkfield, Ont., E. M. Ellis; Concord, Ont., H. O. McLean; Severn, Ont., J. W. Wiggins; Milton, Ont., B. Sine; London East, Ont., R. E. Taylor; Brucefield Ont., E. A. Pattison; Pembroke, Ont., J. B Pilson, Edington, Ont., H. W. Lora.

Great Northern Ry.—R. J Smith, heretofore General Agent at Cincinnati, Ohio, has been appointed District Freight and Passenger Agent at Grand Forks, B.C., vice V. Kistler, transferred

W. R. Dale heretofore chief clerk to Assistant Traffic Manager, Seattle, Wash., has been appointed Agent at Victoria, B.C., vice E. R. Stephen, resigned to enter private business.

National Transcontinental Railway Commission.—R. W. Leonard, M. Can. Soc. C.E., of St. Catharines, Ont., has been appointed Chairman, N.T.R. Commission, vice S. N. Parent, resigned.

Temiscouata Ry.—G. G. Grundy, General Manager, has also been appointed Secretary, vice D. B. Lindsay, deceased. Office, Riviere du Loup, Que.

Temiskaming and Northern Ontario Ry.—S. H. Ryan, heretofore Chief Dispatcher, has been appointed Trainmaster. Office, North Bay, Ont.

J. J. Campbell, heretofore second trick dispatcher, has been appointed Chief Dispatcher, vice S. H. Ryan, promoted. Office, North Bay, Ont.

Toronto, Hamilton and Buffalo Ry.—W. T. Kuhn, heretofore Assistant Master Mechanic, Lake Erie and Western Ry., Lima, Ohio, has been appointed Master Mechanic, T.H. & B.R. Office, Hamilton, Ont.

White Star-Dominion Line.—J. W. Wilkinson and G. D. Lindsay have been appointed Travelling Freight Agents, for Ontario, to assist M. A. Overend, recently appointed Freight Agent to succeed the late G. W. Torrance. Office, 28 Wellington St. East, Toronto.

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Southern New England Ry.—Following are the directors of this company, a subsidiary of the Central Vermont Ry., which is controlled by the G.T.R.: E. H. Fitzhugh, H. G. Kelley, Montreal; G. C. Jones, C. W. Witters, St. Albans, Vt.; T. W. Kennefick, Palmer, Mass.; J. S. Murdoch, Providence, R. I.

Victoria Terminal Ry. and Ferry Co., Victoria and Sidney Ry.—Following are the officers and directors for the current year: President, A. H. MacNeill, Vancouver, B.C.; Vice President, F. V. Brown, Seattle, Wash.; Secretary-Treasurer, A. M. Thomas, Seattle, Wash.: other directors, F. Van Sant, Victoria, B.C. and John L. Snapp, Seattle, Wash.

Wabash Rd.—Following are the directors elected at the meeting of the stock and bondholders held in Toledo, Ohio, Oct. 10:—G. J. Gould, Jay Gould, H. Gould, F. A. Delano, E. T. Jeffrey, E. T. Welles, H. Bludgett, S. C. Reynolds, R. B. Clowry, T. H. Hubbard, J. J. Slocum, E B. Pryor, R. McCallaway. Frank Gould has been dropped from the board.

Toronto Union Station Plans.—The Board of Railway Commissioners, after a hearing extending over a couple of days directed, Oct. 14, that an order should be issued directing the preparation of new plans for the projected union station in Toronto. These plans are to be based upon a design submitted to the Board by the Toronto Board of Trade, which the commissioners and the C.P.R. favored in preference to the plans prepared by the G.T.R. The Chief Commissioner suggested that in the plans to be submitted 15 tracks be provided. Five through tracks and ten local tracks, or two sets of five tracks with the concourse between. The G.T.R. is given two weeks in which to prepare the amended plan.

P E. Ryan, father of P. E. Ryan, Secretary, National Transcontinental Railway Commission, died at Ottawa, recently, aged 76.

The Western Union Telegraph Co.'s agreement with the Newfoundland Government gives the company the right to land cables on the island on as favorable conditions as those granted for other cables, either now landed, or to be landed except as regards any special privileges now enjoyed by the Anglo-American Telegraph Co. It is also provided that the company shall not compete with government lines. The amount fixed for landing the cables is $4,000 a year for each cable, and the company shall not be charged for more than five cables.

ELECTRIC RAILWAYS

Canadian Street Railway Association

PRESIDENT, James Anderson, General Manager Sandwich, Windsor and Amherstburg Ry.; VICE PRESIDENT, P. Dubee, Secretary Montreal St. Ry.; SECRETARY-TREASURER, Acton Burrows, Managing Director Railway and Marine World.

ASSOCIATION'S OFFICE, 70 Bond St., Toronto.

EXECUTIVE COMMITTEE.—E. P. Coleman, Manager of Railways, Dominion Power and Transmission Co.; H. M. Hopper, General Manager, St. John Ry.; J. E. Hutcheson, Superintendent, Ottawa Electric Ry.; C. B. King, Manager, London St. Ry.; D. McDonald, General Manager, Montreal St. Ry.; M. N. Todd, President, Galt, Preston and Hespeler St. Ry.

ASSISTANT SECRETARY, Aubrey Acton Burrows, Secretary and Business Manager Railway and Marine World.

OFFICIAL ORGAN, THE RAILWAY AND MARINE WORLD.

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The Repainting of Electric Cars, its Frequency, Method and Cost.

In compliance with a request for information on this subject, we have obtained the following interesting and valuable facts from a number of electric railway companies:—

BRITISH COLUMBIA ELECTRIC RY.

Our cars are touched up and revarnished eight months after being painted. The car is then brought into the shop every 12 months, cleaned and revarnished until it has received four varnishings. After it has received the fourth varnishing it is brought in the barn after 12 months and repainted. This means that the car is repainted every four years and eight months, and is revarnished four times during that time. The average cost of painting the cars is about $40 and the cost of touching up and varnishing, inside and out, about $30.

CAPE BRETON ELECTRIC CO.

The work in our painting department divides itself into three classes, namely: touch up, cut in with color, and burning off and repainting jobs. The cars come into the shop in the interim between burning off and repainting jobs for touch up or a recoloring. The average car mileage between burning off and repainting jobs is 590,208. The car mileage between touching up and revarnishing jobs is 262,314. Cost of retouching and varnishing jobs, painting, stock, and labor is approximately $50. Touch up jobs include cleaning, touching up scratches, etc., with color, and revarnishing. Cut in with color jobs include cleaning, coloring the car all over, and revarnishing. Burning off and repainting jobs include all the necessary steps to practically repaint the car. We give below a summary of the different methods in detail.

BURNING OFF AND RE-PAINTING JOBS.

1. Burn off all the old paint. 2. Clean up the surface with sandpaper. 3. Apply a coat of lead, allow one day to dry. 4. Apply a coat of same lead. 5. Putty next day with putty. 6. Apply a coat of knifing lead, and when it has commenced to set, the surface is gone over with a broad putty knife to eliminate all brush marks and irregularities. 7. The surface is gone over with no. ½ sandpaper. 8. Apply a coat of color, tinted in the direction of body color, only a shade lighter. 9. The surface is gone over with fine sandpaper. 10. Apply a coat of body color thinned with turpentine only. 11. Apply a coat of finishing varnish colored with body color, about 2 oz. of color to 1 lb. of varnish, allow one day to dry. 12. Do all the necessary striping and lettering. 13. Apply one coat of exterior body varnish.

CUT IN WITH COLOR JOBS.—1. Remove one coat of varnish with ammonia. 2. Go over surface with fine sandpaper. 3. Apply a coat of body color thinned with turpentine and given an extra binder of exterior finishing varnish, about one gill of varnish to one pint of the thinned color. 4. Apply a coat of exterior finishing varnish colored with body color, 2 oz. of color to 1 lb. varnish. 5. Do all necessary striping and lettering. 6. Apply a coat of exterior finishing varnish.

TOUCH-UP JOBS.—1. Wash surface with soap and water in connection with powdered pumice, about 1 lb. soap to 3 gals. water. 2. Touch up scratches, etc., with color. 3. Apply a coat of exterior railway finishing varnish.

GALT, PRESTON & HESPELER STREET RAILWAY COMPANY.

We run our cars between 5,500 and 6,000 miles before putting in the shop for general repairs. We have no standard method, but what we do is to consider what is best for each particular car according to the length of time it can be held in the shop. The general practice to date has been to wash down, and light rub the old surface, touch up when necessary and in some cases, one complete coat of color, then two coats exterior varnish, and one coat inside, as well as painting of the roof, floors and trucks. We endeavor to have the car put in twice a year, once for a coat of varnish and the next time for painting. If the equipment is allowed out until it is in bad condition, lead and oil is certainly the best process.

HALIFAX ELECTRIC TRAMWAY CO.

Our cars make an average of 175,000 miles between painting. The method adopted in painting a car is to first burn off old paint to the wood, sand paper to a surface, then one coat primer followed by three coats surfacer, which is rubbed to a surface with pumice, etc. One coat color-ground, one coat color, striped and lettered, one coat varnish, rubbed, one coat finishing varnish. Cost of above about $100 a car. This is good for about eight years.

At or before the beginning of each season, other than the one in which the repainting is done, cars are washed, touched up and varnished one coat. Floors and roofs, one coat paint of their respective colors. This will cost about $25 a car.

HULL ELECTRIC COMPANY.

Our cars are painted every 2½ years and varnished every year. The old paint is rubbed down, but not burned off. Painting single truck cars costs $35 and double truck cars $70.

LEVIS COUNTY RAILWAY.

We do not keep a mileage record of the painting of cars. We varnish our cars every year and paint every three years. The average cost of varnishing is $25 a car. The average cost of painting and varnishing is $50 a car.

LONDON STREET RAILWAY.

Our mileage between painting of cars is from 50,000 to 60,000. The method of painting the car body, where painted above window rail, is to put on one priming coat of white lead and oil, three coats of white paint, each rubbed down, one coat of color varnish and two coats of finishing varnish. For painting the car body outside where finished in cherry, below window rail, we use one coat of boiled oil rubbed down, one coat of stain, one coat of shellac, one coat of rubbing varnish and two coats of finishing varnish. The car body inside is stained same as above and given one coat of finishing varnish. The floor gets two coats of lead paint and the roof two coats of roof paint. For our cars which are 31 ft. 7 ins. long over bumpers, with body 22 ft. 7 ins. long outside and 8 ft. wide outside, the height from roof to bottom of sill being 9¾ ft., with front vestibule closed, the average cost of material is $28.05 and labor $42.62, a total of $70.67.

OTTAWA ELECTRIC RAILWAY.

Average mileage between painting of cars, 37,000. Method, hand labor. Average cost per car per year, $70. Cars washed and varnished every year, painted every second year.

QUEBEC RY., LIGHT & POWER CO.

Average mileage between painting of cars, 85,140 miles. Method, burning off with blow torch and repainting. Average cost for painting cars, closed $50, open $45.

SANDWICH, WINDSOR & AMHERSTBURG RAILWAY.

We do not keep track of mileage between painting of cars, but whenever a car requires to be painted we have it done. The cost is from $60 to $125 a car, according to size.

TORONTO & YORK RADIAL RY.

We have not a fixed rule governing how often we paint. We have tried, as far as our business would permit, to paint every three years, with two coats of varnish during that time. Our method of painting is to clean off all paint and varnish and start with lead coat or size, and completely repaint, putting on six coats altogether, including color varnish and finishing varnish. Our average cost is $195 for painting, varnishing, etc., for our big cars complete.

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Grouse Mountain Scenic Incline Railway.

The object which the promoters of the company have in view in projecting the construction of a scenic railway to the summit of Grouse Mountain on the north shore of Vancouver harbor, B.C., is to add to the transportation conveniences provided for tourists and the public generally. The company has been incorporated by the B.C. Legislature, the provisional directorate consisting of W. J. McGuigan, L. C. Mills, W. H. May, W. J. Manson, W. H. R. Collister. The officials are: Consulting Engineers, Waddell and Harrington; Solicitor, T. O. Townley; Auditor, M. B. Cotsworth; Secretary, H. J. Cave.

The project consists first of an electric railway, extending across the canyon of the Capilano River, for about 8,000 ft., to the foot of the incline line; second, an incline railway of about 7,440 ft. long, operated by a steel cable and having a rise of 2,330 ft. in its length; and third, an electric railway of about 3,600 ft. long, skirting the crest of the mountain. The three lines will form a continuous route extending from the top of the mountain down across the canyon on the Capilano river, to a junction with a proposed extension of the B.C. Electric Ry. The line as located at the foot of the mountain, after crossing the Capilano river, will wind about in order to obtain the most satisfactory gradients, till it reaches a point where the rising gradient is too steep for satisfactory operation by the usual methods. The cable line will rise to the top of the mountain on gradients varying from 17 to 60%. The line on the top of the mountain will wind along the crest of the mountain on a roadbed very largely cut from solid rock and on fairly steep gradients.

The electric line will be of ordinary

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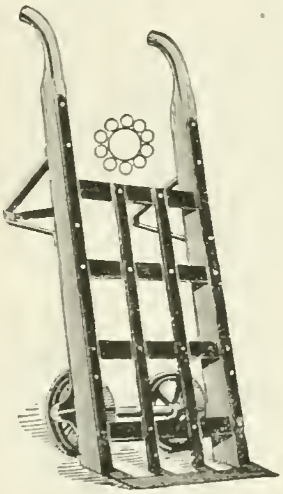

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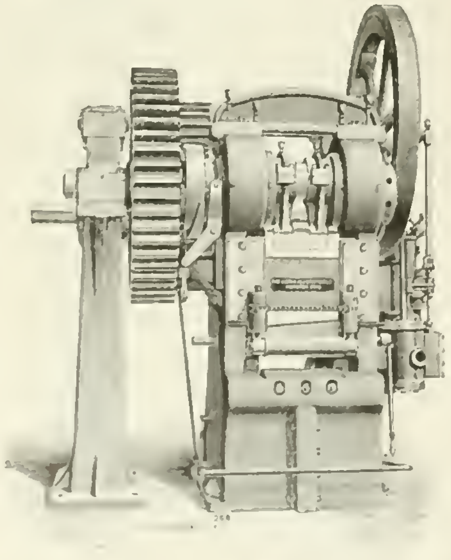

Gate Shear Steam-Driven

construction, necessitating some timber trustle work and a good deal of rock cutting. The Capilano canyon will be crossed by a steel bridge erected as a cantilever, because the depth of the canyon, 280 ft., prohibits the use of false work. The bridge will be built on concrete pedestals resting on the solid rock at the edges of the gorge. The line on the top of the mountain will follow the crest of a steep declivity and will be provided with a heavy guard rail on the outside of the track to prevent accident in case of derailment. The cable line as surveyed will traverse some very rough ground, requiring some heavy rock cutting, some timber trestles, and thorough anchorage of the track on the steep stone incline, and considerable sidehill cutting is also encountered. The general plan is to construct a two car, three rail line consisting of three lines of heavy timbers beneath the rails, anchored to the rock and extending from end to end of the line, across ties drift bolted to these timbers; three lines of rails spiked to the ties and at intervals, bolted to the track to prevent them from creeping downhill, and heavy outside guard timbers bolted to the ties. At the middle of the line the centre to centre spacing of the tracks will be increased and four rails will be used to facilitate the passing of the cars.

The cable line will be provided with two cars, each of which will seat about 60 passengers, and on each end of a plough steel wire cable, which between the cars, will be wound over two grooved steel drums which will be actuated through a train of gears by two electric motors. The two drums will be placed in tandem with the line and the cable will make four turns about the pair, thus providing for the continuous winding on or off of the cable without traverse along the drum. The grip of the rope as wound on the drums will be equal to the total strength of the cable, and slipping will be impossible. Gum wood rollers will support the cable as it drops to the track behind the car and decrease friction and wear. The motors will be provided with limit switch and solenoid brakes to bring the cars to a stop without jar at the end of their travel. Hand brakes will also be provided. A plough steel cable, 1.25 in. in diameter, will be provided to haul up and lower the cars, and a safety cable will also be employed. Automatic brakes will clamp the car to the guard rail should a cable break. There will thus be two independent safeguards provided. Both telephone and signal bells will enable the conductors on the cars, to communicate with the operator in the machinery house at any time.

On the lines at the top and bottom of the mountain eight wheel cars of the city type will be provided, but equipped with heavy motors and air brakes. The cable cars will be fitted with swinging seats or platforms that will so adjust themselves that they will always be level, notwithstanding the changes in the gradients.

The power and stationhouse will be adequately equipped, and shelter houses and platforms will be provided. Provision will be made in the power house for a motor generator set to transform high protential alternating current to direct at about 600 volts. The power will be supplied by the B.C. Electric Ry.

The estimated cost of construction is: line at foot of mountain, $71,870; cable line, $191,615; line at top of mountain, $73,085; electric supply, $11,000; cars, $15,000; power house, etc., $13,200; engineering and incidentals, $30,230. Right of way and incorporation expenses not included.

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Montreal Tramways Co., Organization.

At a meeting of shareholders of the Montreal St. Ry. Co., Oct. 5, a resolution was passed by a vote of 61,391 shares to 3,627 to convey all the properties of the M.S. Ry., the Montreal Park and Island Ry., the Montreal Terminal Ry. and the Public Service Corporation to the Montreal Tramways Co., which was incorporated at the Quebec Legislature last session. The terms of the transfer are that $89.50 shall be paid in cash, and there shall be allotted $160 in 5% debenture stock and $20 in common stock of the Montreal Tramways Co., for each share of M.S. Ry. held. It was stated that as an alternative, arrangements would be made by which shareholders could receive $250 in 5% debenture stock and $20 in common stock in case they did not wish any cash. It was elicited during the meeting that the company had arranged for the sale of $10,000,000 of 5% bonds at 95 net, with accrued interest, to N. W. Harris and Co. Boston and New York.

The M.S. Ry. at present owns the Montreal Park and Island Ry. the Montreal Terminal Ry. and the Public Service Corporation, but each of them is carried on as a separate corporation. An agreement for the transfer of the M.P. & I.R. property to the M.S. Ry. was signed Sept. 22, and a meeting of shareholders of the selling company to approve the transfer was called to be held Oct. 23. The agreement provides as a consideration for the sale that the M.P. & I Ry. Co., will be released from all indebtedness to the M.S.R., which company undertakes to discharge all liabilities and to indemnify the M.P. and I. Ry. Co. against damages from any claims that may be made against it, and to pay to shareholders, other than those held for the M.S. Ry. $100 a share.

Application is being made to the Dominion Parliament to ratify the agreement between the Montreal Terminal Ry. and the Montreal St. Ry., for the conveyance to the latter of the former company's undertaking in whole for the following considerations:— (1) A release of the indebtedness of the M.T. Ry. to the M.S. Ry., and (2) a covenant on the part of the M.S. Ry. to pay all M.T.R. debts, liabilities and engagements.

The Montreal board of control has had the matter of the amalgamation of the companies under consideration, and carried the question before the Quebec Public Utilities Commission, Oct. 10. The position taken by the city is that the several companies should be completely merged, and arrangements made so that there should be only one franchise granted. The consideration of the matter was adjourned, an arrangement being made by which the parties should discuss the basis of a settlement.

The Montreal Tramways Co., issued a circular to shareholders of the M.S. Ry. Oct. 14, announcing the terms of the transfer, and inviting those shareholders who desired to accept the shares of the new company without any cash payment, to notify the company at once. The shares in the new company will be allotted after the expiration of 15 days from the date of the circular.

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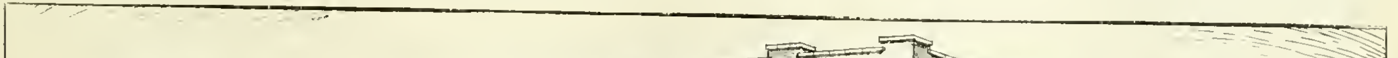
Moncton Tramways, Electricity and Gas Company, Ltd.

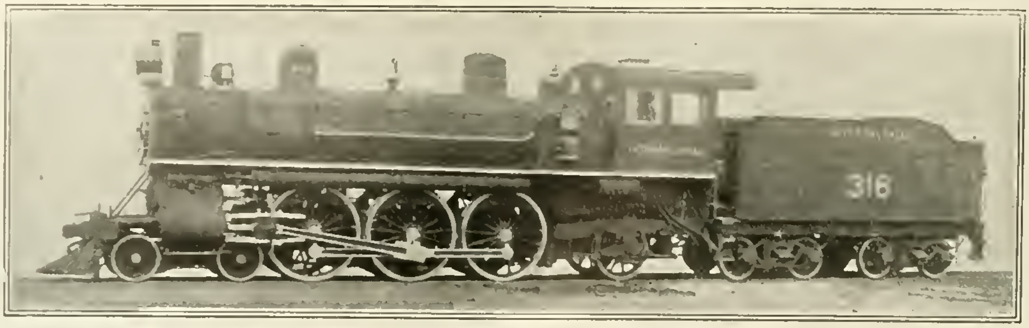
Rapid progress is being made with the construction of the part of the electric railway called for by the agreement with the city and it is expected to be ready this month. This section is about two miles of single track, extending from the hospital on King St. to the I.C.R. shops on John St. The complete scheme includes about 6½ miles of track, which is to be proceeded with next spring.

The company is an English organization, formed for the distribution of the gas from the nearby natural gas fields. The electric railway is but a part of a comprehensive plan of public utilities being developed. The English officials are Dr. J. A. S. Henderson, President, and E. A. Mitchell, Consulting Engineer, both of London; the officials in Moncton are F. W. Sumner, Vice President; J. P. Chalmers, Secretary, and W. G. Ritchie, Resident Engineer. The company has taken over the charter of the street railway company which operated in the town for three or four years some 15 years ago. The charter has 39 years to run.

A unique construction of roadbed has been introduced by the company's engineers. Apprehending difficulty from frost under the roadbed causing the track to upheave, and profiting by the experiences of other companies in this vigorous northern climate, the construction of the roadbed is decidedly different from that to be found elsewhere. The



British Columbia Electric Railway New Offices and Passenger Station at New Westminster, which was described in our October issue, pg. 973.



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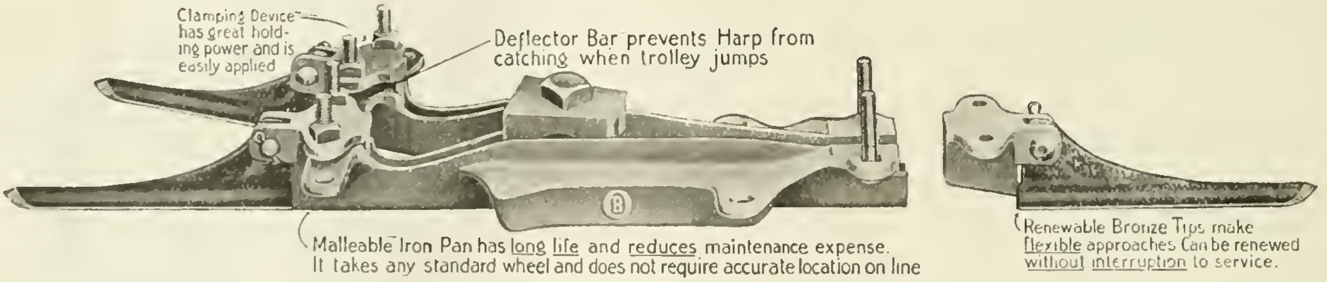
Clamping Device has great holding power and is easily applied
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Renewable Bronze Tips make flexible approaches Can be renewed without interruption to service.

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hard road surface, after being removed to the desired depth, is dressed smooth, and on this level surface, two-inch creosoted planks are laid lengthwise. It is believed that this will eliminate all difficulty from frost. Over this planking, there is a layer of sand ballast to the depth of about 2 ins., on which the ties, spaced 2½ ft. apart, are laid and ballasted between. This construction is in the nature of an experiment, but the engineer believes it will prove satisfactory. A deep girder rail is being laid. The overhead construction will use copper wire of the figure 8 section, supported by mechanical clamps.

Four small single-truck cars of 24-passenger capacity and a snow sweeper have been delivered for the initial operation.

◆

British Columbia Electric Railway Interurban Cars.

The B.C. Electric Ry. purchased recently from the G.C. Kuhlman Car Co., Cleveland, Ohio, three closed vestibule motor cars for interurban traffic, exterior and interior views of which are given on this page. The following are the chief particulars:—

Length over bumpers	53 ft 6⅝ ins
Length over each vestibule	4 ft. 8½ ins
Length of body over corner post	42 ft. 9⅝ ins.
Width over sills, including sheathing	8 ft. 3 ins
Width over all	8 ft. 4¾ ins.
Width inside walls of car body	7 ft. 9¾ ins.
Width of jamb opening car body end door	34 ins.
Width of jamb car body partition door	24 ins.

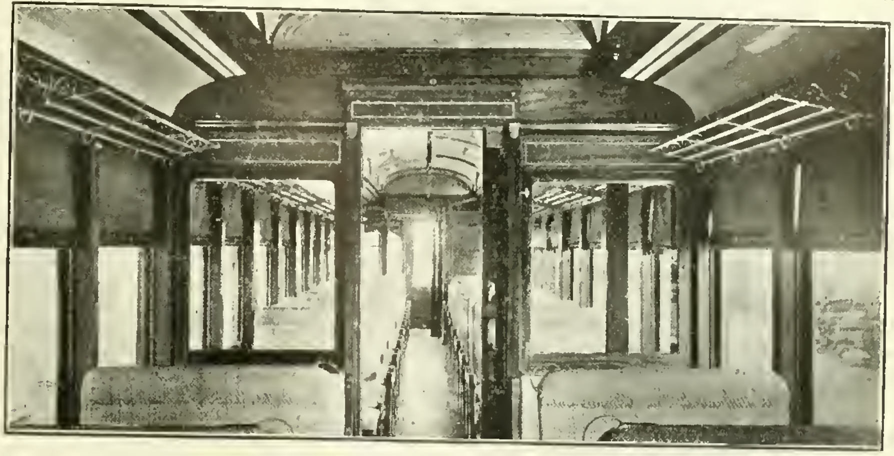
They are equipped with anti-climber bumper, radial M.C.B. draw bar and locomotive type petols. The glass is Pullman sash cathedral in four parts and deck sash cathedral; roof monitor; deck coach hoods; hood, steam coach; interior finish, mahogany; ceiling, empire deck; seats, rattan, 37¼ ins. over all; 18 in. aisle; Westinghouse A.M.M. air brakes; motors, G.E. 204; trucks, No. 27 M.C.B., 3 trucks; 6½ wheel base, 34 in. draw wheels, 4½ ft. track gauge; radius of curve, 35 ft.

◆

Electric Railway Finance Meetings, etc.

British Columbia Electric Ry.—Gross earnings for Aug., $436,520; operating expenses, $278,513; net operating earnings, $158,007; renewal funds $37,935; net earnings, $120,072; approximate income from investments, $25,000; net income $145,072, against $302,121 gross earnings; $170,083 operating expenses; $132,038 net operating earnings; $22,626 renewal funds; $109,412 net earnings; $22.000 approximate income from investments; $131,412 net income for Aug. 1910. Aggregate gross earnings for two months ended Aug. 31, $845,859; net earnings, $283,125, against $585,656 gross earnings and $239,277 net earnings for same period, 1910.

Cape Breton Electric Co.—Gross railway revenue for 12 months ended July 31, $332,935; operating expenses, $171,736; net revenue, $161,199; fixed charges $73,759; net income, $87,440, against $310,680 gross revenue; $169,178 operating expenses; $141,502 net revenue; $74,048 fixed charges; $67,454 net income for same period, 1909-10.

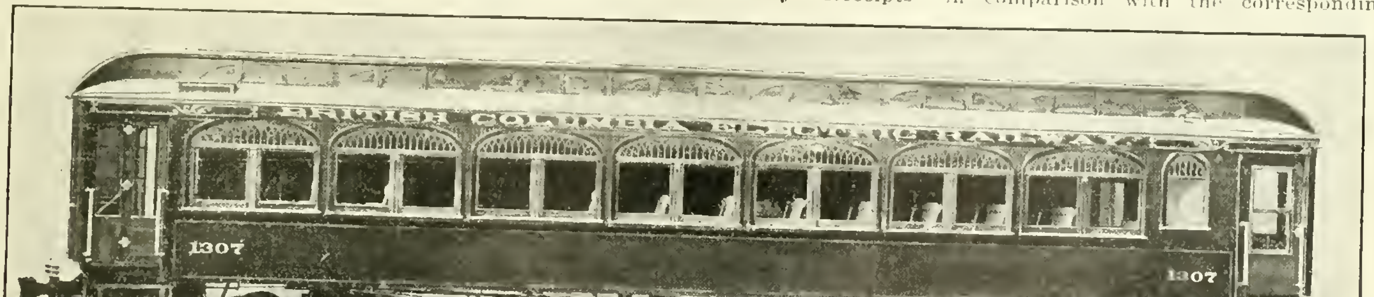


British Columbia Electric Railway Co.'s Interurban Car. Interior.

Chatham, Wallaceburg and Lake Erie Ry.—Gross earnings for the past year, $103,282.78, of which $52,159.62 was derived from passengers and $42,315.09 from freight, the balance being received from sundry operations. After providing for all expenses and bond interest, there is a surplus of $21,170.42. Following are the officers and directors for the current year:— President, D. A. Gordon, M.P.; Vice President, U. M. Fell; other directors, N. H. Stevens, C. Hadley, E. F. Kiser, G. R. Hill and M. P. Murray.

Grand Valley Ry.—Press reports, Oct. 12, stated that President Verner was in New York, in connection with negotiations for the merging of the G.V.R. and its allied companies—the Brantford St. Ry. and the Woodstock, Thames Valley and Ingersoll Ry.—with some other companies, with the object of connecting and extending them to form a line from Toronto to Detroit.

Halifax Electric Tramway.—Receipts for Sept., $24,864.20, and for two weeks ended, Oct. 14, $8,356.11, against $21,141.04, and $10,407.87 for same periods, 1910.



British Columbia Electric Railway Co.'s Interurban Car.

Montreal and Southern Counties Ry.—The following officers were elected for the current year, at the adjourned annual meeting, Oct. 2:— Chairman, S. T. Willett; President, E. H. Fitzhugh; Vice President and General Manager, W. B. Powell; Treasurer, Frank Scott; Secretary, H. W. Cooper.

Quebec Ry., Light and Power Co.—Gross earnings for the year ended June 30, $1,380,126; operating expenses, $661,907; net earnings $718,219; fixed charges $445,219; surplus $273,000, against $1,127,952 gross earnings; $644,563 operating expenses; $483,388 net earnings; $442,644 fixed charges; $40,744 surplus for same period 1909-10.

Quebec Ry., Light, Heat and Power Co.—The annual meeting, which was adjourned from Sept. 12, was held Oct. 3. The resignation of J. W. McConnell, was accepted, and it was announced that in view of the heavy French holdings, it had been decided to elect three Paris men as directors.

The regular quarterly dividend of 1% was paid Oct. 16, to shareholders of record at Sept. 30.

Regina St. Ry.—Gross earnings for Aug., $7,718; operating expenses $3,328; net earnings $4,390.

St. Thomas Street Ry.—Passenger receipts for Sept., $1,361.79 against $1,333.02 for Sept., 1910. Passengers carried 39,498, against 38,040 in Sept. 1910.

Sherbrooke Ry. and Power Co.—We are advised that the railway department of the company did remarkably well during the four months ended Sept. 30, in comparison with the corresponding period in former years. The returns show 34% increase in the gross earnings, and a corresponding increase in the net earnings. The proportion of operating expenses to gross earnings during the four months averaged 52%.

Edmonton Radial Ry.—Revenue for

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AND ITS LESSON

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THE LESSON

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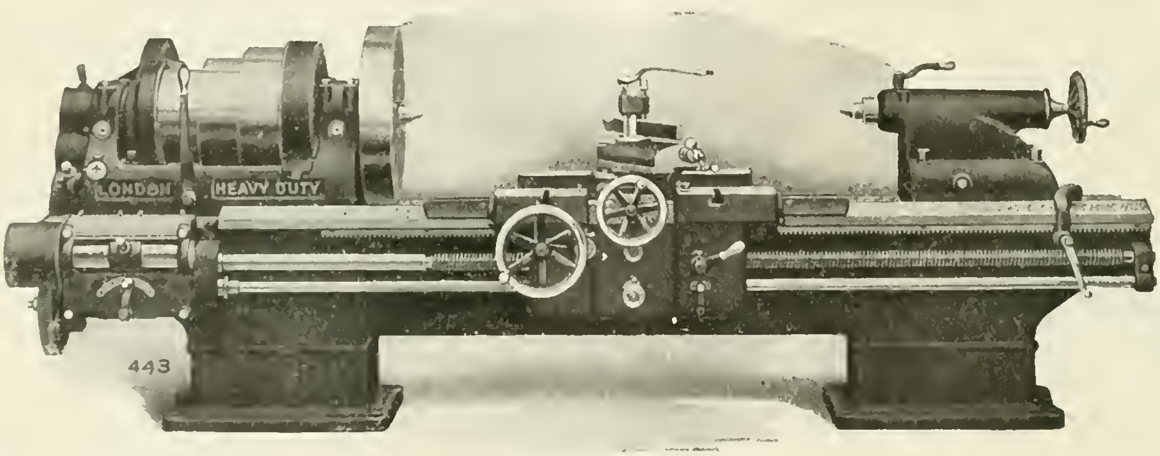

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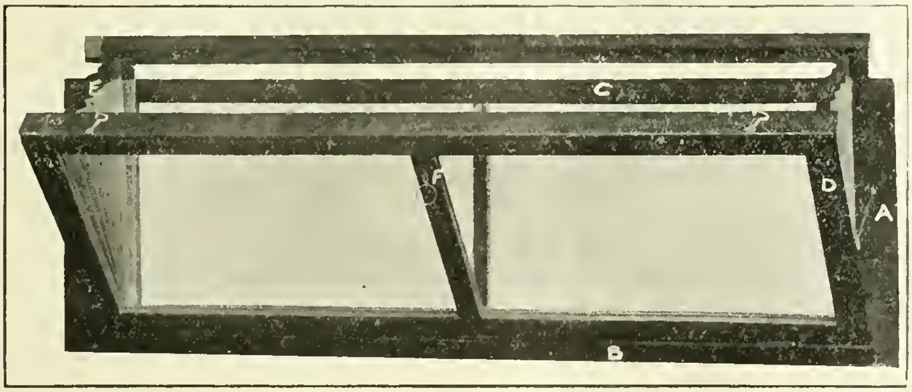
Sept., $182,380, against $112,368 for Sept., 1910. Passengers carried in Sept., 4,356,327, against 2,612,599 in Sept., 1910.

London St. Ry.—Gross earnings for Sept., $27,766.69; expenses, $16,251.20: net earnings, $11,515.49; deductions, $2,409,35; net income $9,106.14; against $26,045.64 gross earnings; $15,470.80 expenses; $10,574.84 net earnings; $2,363.05 deductions; $8,211.79 net income for Sept., 1910. Aggregate gross earnings for nine months ended Sept. 30, $209,181.14; expenses, $144,450.13; net earnings, $64,731.01; deductions. $21,571.09; net income, $43,159.92, against $190,724.93 aggregate gross earnings; $134,856.98, expenses; $55,867.75 net earnings; $21,503.45 deductions; $34,364.30 net income for same period, 1910. At a meeting of directors, Oct. 24, it was decided to increase the capital stock from $552,000 to not exceeding $750,000. The new capital will, it is said, be used for extensions, which the city will shortly call for under a clause in the company's franchise.

Toronto Ry.—Gross earnings for Sept. $467,814.19; expenses $214,898.25; net earnings $252,915.94, against $428,580.07 gross earnings; $201,379.49 expenses; $227,200.58 net earnings for Sept. 1910. Aggregate gross earnings for nine months ended Sept. 30, $3,520,782.26; expenses $1,766,276.37; net earnings $1,754,505.89, against $3,1895,938.01 aggregate gross earnings; $1,634,760.20 expense; $1,561,177.81 net earnings for same period 1910.



A New Car-Window Ventilator.

The Toronto Power Co. is preparing to issue on the London, Eng., market, £821,197 4½% consolidated guaranteed debenture stock at 96. The issue is guaranteed unconditionally as to principal and interest by the Toronto Ry. Co.

Winnipeg Electric Ry.—Gross earnings for Aug., $299,615; operating expenses, $137,825; net earnings, $161,790, against $247,046 gross earnings; $124,719 operating expenses; $122,327 net earnings, for Aug. 1910. Aggregate gross earnings for eight months ended Aug. 31, $2,503,972; net earnings, $1,257,983, against $2,031,256 aggregate gross earnings; $1,009,468 net earnings for same period, 1910.

The special committee having under consideration the question of the purchase of the W.E.R., decided, Oct. 6, to recommend to the city council that negotiations be deferred. This report was adopted by the council Oct. 10.

R. J. Mackenzie is quoted as having stated Oct. 11, that a bid of $300 a share has been made for the company's whole capital stock by a Montreal-New York syndicate in which F. Morton Morse and the Manitoba Power Co. are interested.

An unconfirmed Winnipeg press dispatch of Oct. 23 says: "All holdings of the Winnipeg Electric Ry., which supplies gas, power and street railway services to Winnipeg and vicinity, have been purchased by the E. R. Reese Engineering Co., a United States concern backed by large capital. Final papers will be signed this week, part of the purchase price having been paid over last week. The company will build rural lines throughout the provinces."

Enquiries in Toronto, Oct. 25, failed to elicit any information in regard to the matter, one of the W.E. Ry. directors stating positively that there was nothing in the report.

◆

A New Car-Window Ventilator.

A ventilator of a new and rather ingenious design has recently been invented by M. Power, Master Car Builder, Toronto Railway, and on account of its adaptability to car window use it is here illustrated and described.

The illustration clearly shows its construction. The frame A of a width equal to that of the window and about half the window depth, is set into the window slide on its lower edge B, the window itself lowering on to the upper edge C of the ventilator frame. This ventilator frame is fitted with a very fine mesh brass wire screening similar to that used in sleeping car screen ventilators which this new type is intended to replace.

Hinged to the lower edge of the ventilator frame, there is a swinging window D fitted with panes of glass. This pane, when closed, fits up against the main pane very snugly. The ends are kept closed at all times by pieces E made of leatherette; these open and close with the window. The position of this window D is regulated by the chain F in a slot. The circulating air coming through the screen is deflected upward at an angle, refreshing the air, but doing away with the draft incidental to the ordinary form of ventilator.

This ventilator is especially adapted to keeping out cinders, and any such foreign material as does enter is precipitated to the pocket at the bottom by the inclined window, thereby freeing travelling from one of its disagreeable features. The screen pane has felt-covered spring edges for fitting into the window sash snugly.

A number of these ventilators have been given trials under varying circumstances, and so successful has their use been that the Perfect Ventilator Co., Ltd., 48 George St., Toronto, has been formed for their manufacture. Patents have been allowed both in Canada and the United States.

◆

The Board of Railway Commissioners issued a circular, Oct. 12, requesting that all railway companies file, within thirty days, a list showing the location of all draw bridges on their lines, and the manner of production provided for them.

Electric Railway Projects, Construction, Betterments, Etc.

Alberta Electric Ry.—The promoters advise us that since the act incorporating the company was extended to July 21, representatives of the company have been actively canvassing the municipalities through which the lines are projected. The total mileage authorized under the act is 1,200, but it is proposed to build it in sections. The line is authorized to be built along the main highways, but the company is being offered every facility for acquiring a private right of way at a minimum cost, so that it is probable very little, if any, portion af the line will be built on the highways. The ten sections authorized radiate from Calgary, west, northeast, east, southeast, and south, and will, if built, serve such places as Banff, Strathmore, Bassano, and Brooks, in one direction; Rocky View, Yankee Valley, Irricana and Red Deer to the north; Bennett, Gladys, Brant, Long Coulee and Medicine Hat to the southeast. From the Medicine Hat line it is proposed to build lines to Taber, Lethbridge and Macleod, and another line is proposed from Macleod to Pincher Creek. The cost of construction on the highways will, it is claimed, be about one-third of that of the steam railways. It is proposed to operate the line by individual unit cars, the plan being: a car about 60 ft. long, containing first, the compartment for the 200 h.p. kerosene motors, and the driver in charge; second, compartment containing room for baggage, parcels and smoking; the main portion of the car containing seats for 50 or 60 persons. This car would have sufficient power to haul two freight cars, and, as the gauge would be the standard steam railway gauge, it is proposed to haul ordinary railway cars in addition to the company's own lighter cars for market produce, milk, cattle and such like. With the low cost of construction, low operating charges, and other things, it is hoped to put the rates low enough to make an extensive business not only possible, but easy.

Application is being made to the Dominion Parliament for an act authorizing the company's name to be changed to that of the Alberta Inter-Urban Ry., and to replace sec. 3 of the present act by one declaring that the capital shall be $10,000 a mile of the total mileage, actually constructed or under contract, the total capital not to exceed $10,000,000. (Oct., pg. 973.)

A general meeting of shareholders has been called to be held in Calgary, Alta., Nov. 8, to elect directors, consider a contract with the Land Traction Co. for the building of the projected lines, and to authorize the directors to issue bonds and to execute a mortgage as security for the bond issue. The notice is signed by G. E. Wood, chairman of the provisional board of directors.

Brandon, Man.—The first spike of the municipal electric railway was driven by the mayor, Oct. 9. The line is being built by the city council, but nothing has been decided as to its operation. The question is under consideration on the basis of a draft agreement submitted June 26, by J. D. McGregor. (Oct., pg. 973.)

British Columbia Electric Ry.—While the company is carrying out a number of improvements, on the lines in Vancouver and the surrounding municipalities, and is considering the building of a number of additional lines, the question of the unification of the various franchises is the most important matter under consideration. The municipality of Burnaby is submitting a bylaw to the ratepayers confirming franchises

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granted, and providing for the construction of additional lines. The city of Vancouver desires to increase its boundaries, but finds that one of the difficult matters to be adjusted is the street railway franchises. The Vancouver Board of Trade and city council, and the councils of the other municipalities are discussing the matter, and it is expected that the ratepayers will be asked to decide whether steps should be taken or not to acquire the whole of the rights and franchises of the company for street railway purposes in the interests of the people.

The Westminster road extension in Vancouver has been completed and cars are being operated over it. Tenders are under consideration for rebuilding Kitsilano bridge on the Lulu Island line, with the exception of the draw span. The new bridge will be a double track one, as a second track is being built from King Edward Ave., Vancouver, to near the B.C.E.R. station in Eburne, about four miles. A second track is also being built on the line to Kitsilano Beach.

An addition, 240 by 104 ft., is to be built at the present car works on Twelfth St., New Westminster.

As the British Columbia Electric Ry. Co.'s interurban cars are being sent to the shops for repairs, alterations are being made to the equipment of each by the installation of the Westinghouse multiple unit control. This change is being made in anticipation of two car trains being operated next year between Vancouver and New Westminster when the cut-off just outside the latter city is ready for service, the grade at the entrance to the city being thereby reduced from 12% on one stretch to 2%. The control being installed is of the type which automatically shuts off the power as soon as the motorman's hand is taken from the lever.

The company has awarded two contracts in connection with the double-tracking of the branch of its system extending from Vancouver to Eburne. This stretch forms a part of the Lulu Island Ry. and is operated by the B.C.E.R. Co. under a lease from the C.P.R. The entire line is now single track from Vancouver to Steveston as well as the branch line along the north arm of the Fraser River to New Westminster. Settlement is proceeding rapidly in the suburban area along the line adjacent to the city necessitating the double-tracking of this stretch. The contracts awarded are to G. H. Webster, M. Can. Soc. C.E., of Vancouver, for grading four miles of the line in readiness for track laying and ballasting, this work including the stretch between Twenty Fourth Ave. Point Grey and Eburne, and to Armstrong, Morrison & Co., of Vancouver, for the reconstruction of the bridge over False Creek used in approaching the central district of Vancouver. The bridge is about 1,500 ft. long, of trestle construction. It will be double-tracked throughout with the exception of the drawspan, Australian hardwood piles being used, the work covering a complete reconstruction of the bridge. In connection with the double-tracking the company will improve the line by using 60 lb. rails throughout. The new track will be laid just to the east of the present track, following practically the same line and grade as now exists. While the contractor is proceeding with grading, the company will complete the double-tracking of the line from 24th Ave. to the Vancouver terminal, as well as similar work on the city extension of the line from the south end of False Creek bridge to Kitsilano.

The company is reported to have purchased 200 acres of land at Cadboro Bay for park purposes. (Oct., pg. 973.)

Calgary Municipal Ry.—The taxpayers of Calgary, Oct. 4, passed a bylaw, authorizing the issue of $375,000 debentures for the extension of the street railway, and for the purchase of additional rolling stock and power house equipment.

The extension of the line to Tuxedo Park has been completed; a project is under consideration for the building of a line in the south-eastern section of the city. (Oct., pg. 973.)

Coteau Power Co.—We are advised that the charter rights and the franchises, etc., of this company have been acquired by Mackenzie, Mann & Co., Ltd. Sir Wm. Mackenzie, accompanied by T. H. White, Chief Engineer, Canadian Northern Pacific Ry. recently went over the routes of the proposed electric railways in the Okanagan Valley, B.C., and it is said that arrangements are being made for starting construction in the near future. (Oct., pg. 973.)

Edmonton Radial Ry., Strathcona Radial Ry.—The ratepayers of Edmonton and Strathcona, Alta., passed bylaws, Sept. 27, providing for the amalgamation of the two cities, and the Legislature will be asked to ratify the same. The agreement for amalgamation provides for various extensions of the electric railways in Strathcona, and for the erection of a low level bridge to connect the two cities. The S. R. Ry. is controlled by the E. R. Ry., which is owned by the Edmonton city council. (Sept., pg. 877.)

Hull Electric Co.—Press reports state that the company is considering tenders for the erection of a new carhouse at Hull, Que. (July, pg. 683.)

Lethbridge, Alta.—The City Engineer recently presented a report to the city council upon the building of an electric railway in the city. He recommended the building of 11.1 miles reckoned as single track, at a cost of about $300,000. It is expected that a start will be made on construction early in 1912. In the meantime the grading and paving work upon certain streets is being carried out in such a way that the railway construction work will be facilitated. (Sept., pg. 879.)

London St. Ry.—The London, Ont., city council passed a resolution, Oct. 16, directing its street railway committee to consider the whole question of the service given by the L.S.Ry., the betterments necessary in order to provide more adequate service, and the extensions to which the city is entitled under the franchise by reason of the increase of population. (June, pg. 555.)

Moncton Tramways, Electricity & Gas Co.—E. A. Mitchell, Consulting Engineer, who inspected the work in progress Oct. 13, reports that satisfactory progress has been made with the work. About a mile of track has been laid, and a good deal of the overhead work is ready. The car shed is completed, and the power house is well advanced. Four cars and a snow sweeper have been delivered. He expected that cars would be in operation by the end of the year. (Oct., pg. 975.)

Montreal and Southern Counties Ry.—Application was made to the Montreal city council, Oct. 10, for permission to build lines from Youville Square along Grey Nun St., by St. Paul St. to Inspector St., Chaboillez Square, Cathedral St., and Metcalfe St., to St. Catherine St. West. The application is under consideration. (Sept., pg. 879.)

Montreal St. Ry.—The city council passed a resolution, Oct. 16, directing its law department to do everything necessary to protect the interests of the city in the rearrangement of the charters held by the company, and to prevent the present obligations to the city being got rid of in the amalgamation of the several companies under the title of the Montreal Tramways Co. (Oct., pg. 975.)

Morrisburg and Ottawa Electric Ry.—The shareholders were called upon to pay to the Secretary, R. A. Bishop, Ottawa, by Oct. 23, a call of 10% of the amount of the stock subscribed for by them, in accordance with the resolution of a special meeting of shareholders held Sept. 12. (Sept., pg. 879.)

Nanaimo, B.C.—The city council, Sept. 26, authorized its tramway committee to take the necessary steps to secure a charter for the building of an electric railway in this city. This was in accordance with the recommendation of the committee which has been, for some time, considering applications from financial and construction companies for franchises. (Oct., pg. 975.)

Nipissing Central Ry.—The spur line connecting the old line of the N.C.R. at North Cobalt, Ont., with the Temiskaming and Northern Ontario Ry., was completed Oct. 11. The line between Cobalt and Haileybury is being reballasted at certain points. Three routes are under consideration for the extension of the line from Haileybury to New Liskeard, and a bylaw is being prepared for submission to the taxpayers in the latter town, renewing the franchise and designating the streets on which the line is to be run. (Oct., pg. 975.)

Ottawa, Smiths Falls and Kingston Ry.—Press reports state that surveys for this projected railway have been completed between Smiths Falls and Manotic, Ont., and that the engineering party is now going over the route between Smiths Falls and Kingston. (Oct., pg. 975.)

Owen Sound, Ont.—The mayor of Owen Sound has proposed that an electric railway be built in the town to be owned and operated by the municipality. It is suggested that six miles of track be built by an initial estimated cost of $100,000.

Regina Municipal Railway—The ratepayers voted Oct. 5, in favor of a bylaw authorizing the city council to raise $400,000 in connection with the construction of an electric railway in the city.

Rapid progress is reported to have been made with the building of the electric railway lines and the chairman of the committee having charge of the work, stated at the last meeting of the council, that he expected nine miles would be completed by the time operations would have to be suspended for the season. (Oct., pg. 975.)

Rural Ry. of Manitoba.—Nothing has been done by the company in the way of building lines in the municipality of St. Vital, which were to form part of a belt line round the outskirts of Winnipeg, and connecting with the city lines at all points. The municipalities interested are considering what action to take in the matter, and it is reported that the Winnipeg Electric Ry. may take over the charter rights and franchises of the Rural Ry. (June, pg. 557.)

St. John's, (Nfld.), Electric Ry.—The question of the extension of the electric railway owned by the Reid Newfoundland Co., in St. John's, Nfld., is under consideration. The city council desires that some new lines be laid, and that the routes be re-arranged so as to enable a better service to be given.

The Sherbrooke Ry. and Power Co. is devoting practically all its attention at present to the extension of its power plant. A transmission line which it is expected to have completed by Dec. 1, is being built to Derby Line, Vt. This will supply light and power to Lennoxville, Capelton, Eustis, Waterville,

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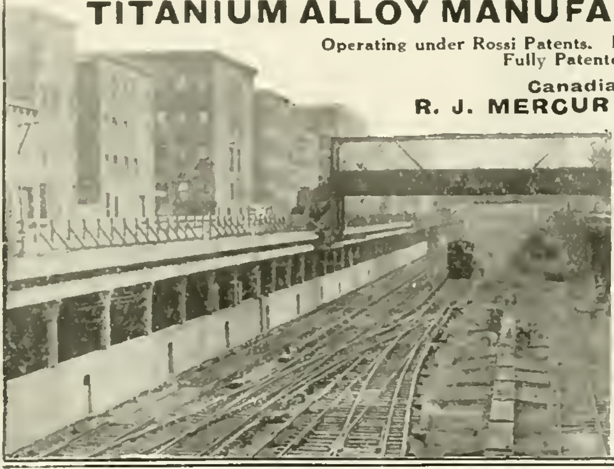

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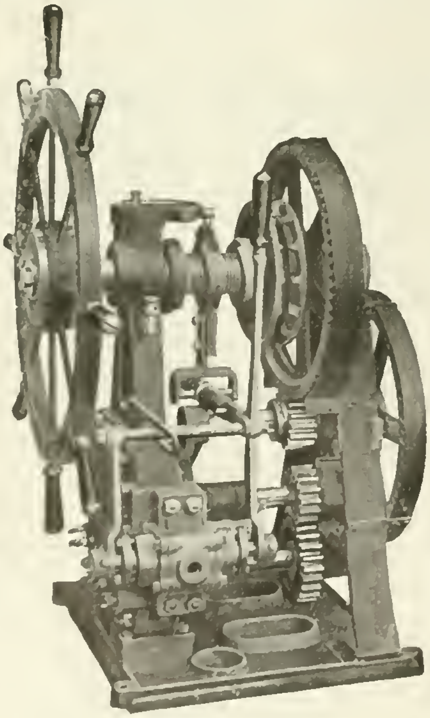

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Compton, North Hatley, Massawippi, Ayer's Cliff, Boynton, Smith's Mills, Beebe Jct., Beebe Plain, Rock Island, Stanstead, Que., and Derby Line, at the Quebec-Vermont boundary. At North Hatley the company recently acquired the 400 h.p. electric installation, which will be absorbed into the system on the completion of the new transmission line. (Aug., pg. 785.)

Saskatoon, Sask.—Under the bylaw passed in July last, confirming the agreement between the city council of Saskatoon, Sask., and H. M. E. Evans, regarding the supply of power to, and the construction of an electric railway in the city, the contractor undertakes to obtain from the Legislature a confirmation of the charter of the Saskatchewan Power Co., and authority to build the electric railway. We are advised that no construction will be done this year on the railway part of the undertaking, but it is expected that a start will be made early in the spring. A site has been secured for the power plant, and work is being proceeded with for the development of the water power under the provisions of the Dominion Act incorporating the Saskatchewan Power Co.

The lines to be built under the agreement have their centre opposite to the C.P.R. station, one line running to the Caswell Hill addition, thence to Albert Ave., on to Boundary Drive, along 7th Ave., Princess St. and 2nd Ave. to 19th St., crossing the river by the traffic bridge to the corner of Broadway and Spruce streets, where a divergence is made, one line running to the University grounds, and another to the fair grounds. A line from the C.P.R. along 23rd St. connects with the line on 2nd Ave.; and a third runs along 20th St. to St. Mary's Hospital, a branch running from opposite the 20th St. school to 16th St.

The present organization for handling the project, we are advised, is the Saskatoon Power Tramways Construction Syndicate of London, Eng. The directors of this organization are.— J. S. F. Samborne, R. N. Grenfell, and W. C. Burton. H. M. E. Evans, of Edmonton, Alta., being the Canadian representative. The engineering work is in the hands of J. G. White & Co., New York.

Stratford Street Ry.—A number of the directors had an interview with J. W. Leonard, Assistant to the Vice President, C.P.R., in Stratford, Ont., Oct. 11. M. Williams, stated on the following day that the interview was a most satisfactory one and that as a result the building of the electric railway was assured. The route by which the C.P.R. would enter the city was immaterial, as the street railway would be connected with it under any circumstances. An agreement was in course of settlement for the street railway to handle the C.P.R. traffic. (June, pg. 557.)

Three Rivers, Que.—Property owners in Three Rivers, Que., voted Oct. 16, in favor of authorizing the city council to arrange for the building and operation of an electric railway in the city.

Toronto Eastern Ry.—It is said that the management is considering the use of gas-electric motor cars instead of trolley cars and that this is one of the reasons why construction has not been started this season.

Vancouver and Grouse Mountain Scenic Incline Ry.—The final location surveys are being made and it is expected that some alterations will be made which will effect a considerable saving on the incline section of the projected line.

Welland, Ont.—A press report states that grading on a line under the Niagara, Welland and Lake Erie Ry. charter, was started in Welland, Ont. Sept. 20, and on Oct. 3. The mayor drove the first spike. Arrangements are being made to extend the line to Port Colborne, on the east side of the Welland canal.

Windsor, Essex and Lake Shore Rapid Ry.—The Board of Railway Commissioners has approved plans for passenger shelters to be erected in Sandwich South tp., Ont. (May, pg. 455.)

Winnipeg Electric Ry.—During the construction season now concluded 9.155 miles of new lines have been laid in Winnipeg, in addition to a number of switches, loops, etc. All these lines are expected to be completed for traffic early in Nov.

It is stated that owing to the failure of the Rural Ry. to carry out work under the franchise granted it in St. Vital, Man., the W.E. Ry. will be asked to build lines in that municipality. (Oct., pg. 975.)

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Levis County Railway.

The report for the year ended June 30, presented at the annual meeting at Montreal, Oct. 18. shows gross receipts $66,656.98; expenses $57.755.03; net earnings, $8,901.95. Following is the balance sheet:—

ASSETS.			
Property account		$608,778 44	
Track, roadway, and machinery		3,737 23	
		$612,515.67	
Sale of land	$1,800.00		
Less costs	32.35		
	$1 767 65		
Elevator fire	6,000.00	7,767 65	$604 748.02
Stores			3,391.60
Stock sundries			1 458.73
Cash in bank and on hand			3 087 10
National Trust Co. in trust			7,800.00
Accounts receivable			656.68
Profit and loss balance			32,213.11
			$653,355.24
LIABILITIES.			
Bond account			$151,100.00
Preferred stock			132,600.00
Common stock			250,000.00
Loan account			85,600.00
Accounts payable			8,042.07
Accrued bond interest			26,013.17
			$653,355.24

Following are the officers and directors for the current year:— President, S. H. Ewing; Vice President, Hon. R. Turner; Secretary-Treasurer, E. A. Macnutt; other directors, J. A. Richardson, John Forman, Col. C. E. Allen-Jones and J. C. Blouin.

◆

Electric Railway Notes.

The Montreal St. Ry. has ordered 70 G.E.2 trucks, without wheels, in the United States.

The B.C. Electric Ry. has added six new cars to its rolling stock in Victoria, B.C.

The Hull Electric Co. is in the market for six double truck, semi-convertible, pay-as-you-enter cars.

J. W. Williams, Detroit, Mich., has been appointed Secretary, London St. Ry., London, Ont., vice G. H. Bentson, deceased.

The Winnipeg Electric Ry. is building 2 new cars at its own shops. There have been 23 new cars placed on the lines already this year.

The British Columbia Electric Ry. has ordered one heavy double broom electric snow sweeper from the Ottawa Car Co., Ottawa, Ont.

The Moose Jaw Electric Ry. has ordered two 21 ft. cars, 31½ ft. long over all, mounted on 21-E trucks, from the Ottawa Car Co., Ottawa, Ont.

The British Columbia Electric Ry. is considering the operation of two-car trains on its Vancouver-Westminster interurban lines, instead of single cars as at present.

The North Toronto council is preparing an indictment against the Metropolitan Ry. (Toronto and York Radial Ry.), for maintaining a common nuisance in the loading and unloading of freight cars.

The Montreal city council is applying for a mise en demeure against the Montreal Terminal Ry., claiming that the company has broken its agreement not to send freight over its tracks on certain lines in Longue Pointe.

A. J. Dacres, cashier, Quebec Ry., Light and Power Co., Quebec, was presented with a locket and chain, Oct. 8. by the office staff, on his leaving the service, to enter the employ of the Jonquiere Pulp, Co., Jonquiere, Que.

The Moose Jaw, Sask., town council, has called the Moose Jaw Electric Ry.'s attention to the fact that it is operating its cars on Sundays, without first having obtained the sanction of the ratepayers, which, it is claimed, is required by law.

The Edmonton, Alta., city commissioners received tenders, Oct. 19, for three and five years, for advertising privileges on the street railway cars. There are now being operated 30 semi-convertible cars, carrying about 20,000 passengers daily.

G. McLeod, Electrical Engineer, Sandwich, Windsor and Amherstburg Ry., has also been appointed Superintendent, with authority over all motormen and conductors. M. Brocklebank, heretofore Superintendent, will continue as his assistant. Office, Windsor, Ont.

The St. John Ry., St. John, N.B., increased the wages of its motormen and conductors on Oct. 2, one cent an hour all round, making the present rates as follows: 1st year, 18½ c.; 2nd year, 19½c.; 3rd. year, 20c.; 4th year, 20½c.; 5th year, 21c. Three cents extra on Sundays.

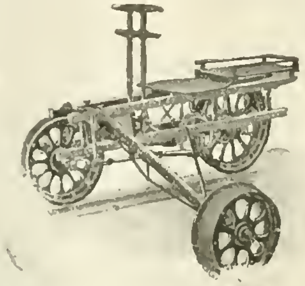
F. B. Griffith, heretofore claims Agent and Superintendent of Shops, Dominion Power and Transmission Co., Hamilton, Ont., has been appointed Claims Agent and Superintendent of Interurban Lines, vice A. J. Clarke, Superintendent of Interurban Lines, resigned. J. O. Binkley succeeds him as Superintendent of Shops.

The ratepayers of Kildonan, Man., voted on Oct. 7, on the question of permitting the operation of street cars within the municipality on Sundays. The vote stood 119 for and 11 against, but as the total vote polled was 50 less than the three-fifths of the electorate necessary to secure the passing of the bylaw, nothing further will be done at present.

The Calgary city council has arranged to purchase 18 new cars. Six cars, 46½ ft. long, have been ordered from the Ottawa Car Co., and the remainder from the Preston Car and Coach Co. Of these latter, six will be 46½ ft. long, and six will be smaller. These orders are for car bodies only, the trucks and motors being provided by the city. A sprinkler has also been ordered from the Preston Car and Coach Co.

The electrification of the Swiss national railways will, it is said, be by the use of the single-phase overhead-conductor, 15,000-volt system. The construction will be patterned after that on the London, Brighton & South Coast Ry., in England. The first work will be on the St. Gothard line, gradually extending to the whole Federal system of 1,830 miles. The cost is reported to be estimated at $13,140,000 and the running expenses are estimated at 10% less than the present cost of steam operation.

The Toronto and York Radial Ry. has a large milk business and operates spe-



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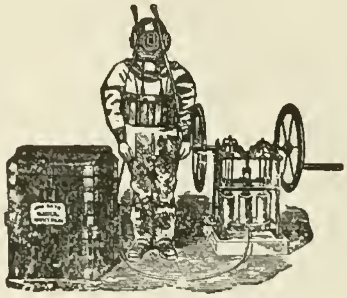

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cial milk cars which are provided with chain hung shelves for increasing the load capacity. These are folded up out of the way when not needed. Milk is handled at the rate of 10c. per 8-gal. can up to 20 miles, and 15c. from 21 to 30 miles. Much of it is delivered at the freight terminal on the outskirts of the city, but a portion is delivered by the company's express wagons and gasoline trucks, for which a charge of 2c. per 100 lbs., with a minimum of 20c., is made.

Jas. Roosevelt, heretofore General Superintendent, Third Avenue Ry., New York City, has been appointed Manager of the Transportation and Sales Department, British Columbia Electric Ry., with office at Vancouver. This office covers a new field, viz., the supervision of the company's tram systems, both urban and interurban, on the mainland and Vancouver Island, as well as the control of the sale of light and power at all points of the company's territory. In the operating department, he assumes the duties heretofore carried out by F. R. Glover, formerly Assistant General Manager, now General Executive Assistant.

S. B. Thompson has been appointed Mechanical Superintendent, British Columbia Electric Ry., Vancouver. This is a new position in the division of the company's work, its creation having become necessary owing to the rapid development now going on over the territory served. He will have supervision of rolling stock and electrical equipment at all points on the Mainland and Vancouver Island. Prior to going to Vancouver, he was in charge of the operating department of Sanderson and Porter, Consulting Engineers, New York City, and was formerly connected with electrical railways at Baltimore, Youngstown, Ohio, and Anderson, Ind., as well as with several steam railways.

Edward P. Coleman, whose portrait appears on this page, was born at Taunton, Mass., June 14, 1867, and educated at the public schools there. He was, from Feb. 9, 1885, to Feb. 9, 1896, in the draughting room of Hubec Printing Press, at the shops of the Taunton Locomotive Manufacturing Co., with which his father and grandfather had been associated for many years; Jan. 1, 1896, to Sept. 1, 1900, Treasurer and General Manager, Attleboro Steam and Electric Co., Attleboro, Mass.; May 5, 1898, to Mar., 31, 1899, in United States service during the Spanish war as Second Lieutenant and Battalion Adjutant, 5th Massachusetts Infantry; July 1, 1899 to Sept. 1, 1900, General Manager, Plymouth Electric Light Co., Plymouth, Mass.; Sept. 1, 1900 to June 1, 1905, Vice President and General Manager, Consolidated Lighting Co., Montpelier, Vt.; June 1, 1905 to Mar. 1, 1907, in practice as consulting engineer, general, electric light, power, railway and quarry work, and Treasurer and Manager, Wetmore and Morse Granite Co., Montpelier, Vt.; Mar. 1, 1907 to Jan. 1, 1909, General Manager, Great Northern Power Co., Duluth Minn.; and since Mar. 1, 1909, Manager of Railways, Dominion Power and Transmission Co., Ltd., Hamilton, Ont.

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The C.P.R. Telegraph Department has opened offices at Pictou, N.S.; Lochalsh, Nestleton and Staffordville, Ont.; Aranaud, Genest, Headingly and Nivervlllem, Man.; Ogema and Pangman, Sask.; Beiseker, Alta.

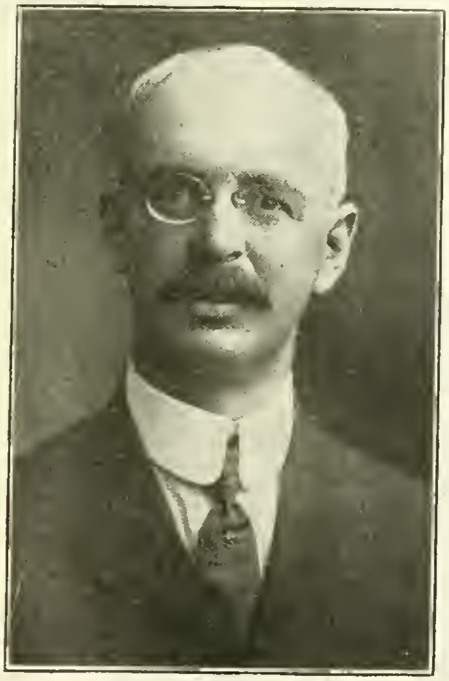
The Great North Western Telegraph Co.'s annual meeting was held at Toronto, Sept. 28. Following are the officers and directors for the current year: President, H. P. Dwight; Vice President, Adam Brown; other directors, W. C. Matthews, Jas. Hedley, Hon. J. K. Kerr, Æ. Jarvis, F. B. Hayes, Toronto; J. B. VanEvery, N. Carlton, New York.

Telegraph and Cable Matters

The Superintendent of Newfoundland postal telegraphs has announced that communication has been established with offices on the Burin branch line and all offices in Trinity, Bonavista and Notre Dame Bays, also offices on the west and northwest coasts to Port aux Basques and Port Saunders, via Cuckold's Cove, Canso and Port aux Basques.

Jas. Kent, Manager of Telegraphs, accompanied by B. S. Jenkins, General Superintendent of Telegraphs, Western Lines, C.P.R., recently completed the annual inspection trip through the west. During the past year the company has strung 12,000 additional miles of wire, 80% of which is copper, and it is anticipated that almost as much will be strung next year.

The Temiskaming and Northern Ontario Ry. is erecting two additional telegraph wires between North Bay and Englehart. It is said to be the intention to handle local business mainly on the new wires, through business having the right of way over the existing wires. Complaints had been made regarding poor service, and it is believed that the new wires will take care of all the business offering.



E. P. Coleman,
Manager of Railways, Dominion Power and Transmission Co., Ltd.

A number of representatives of the G.T.R. telegraph operators from various parts of Canada and the United States, met in Toronto recently to discuss a general wage and time schedule. It was reported that the G.T.R. schedules were behind those of the C.P.R., and that some steps would probably be taken in the near future to discuss the matter with the company, with a view to bringing the G.T.R. into line with the other companies. The minimum monthly wage of the G.T.R. operator, for a week of seven days, was quoted as $50, against $53 a month, for a week of six days, on the C.P.R.

B. S. Jenkins, General Superintendent, C. P.R. Telegraphs, Western Lines, Winnipeg, has recently completed 30 years of continuous service with the company. He was concerned in the organization of the department in 1883, when a single wire, east to Port Arthur and west to Medicine Hat, was sufficient to carry the business. There are now, on the Western Lines, 7,320 miles of poles, 44,251 miles of wire, and 525 offices. He was born at Richmond Hill, Ont., Apr. 8, 1859, and entered C.P.R. service Sept. 21,1881, as telegraph operator at St. Boniface, Man.; transferred to Brandon, Apr. 1882; appointed Superintendent of Telegraphs, Western Division, July 1883, and General Superintendent of Telegraphs, Western Lines, Dec. 1899.

The Pacific Cable Board's report for of £29,334, towards meeting the amount the year ended Mar. 31, shows a balance of £77,544 in respect of interest and sinking fund. The balance is an increase of £11,378 over the previous year. The deficit is paid by the British, Canadian and Australian Governments. The Canadian land line service was taken over by the board in Sept., 1910, the results being quite satisfactory, the average time for transmission between Great Britain and Australia having been reduced nearly 18 minutes, in addition to an improvement in accuracy. The number of messages handled during the year was 129,154, representing 1,849,613 words. A system of deferred messages at reduced rates will be adopted shortly.

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Among the Express Companies.

Four employes of the Dominion Ex. Co., are under arrest at Calgary, Alta., on charges of theft of money, forgery and embezzlement.

A. J. Downing, heretofore chief clerk, at Woodstock, Ont., has been appointed agent, Dominion Ex. Co., and ticket agent, C.P.R., there, vice G. A. Joyce, resigned.

The Dominion Ex. Co. has issued a circular announcing the withdrawal of its service over the Central Ontario Ry. It will, however, retain its offices at Marmora and Bannockburn.

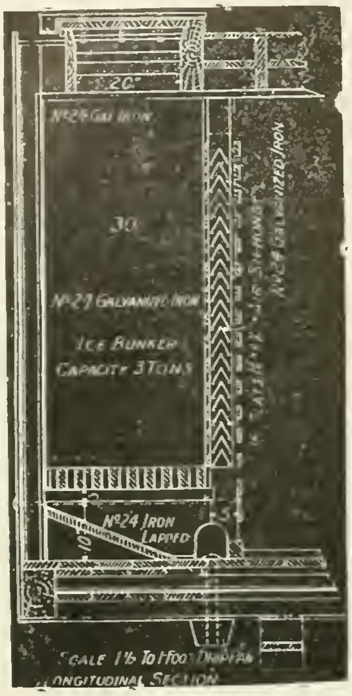
The Board of Railway Commissioners has fixed the limit for the delivery and collection of parcels by express companies, in Brandon, Portage la Prairie and St. Boniface, Man., and Regina, Sask.

The Canadian Ex. Co., is being sued at Levis, Que., for $1,116, claimed as damages for the loss of two maps delivered by the company to wrong parties in Montreal, by whom they were destroyed. The company offered $100 in settlement of the claim.

John Pullen, heretofore Assistant Traffic Manager, G.T.R., has been appointed President, Canadian Ex. Co., in charge of all the company's affairs, vice C. M. Hays, who has been elected Chairman of the board of directors. Office, Montreal.

The Board of Railway Commissioners has defined the limits for the collection and delivery of express parcels, for Port Arthur and Fort William, Ont.; Winnipeg, Selkirk and St. Boniface, Man.; Watrous, Saskatoon, Prince Albert, Weyburn and Moose Jaw, Sask.; Edmonton, Alta., and Vancouver, New Westmnister and Victoria, B.C.

The express companies' tariff for merchandise to points in Manitoba, Saskatchewan and Alberta, from Winnipeg, remodelled on the basis of the judgment of the Board of Railway Commissioners, Dec. 24, 1910, has been issued. The basis adopted is $5 per 100 lbs., per 1,000 miles, as against $3 in Eastern Canada. In some few cases, the new rate is a reduction on the old one, in others it is the same, while in a majority of cases the rate is slightly increased. The Winnipeg board of trade has protested to the Board of Railway Commissioners as to the basis of the rate.



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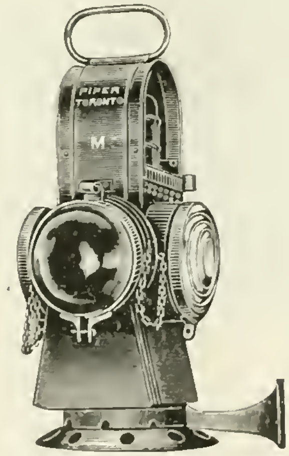

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◆

The C.P.R. Steamship Princess Alice.

The departure of this vessel, the latest addition to the C.P.R.'s British Columbia coast service, from Newcastle-on-Tyne, on Sept. 22, for Vancouver, was noticed in our last issue. Prior to this she completed a series of exhaustive trials at sea off the mouth of the River Tyne. A high speed was maintained and the machinery and boilers worked to the entire satisfaction of the owners, who were represented by Capt. Mowatt, Marine Superintendent. The Princess Alice is about 300 ft. long and 46 ft. broad. The plans of the ship and her construction were supervised by the C.P.R.'s steamship representatives in England. She has been built to fulfil the requirements of the Canadian Government for Pacific coast and channel service, and she carries the highest class of Lloyds registry.

An interesting feature is that she is the first of the C.P.R. fleet that has been specially built to carry oil fuel for raising steam in the boilers, though oil burning apparatus has been fitted into several of its other vessels. The furnaces are so constructed that either coal or liquid fuel can be used. The installation of the oil burning apparatus is extremely simple, the oil being forced into the furnaces through a specially constructed nozzle in a conical spray, when it at once becomes ignited. When burning liquid fuel on this system all brickwork is entirely removed from the furnace, and the system is so perfect that complete combustion takes place within a foot or two of the furnace front. From the moment of lighting up there is no smoke whatever to be seen from the ship's funnel. Among the numerous advantages of burning liquid fuel may be mentioned that firemen are dispensed with; there is no handling of ashes, and no coal dust or dirt in stokehold—in fact, the boiler room can be made the cleanest part of the ship. Furthermore, all the discomfort and inconvenience of loading a ship with coal in the ordinary way is entirely obviated.

The main propelling machinery consists of a four cylinder triple expansion engine with four cranks balanced, which successfully eliminates vibration, thereby greatly adding to the comfort of the passengers. The engine builders also constructed the four single ended boilers, each with three furnaces.

The passenger accommodation embodies all that the experience of the owners and skill of the builders could devise, and the ship will be one of the handsomest in her service. On the promenade deck the observation room is placed forward, and the smokeroom aft, both of these comfortable saloons having large plate glass windows, so as to give passengers an uninterrupted view of the splendid scenery of the coasts along which the ship will pass. The observation room is handsomely panelled in mahogany and the smokeroom in fumed oak, relieved by hammered copper panels depicting ancient totem poles of North American Indians, and also specimens of Canadian trees, fruit and grain. The furniture and upholstery in both these rooms and throughout the ship have been very carefully studied and will make her extremely comfortable. The corridors between the observation and smoke rooms are of polished mahogany with inlaid panels, and lead to a succession of comfortable deckhouse staterooms. A notable feature of the corridors is that they are surmounted by a cambered roof with a clerestory, giving a feeling of great height and spaciousness, together with ample light and ventilation. From the promenade deck, handsome staircases lead down to the upper deck, which is chiefly occupied by a series of first-class staterooms, including several suites of bridal chambers. On this deck there are also two social halls or music rooms.

On the main deck aft is the dining saloon, a handsome apartment panelled in beautiful Italian walnut. A noticeable feature in this room is the provision of specially large plate glass windows. The saloon is arranged with small tables, those at the sides being ensconced in bays. At the after end of the dining room is the pantry and behind that the galley. Underneath the dining room is the first class restaurant where meals may be taken a la carte.

The C.P.R. s.s. Princess Alice, for British Columbia Coast Service.

During August, 20 employes were killed, and four were injured in the course of their work in connection with Canadian navigation. Of the fatal accidents, 18 were due to drowning, one to a fall, and one to fire.

Grounding of s.s. Carrigan Head.

Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. F. Nash and C. Raymond, formerly a director of the Quebec Corporation of Pilots, as nautical assessors, held an investigation at Quebec, Sept. 1, into the cause of the stranding outward bound on July 14 of the s.s. Carrogan Head, a steel built vessel of 10 knots, whose net tonnage is 2,715. She carries a crew of 35, with three properly certificated officers, and carries general cargo and occasional passengers between Montreal and Quebec and Belfast and Cardiff.

The Pilot Simard, declared that he boarded the vessel at Quebec and proceeded without incident, steering the usual courses, and that upon passing Green Island on an east northeast compass course on which he allowed three degrees westerly deviation, he estimates that at 8.05 p.m., on July 14 he passed Bic Island, whose light was distinctly visible at a distance of three miles, and that upon bringing Bic Island abeam the course was altered to east by south, by compass, or, east three-quarters south magnetic, after allowance being made for the three degrees deviation. Although there seemed to be a haze over the land, it was clear surrounding the ship and the vessel proceeded at her full speed of ten knots on an east three-quarters south magnetic course. It is estimated that as it was the last of the ebb and the consequent ineffectual current that the vessel traversed 15 miles between 8.05 and 9.30, but after the pilot had proceeded a supposedly sufficient distance from Bic without discerning the Father Point Light, he ordered a cast of the lead, which was taken and 12 fathoms found. The pilot relied absolutely upon this single cast and proceeded on his course at full speed, but not many minutes elapsed before his ship took the ground, gliding, it would appear, on to a soft bottom without apparent tremor. The pilot held unwaveringly to the belief that Bic Island was three miles distant when abeam, and that he steered precisely the same

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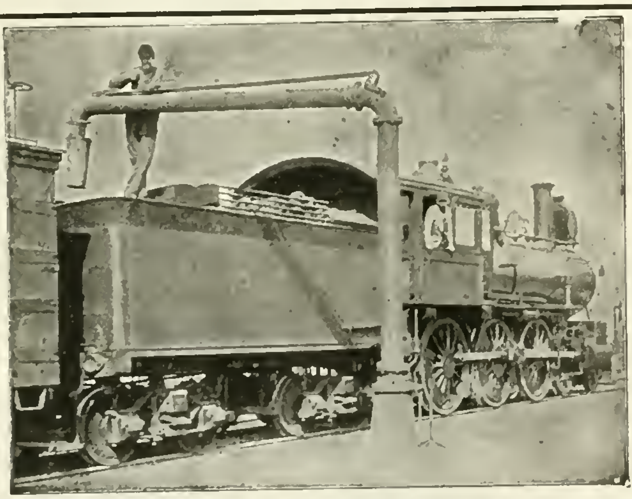

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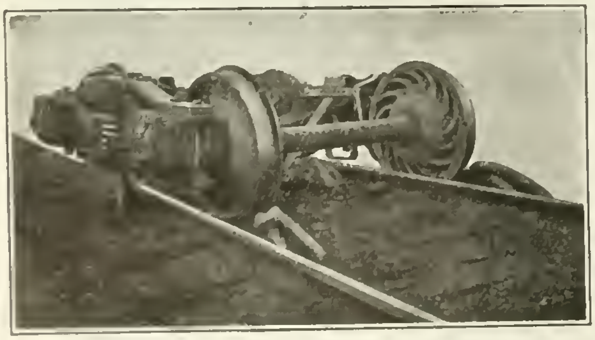

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course on this occasion as has been his custom for years, and that the vessel must have gone on an unchartered shoal.

Captain Eyers deposed that he was on deck when the vessel passed Green Island and Bic Island was passed at a distance of from three to three and one half miles and that the usual course of east three-quarters south, magnetic, was steered. He corroborated the pilot's testimony regarding the weather conditions, and declared that the light and variable wind was of insufficient strength to affect the vessel's course, and that upon failing to discern the Father Point light, as expected, the third officer was instructed to take a cast of the lead and that 12 fathoms were found.

The third officer, A. Bingham, declared that he had been acting in this capacity on Carrogan Head for nine months and that the courses given by the pilot had been accurately steered, that he had endeavored to put into effect the instructions given by the master to take cross and four point bearings of points of land, but on both occasions his attempts were frustrated by the course being changed. The ship was supplied with three compasses, one of which was in the wheelhouse, another on top of it, and another on the bridge. The cost of the lead which he took recorded 12 fathoms and the ship, according to his calculation, took the ground at 9.47 and was still fast when his watch terminated at 12.

The court finds that the pilot's method of placing absolute reliance upon former courses steered, without repeated verification on each particular voyage, cannot be accepted as safe navigation. The Father Point light being usually visible for 15 miles, it is held that when it was not discerned after passing Bic Island, the estimated distance of which was placed by usual observation alone at three miles, that the speed of the vessel should have been reduced and a chain of soundings taken to ascertain its position, instead of relying absolutely upon a single cast of the lead. The court considers that the pilot committed an error in judgment, but owing to his previous clean record, it confines itself to issue a warning to him to exercise more discretion in future, and to inform him that it is his duty upon passing points of land and lights to verify the position of his ship and not rely absolutely upon previous courses steered, and a single cast of the lead as he did in this particular instance. The master and third officer are exonerated, but the master is advised that for the safe navigation of the vessel, he should insist upon frequent soundings being taken, as it requires a chain of soundings to establish the position of a ship with accuracy.

Stranding of the s.s. Belcarra.

Following is a summary of the judgment of Justice Martin, concurred in by Capts. Reed and Collington, delivered at Victoria, B.C., recently, regarding the stranding of the s.s. Belcarra, off Dempsey's Camp in Agamemnon channel, Sept. 17, 1910: The court is satisfied, after hearing the explanation of the master, J. E. Fulton, that the customary light on the float at the camp was not burning, and that he was deceived in making landing by mistaking another light further inland, and no blame should be attached to him in this respect. In the course of the evidence, however, it became apparent that though the vessel had shortly before undergone her annual inspection, her compass was sluggish, and from want of proper compensation, unreliable. A new compass had been taken from another vessel, but its hand had not been placed in position, owing to lack of necessary fittings, nor had it been adjusted to local conditions on the vessel, and therefore the master was entitled to disregard it. This does not, however, relieve the owners, the Sechelt Steamship Co., from their duty to instal and keep adjusted a proper compass, and had the accident been caused by their negligence in this respect their responsibility would have been a grave one. As to the navigation of the vessel, the master admitted in evidence that he was sailing through the narrow channel, averaging a mile in width, at seven knots, the vessel's full speed, in a dense fog. This was clearly a violation of art. 16, and the master being obviously guilty of reckless navigation is censured.

Fuel Oil on Canadian Pacific Railway B.C. Coast Steamships.

After very careful consideration of the subject during last year, the C.P.R. management decided to equip a few of its vessels on the British Columbia coast, for the purpose of testing the efficiency of oil as compared with coal for fuel. Before doing this the various aspects of the question, as to speed, efficiency, supply and cost, were discussed, and the result of this inquiry, together with the experience of others, indicated clearly a decided advantage in the use of oil.

The first vessel to be equipped was the Princess May, which was undergoing extensive repairs. While the reports were being made two oil tight bulkheads were erected in the hull, these bulkheads running from side to side of the ship. Two fore and aft divisions were placed in compartment form, thus giving three complete and independent oil tanks. Great care was exercised in the execution of the work, as it is found more difficult to make steel work tight for oil than for water. The work was done by the B.C. Marine Railways Co., and has proved an entire success.

The Princess May has three boilers, with three furnaces each. These furnaces were fitted with the Cyclone burner. The principle of the system is an extension front on the furnaces suggestive of the old-time Dutch oven effect, and each front is fitted with a burner, the oil being atomized by a steam jet, and the form of the jet is such as to set up centrifugal action, thus breaking up the oil into small particles. It distributes the oil and therefore the flame, following the corrugated furnace in circular form, thus utilizing the entire surface, bottom and all.

The oil used, in order to comply with the Government requirements, is very heavy, and before passing through the burner, is pumped through a heater, raising the temperature to about 160 degrees. This liquifies the oil, and allows a thorough atomization, and with a careful adjustment of the admission of air, the fires burn with a very clear, bright flame, and the boilers steam freely.

In former years, when burning coal, this vessel was unable to make the desired speed at all times. There were losses through cleaning of fires and the handling of ashes, and on a voyage where tides form such an important feature, due to the necessity of passing through certain channels at certain stages of the tide, if the vessel fails to catch the tide, it becomes necessary to anchor, and thus lose still further time. It will therefore be readily seen how important it is to be able to secure the speed when called for, and this advantage has been gained in the Princess May by the use of fuel oil. It is now found that she can maintain an average speed with two boilers, just about equal to what she had before with three boilers burning coal.

One of the great advantages in the use of oil is the steady steam throughout the watch, and in fact from day to day. With coal it is up and down, and the operation of cleaning fires has an injurious effect on the boilers, while with oil there is no cleaning of fires, and the temperature remains the same at all times.

The company's vessel, Princess Charlottee, has also been fitted for oil, the fuel being carried in her double bottom, no special tanks being required. She has six boilers with three furnaces in each. They have all been fitted with Cyclone burners, and this vessel is showing very good results.

It is found that 3.75 barrels of oil will do the work of one ton of Vancouver Island coal.

One of the great advantages in the use of oil is its cleanliness and the great saving in labor. No coal trimmers are required, no gangs of men to put the coal on board; or the ashes overboard, the number of firemen is very much reduced, and their work is now comparatively easy. The decks are not covered with cinders and smut, and the time required for taking fuel on board each day is more than cut in two.

The company has constructed a large tank in Vancouver with a capacity of 55,000 barrels of oil. There has been placed near the wharf another tank of 1,000 barrels. The oil is transferred from the large tank to the smaller one by means of a steam pump, and from the smaller one direct to the vessel's tanks by an electric driven pump of sufficient capacity to deliver about 1,000 barrels an hour on board.

The company's officers are very much pleased with the results so far, and there is little doubt that the greater number of the company's vessels on the coast will soon be fitted for this fuel.

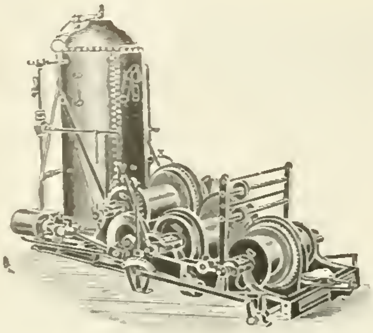
We are indebted for the foregoing very interesting article to Sir William Whyte, at whose request it was prepared by Capt. J. W. Troup, Manager, B. C. Coast Service, C.P.R., Victoria

Obstruction by Tows on the St. Lawrence River.

Acting upon a complaint made by the Shipping Federation of Canada, the Department of Marine ordered that an enquiry be conducted as to the alleged misconduct of the master of the Alaska, who, it was claimed, shaped a course with a tow of 20 barges on Aug. 21, which barred the channel to the extent of compelling the pilot of the s.s. Ionian to reverse and detain his vessel, thus averting the collision which seemed imminent. The investigation was conducted in Montreal Sept. 19, by Capt. L. A. Demers, Dominion Wreck Commissioner, with L. Z. Bouille, a member of the Pilotage Association of Montreal, as assessor.

Capt. Eastway, of the Ionian declared that upon hearing the telegraph rung astern, he hastened to the deck and observed that a tow was strung out from the north to south intersecting the channel ahead of his ship, and that although her headway was being gradually diminished with her engines full astern, the Ionian nevertheless approached to within 50 feet of the second last barge in the tow, and a collision was averted through the prompt action of the pilot and the power of the vessel's twin screws.

Pilot T. Hamelin declared that when in the vicinity of Vercheres, the weather being clear with a light south west breeze, he perceived a tug with a tow, while considerably to the north-



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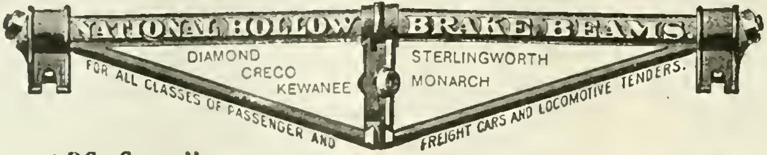
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ward of the latter he noticed a barge with full set sail coming down. He perceived that the tug, which was recognized as the Alaska, the property of the Sincennes-McNaughton Co., was crossing with its tow from north to south, or from the Ionian's starboard to port bow, without signalling notification of such action, the progress of the Ionian being so obstructed that a collision seemed imminent, whereupon the witness promptly resorted to the only alternative of reversing the engines, but despite this the tow of 20 barges and one schooner was of such length that the Ionian's headway was only lost when she had approached to within 50 feet of the second last barge.

Capt. C. Lavalee, of the Alaska, deposed that while proceeding from Sorel to Montreal with a tow whose length he estimated at 1,400 feet, he observed a sail barge with the wind slightly on her port quarter, drifting towards him, and that in order to keep clear he altered his course to the southward of the channel, without however signalling his

LIST OF STEAM VESSELS REGISTERED IN CANADA DURING AUG. AND SEPT., 1911.

Name	No.	Where and When Built.	Engines, etc.	Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
Adjie	130,329	Kingston, Ont., 1911	Screw 5 n. h. p.	45.0	8.3	3.9	17	11	Kingston, Ont.	J. H. Davis, Kingston, Ont.
Albert C.	126,855	Three Rivers, Que., 1911	" 3 "	43.5	12.0	4.2	17	10	Sorel, Que.	J. D. Chenard, Berthierville, Que.
Andante	130,745	Vancouver, B.C., 1911.	" 1 "	31.6	9.1	4.2	10	7	Vancouver, B.C	G. B. Ehrenborg, Vancouver, B.C.
Beulah W.	130,726	Lunenburg, N.S., 1905.	" 1 "	40.3	10.2	5.2	12	11	Lunenburg, N.S.	C. Wilson et al Tancook, N.S.
Capt. Hemans	130,330	Buffalo, N.Y., 1902	" 2½ "	50.5	10.6	3.8	35	22	Kingston, Ont.	M. B. Paisley, Ottawa, Ont.
Choctaw	130,234	Collingwood, Ont., 1911	" 6½ "	75.0	16.3	7.7	53	36	Port Stanley, Ont.	C. F. Stanton and P. L. Glover, Port Stanley, Ont
Dalhousie City	130,312	" " "	" 115½ "	199.8	37.0	20.7	1256	750	Toronto	Mackenzie Mann & Co., Toronto
Damara	129,494	Linthouse, Scotland, 1910	" 425 "	401.8	52.2	27.3	1988	3219	Vancouver, B.C.	California Steamship Co., Vancouver, B.C.
Delemon Le Blanc	130.621	Wedgeport, N.S., 1911.	" 1 "	37.6	10.7	4.6	10	9	Yarmouth, N.S	J. R. LeBlanc, Wedgeport, N.S.
Delilah C	130,532	Bayonne, N.J., 1907	" 3 "	56.5	10.1	4.4	23	16	Montreal	S. Carsley, Montreal
Denman	130,708	Steveston, B.C., 1911	" 1 "	35.8	9 0	4 0	10	7	Vancouver, B.C	R. Kawmara, Denman Island, B.C.
Elco	130,707	Castlegar, B.C., 1911	" 20 "	84.8	16.5	5.9	55	30	" "	Edgewood Lumber Co., Castlegar, B.C.
Geronia	111,964	Collingwood, Ont., 1911	" 184 "	219 6	42.0	10 4	2105	1469	Picton, Ont	Ontario & Quebec Navigation Co., Picton, Ont.
Governor Carleton	130,631	Saunderstown, R.I., 1907	" 53 "	140.0	39.2	12.0	582	395	St. John, N.B.	City of St. John, N.B.
Hesquiat	130,747	Vancouver, B.C., 1911	" 1 "	26.5	8.6	3.2	7	5	Vancouver, B.C.	W. W. Monnie, Vancouver, B.C.
Hippolyta	126,-10	Port Clyde, N.S., 1911	" 3 "	54.0	12.0	4 0	15	13	Yarmouth, N.S.	C. J. O'Hanley, Yarmouth, N.S.
Improver	130,744	Seattle, Wash., 1910	" 2½ "	40.5	12.0	4.8	20	13	Vancouver, B.C	P. P. Fewings et al, Vancouver, B.C.
Irene II.	130,533	Brockville, Ont., 1911	" 3 "	34.0	4.8	2.5	3	2	Montreal	R. J. Hopper, Westmount, Que.
James S. Gregory	130,632	St. John, N.B., 1911	" 14 "	58.2	16.2	7.3	63	36	St. John, N B.	J. S. Gregory, St. John, N.B.
Kyrielle	130,699	Port Blakeley, Wash., 1893.	" ½ "	38.2	12.9	6.1	11	10	Vancouver, B.C.	F. G. T. Lucas, Vancouver, B.C.
Miawa	126,960	Victoria, B.C., 1911	" 3¼ "	48.0	12.6	5.8	25	15	Victoria, B.C.	W. S. Chambers, Victoria, B.C.
Narada	130,603	Burton, Wash., 1910	" 1 "	29.6	8.0	4.0	7	6	" "	M. B. Jackson, Victoria, B.C.
Nowitka	130,604	Golden, B.C., 1911.	" 4 "	80.5	19.0	3.6	113	62	" "	Columbia River Lumber Co., Golden. B C
Ott	130,380	Hastings, Ont., 1910	" 2½ "	31.0	8.2	3.0	9	6	Peterboro, Ont.	A. Scrivers, Hastings, Ont.
O. U. Buffalo.	130,651	Buctouche, N B., 1911	" 2½ "	34.6	10.0	5.0	10	6	Chatham, N B.	J. D. Irving, Buctouche, N.B.
P. D. Q.	130,703	Vancouver, B.C., 1911	" 1 "	22.8	6.6	3.0	3	2	Vancouver, B.C	R. C. Spinks, Vancouver, B.C.
Permyn	130,700	" "	" 1 "	34.0	8.4	4.0	8	5	" "	P. L. Hogg, Vancouver, B.C.
Prince John	129,472	Bowling, Scotland, 1910	" 103 "	185.3	29.6	10.9	905	540	Prince Rupert, B.C.	Grand Trunk Pacific Development Co., Montreal
Q. J. T.	130,706	United States, 1907	" 2½ "	35.0	9.1	3.0	12	8	Vancouver, B.C	P. J. Trotter, Vancouver, B.C.
R. H. A.	130,488	Vancouver, B.C., 1911	" 3½ "	49.6	12.0	3.9	19	11	" "	St. Mungo Canning Co , New Westminster, B.C
R. Paul	126,854	Sorel, Que., 1911	" 2 "	80.0	18.0	4.6	61	28	Sorel, Que.	R. Paul, Montreal
Reef	130,709	Utsalady, Wash., 1897	" 2 "	39.6	13.1	4.7	16	11	Vancouver, B.C.	W. Johnston, Vancouver, B.C.
Saguenay	130,526	Govan, Scotland, 1911.	" 177 "	275.3	40.0	14.9	2777	1864	Montreal	Richelieu & Ontario Navigation Co., Montreal
Sal Lal	130,710	Steveston, B.C., 1911	" 1½ "	44.0	13.0	5.9	26	17	Vancouver, B.C.	H. C. Nixon, Denman Island, B C.
Sea Bee	130,704	Vancouver, B.C., 1911	" 2 "	34.4	9.4	6.0	13	9	" "	C. B. B. Jack, Vancouver, B C.
Seal	129,556	Old Kirkpatrick, Scotland, 1911	" 85 "	175.0	22.6	12.3	608	277	Windsor, N.S.	J. A. Farquhar, Halifax, N.S.
Sealer	130,724	Tancook, N.S., 1908	" 1 "	40.4	10.4	5.4	12	11	Lunenburg, N.S.	A. Levy, Cross Island, N S.
Seldomin	130,652	Port Hawkesbury, N.S., 1911	" 4 "	53.7	13.2	7.0	37	29	Chatham, N.B.	A. Loggie, M.O., Dalhousie, N.B.
Sir Hugh Allan	130,534	Barrow, Eng., 1911	" 196 "	130.0	26.6	12.1	354	10	Montreal	Montreal Harbor Commissioners
Skidoo	130,340	Point Sapin, N.B., 1909	" 1 "	35.5	9.8	5.2	11	11	Chatham, N.B.	H. A. Murdock, Loggieville, N B.
Soya	130,487	Steveston, B.C., 1911	" 1 "	33.2	8 0	3.4	6	4	New Westminster, BC	Y. Nishii, Steveston, B.C.
Spes	130,531	Lachine, Que., 1909	" 1 "	24.5	5.4	2.2	2	2	Montreal	J. A. Bonnet, Montreal
Stanley Byers	126,870	Owen Sound, Ont., 1901	" 1½ "	30 0	8.4	3.2	9	6	Sault St. Marie, Ont.	R. Byers, Spanish River, Ont.
Talapus	130,741	Vancouver, B.C., 1911	" 1 "	40.0	9.0	5.0	13	9	Vancouver, B.C	H. Simmons, Vancouver, B.C.
Ta-Meri	130,601	" 1907	" 1 "	28 5	9.8	3.8	6	4	Victoria, B.C.	G. V. Cuppage, Victoria, B.C.
V. S. R	130,377	Chatham, Ont., 1907.	" 1 "	20.0	4.8	2.0	1	1	Peterboro, Ont.	C. Rutherford, Peterboro, Ont.
Verada	130,605	Seattle, Wash., 1910	" ¼ "	34.0	11.6	6.6	12	8	Victoria, B.C.	I. Mair Hill Island, B C.
Water Sprite, The	130,525	Dorval, Que., 1911.	" 1¼ "	31.5	6.5	2.5	4	8	Montreal	G. A. Mooney, Montreal
Wigwam	130,743	Whatcom, Wash., 1903	" 4 "	45 6	10 4	4.4	18	9	Vancouver, B.C.	F. H. Chappell, Vancouver, B.C.
William G. Fox	130,311	Buffalo, N.Y , 1875	" 8½ "	61.2	14.6	6.6	39	20	Toronto	Randolph Macdonald Co., Toronto
Zingari	130,530	Montreal, 1906.	" 1 "	31.7	6.8	2.0	3	2	Montreal	F. A Whitehead, Montreal

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA DURING AUG. AND SEPT., 1911.

Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners
Bessie A.P.	130,679	Blandford, N.S., 1910	Schr.	40.4	10.5	5.3	11	Lunenburg, N.S.	M. Publicover, Blandford, N.S.
Bridget Dunphy	130,368	South Ingonish, N.S., 1911	"	39.0	12.0	6.0	11	Sydney, N.S.	J. W. Dunphy, South Ingonish, N.S.
C. A. Waters	130,680	Lunenburg, N.S., 1906	"	39.4	10.2	5.2	11	Lunenburg, N.S.	C. R Walters, Middle La Have, N.S.
Clarence Trahan.	126,809	Metghan, N.S., 1911	"	47.9	16.2	7.0	25	Yarmouth, N.S.	G. M. Trahan, Meteghan, N.S.
Dorothy G. Snow.	126,879	Shelburne, N.S., 1911.	"	98.0	23.0	9.8	98	Digby, N.S.	J. E. Snow, Digby, N.S.
F. A. George	112,354	Tonawanda, N.Y., 1874	Barge	204.6	35.2	14.6	751	Brockville, Ont.	A. Windling, Brockville, Ont.
Fort Alexander.	130,273	Selkirk, Man., 1911	"	142.0	30.0	7.6	316	Winnipeg	Northwest Navigation Co., Winnipeg
George E. H.	130,723	Tancook, N.S., 1905	Schr.	39.8	9.9	5.3	10	Lunenburg, N.S.	G. Heisler, Tancook, N.S.
Herb Curwin	130,663	Richibucto, N.B., 1911.	"	32.0	10.5	4.4	10	Richibucto, N.B.	J. Curwin, Richibucto, N.B.
Ivetta	130,864	Dingwall, N.S., 1911	"	50.2	12.8	5.3	17	Sydney, N.S.	W. O'Brien, Victoria, B.C.
J. C. No. 9	130,702	New Westminster, B.C., 1911.	Scow	60.2	26.2	6.3	91	Vancouver, B.C	J. Crane, New Westminster, B.C.
J. C. No, 11	130,679	" "	"	65.2	26.0	6.4	108	" "	" " "
Jardineville	130,662	Rexton, N.B., 1908	Schr.	34.0	11.0	4.6	10	Richibucto, N.B.	A. J. Arsenean, Jardineville, N.B.
Julia Murphy	126,869	Shelburne, N.S., 1911	"	69.8	24.0	5.5	103	Sault St. Marie, Ont.	H. R Swim, M.O., Lockeport, N.S.
Julie Opp	126,670	Richards Landing, Ont., 1911	Dredge	55.5	17.8	7.9	38	Shelburne, N.S.	J. L Kennedy, Garden River, Ont.
Lottie M. Blanche	130,688	Tancook, N.S., 1911	Schr.	40.8	10.1	5.4	12	Lunenburg, N.S.	D. Moland, M.O , East Chester, N.S.
M. T. Williams	130,366	Ingonish, N.S., 1911.	"	38.0	12.3	7.4	16	Sydney, N.S.	W. C. Williams, Ingonish, N.S.
Mary E. Burton	130,365	Aspy Bay, N.S., 1910	"	56.7	18.0	6.4	47	" "	A. Burton, Aspy Bay, N.S.
P. R. & G. Co. 17	130,602	Victoria, B.C., 1911	Barge	88.8	30.1	8.0	174	Victoria, B.C.	Producers Rock and Gravel Co., Victoria, B.C.
Paul V	126,580	Pleasant Bay, N.S., 1911	Schr.	43.8	12.2	6.7	14	Hawkesbury, Ont.	P. V. Boudreau, Cheticamp, N.S.
Powell River No.1	130,701	New Westminster, B.C , 1911.	Scow	55.8	25.8	6.8	105	Vancouver, B.C.	H. Stead, New Westminister, B.C.
Rosanna T.	130,689	Lunenburg, N.S., 1906	Schr.	42.6	10.6	5.5	11	Lunenburg, N.S.	I. Tanner, Eastern Points, N.S.
T.H. 28	130,705	New Westminster, B:C	Scow	61.3	26.0	6.9	102	Vancouver, B.C.	T. Y. Hebron, Vancouver. B.C.
Tacoma	130,722	Tancook, N.S., 1906	Schr.	40.2	10.0	5.2	11	Lunenburg, N.S.	A Wilson, Jr., Tancook, N S.
Transfer No. 3	130,606	Esquimalt, B.C., 1911	Barge	250.0	42.0	10.8	[illegible]	Victoria, B.C.	C. P. R Co., Montreal
Vina Evelyn	130,423	Swans Island, Me., 1894	Sloop	37.6	13.6	6.6	14	St. Andrews, N.B.	F. M. Calder, Campobello, N.B
William Thomas	130,367	Ingonish, N.S., 1911	Schr.	39.4	12 5	7.0	14	Sydney, N.S.	P. Doyle, Ingonish, N.S.
Winnifred Marr	180,721	Tancook, N.S., 1911	"	44.8	12.6	6.6	17	Lunenburg, N.S.	M. Meagher, Canso N.S

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intention, and that the tow in consequence involuntarily impeded the progress of the Ionian. He admitted that it is difficult to control a tow of such length and that while the schooner was being steered the 20 barges were left unattended.

The court finds that the statement of the master of the Alaska on the one hand and the pilot and master of the Ionian on the other as to the direction of the wind are contradictory, and if the court accepts the statement of the pilot of the Ionian, that the wind was south west, which it does, it precludes the necessity on the part of the Alaska of altering her course so materially to southward to avoid the sail barge which it has been averred was at a safe distance to the north of the tow. But even admitting that such a course was essential, it is held that the master of the Alaska should have complied with the rule of the road and sounded two blasts to indicate his intention, and for his failure in this respect and consequent placing of valuable property in jeopardy, he is severely censured by the court and is warned that should he reappear following a similar complaint his certificate will be dealt with.

The court deprecates the system which permits of tows of ungovernable lengths to ply the narrow stretches of the River St. Lawrence, as they constitute a menace to navigation, and as the shipping interests have frequently found cause to complain heretofore, the court accepts it as a duty to point out to the proper authorities the necessity of enacting laws and regulations limiting the length of tows, thereby minimizing the danger of casualty, prevailing under the present unrestricted conditions.

Hero-Chieftain III. Collision.

Following is a summary of the judgment, recently delivered, as a result of the enquiry by L. A. Demers, Wreck Commissioner, assisted by Capts. A. Reid and F. Nash and W. Gauthier, as assessors, into the cause of the collision between the steamboats Hero and Chieftain III., in the River St. Lawrence, near St. Antoine, Que., Aug. 20, resulting in the foundering of Chieftain III., and the loss of four lives.

The court finds that reliance cannot be placed on the calculations made by the pilot on Chieftain III., who, by his own admission, is ignorant of the most elementary rules of navigation, and accepts the corroborated testimony of the Hero's witnesses. The court comes to the conclusion that an improper lookout was kept on Chieftain III., and that the pilot, in porting, while his vessel was green to green, committed a flagrant transgression of the rules of the road. As the pilot holds neither a certificate nor a pilot's license, it is beyond the court's jurisdiction to inflict a penalty for his gross and unpardonable ignorance, but he is held to be in default and responsible for the casualty. The engagement of Onesime Hamelin, as pilot, was effected contrary to the bylaw which permits the master or member of a crew to pilot an exempted vessel, but exacts that if a pilot be engaged, he must possess a license. Therefore the owners of Chieftain III., through whose instrumentality this engagement was effected, are held to be indirectly responsible, while to the Chieftain's mate, who was on watch with the pilot, no blame can be attached, as being without certificate, he is viewed in the light of a deck hand and therefore irresponsible. The captain of the Chieftain III., acting in accordance with the faulty system endorsed by owners of this class of vessel, for the master to keep watch and watch, nevertheless lacked an adequate conception of his responsibilities in leaving the fate of his vessel to such incompetent hands. Furthermore, the persons he carried in addition to his crew, must be considered as passengers, and as the certificate he held precluded the carrying of passengers, he violated the Shipping Act, and the court being of opinion that he is indirectly responsible for the disaster, suspends his certificate as master for two years from Aug. 30, and in the meantime grants him a certificate as mate for a tug boat on minor waters. Regarding the pilot of the Hero and the second officer, they are exonerated from all blame, but are advised that when reversing they should indicate such action by sounding the regulation blasts. The captain of the Hero is also exonerated, but the court cannot condone his indifference subsequent to the casualty. He should have anchored his vessel and made vigorous search for those known to be in jeopardy, but he ignored the common claim of humanity and is severely censured for his action, which will be reported to the Norwegian authorities. It is ordered that the costs of the investigation be paid by the owners of Chieftain III., the Calvin Co., Kingston, Ont. The Hero is owned by Kjaer and Isdahl, Bergen, Norway, and is under charter to the Intercolonial Coal Mining Co., carrying coal between Sydney, N.S., and Montreal.

Bonds on Steamship Yorkton.

The Mathews Steamship Co., Ltd., has issued $55,000 first mortgage 6% gold bonds due July 1, 1921, secured by a first mortgage on the s.s. Yorkton, which was built last year at Sunderland, Eng. Following are extracts from the prospectus, issued by Æmilius Jarvis & Co., Toronto:—

The Yorkton is constructed entirely of steel according to the designs and specifications of the owners, based on long experience in the shipping trade on the Great Lakes. She is classed A1, in Lloyds Inland Register and is 250 ft. long, 42½ ft. beam, and 18½ ft. deep. She is designed to have the greatest carrying capacity (85,000 bush.) of any steamer capable of passing through the St. Lawrence canals. On the Upper Lakes her carrying capacity is 100,000 bush. She is of the latest design in every respect, is lighted with electricity, heated by steam, and has steam steering gear. She has a double bottom, and is double decked, and cost in cash over $115,000. The $55,000 bonds offered constitute the entire bonded debt of the steamship, and in addition to being secured by a first mortgage on the steamship, they are an obligation of the Mathews Steamship Co., Limited, in its entirety. Under the mortgage protecting the bonds, the company is obligated to keep the steamer and its appurtenances covered by the mortgage amply insured against loss or damage by fire, and against all marine risks and disasters, all collision liability, general and particular average, and against liability for injuries to persons.

The company's statements show that from 1906 to 1910 their boats Edmonton and Haddington averaged annual net earnings of $25,938.50, and that in 1910 their boats earned $26,458.65 net. This year to Sept. 7, they earned $18,587.63 net, while the Yorkton (operating only two months after completion and arrival from England) earned $2,631.77 net. This shows total net earnings of $21,218.43 to September, and with the three busiest months to be added, the company estimates over $39,000 net earnings for 1911. All earnings mentioned are net after paying insurance. The company's statement shows assets of $288,091.10 as at Jan. 31, 1911, not including the Yorkton, valued at $130,000. Adding this the assets total $418,091.10.

Canadian Notices to Mariners.

The Department of Marine has issued the following:—

101. Sept. 20. 273. Ontario, Lake Ontario, Bay of Quinte, Minnie Blakely shoal, gas buoy established. 274. Ontario, Lake Erie, Port Burwell, bell buoy discontinued. 275. Ontario, St. Joseph channel, Wislon channel, Chicora shoal and middle ground, buoys discontinued. 276. Ontario, Lake Superior, Porphyry island, Porphyry point, light improved. 277. Ontario, Lake Nipissing, South bay, South river mouth, change in position of light. 278. United States of America, Lake Huron, Detour passage, change in characteristic of submarine signal. 279. United States of America, Lake Superior, Two Harbors light station, characteristic of light changed.

102. Sept. 22. 280. New Brunswick, Bay of Fundy, Grand Manan island, Flag cove, Net Rock ledges, bell buoy established. 281. New Brunswick, south coast, Bay of Fundy, off Negro Head, bell buoy established. 282. Nova Scotia, Bay of Fundy, Long island, Petit passage, Boars head, hand fog alarm at light station. 283. Nova Scotia, Cape Breton, Lower L'Ardoise, bell buoy established, hydrographic notes.

103. Sept. 28. 284. Nova Scotia, Bay of Fundy, Hall harbor, position of lighthouse. 285. Nova Scotia, south west coast Cape Sable, rock westward of. 286. Nova Scotia, Cape Breton, Lennox passage, Ouetique island lighthouse, character of illuminating apparatus. 287. Nova Scotia, Cabot strait, St. Paul island, permanent light. 288. Quebec, River St. Lawrence, Escoumains, light established on wharf. 289. Newfoundland, west coast, Ste. Genevieve bay, existence of shoals. 290. Newfoundland, west coast, Old Ferolle harbor approach, existence of shoals.

104. Oct. 3. Quebec, Chaleur Bay, Port Daniel West lighthouse, color of lantern. 292. Quebec, River St. Lawrence, ship channel between Quebec and Montreal, above St. Antoine, wreck marked by gas buoy. 293. Quebec, River St. Lawrence, Montreal harbor, buoys established.

105. Oct. 4. 294. Ontario, Lake Ontario, west end, Burlington channel front range lighthouse, hand fog horn for occasional use. 295. Ontario, Lake Erie, Long Point lighthouse to Port Rowan, telephone line. 296. Ontario, Lake Erie, Port Burwell, breakwater under construction, temporary light. 297. Ontario, Lake Superior, Thunder bay, Port Arthur, position of wireless telegraph station.

106. Oct. 12. 298. New Brunswick, south coast, Bay of Fundy, St. John harbor, off Negro point, change in position of gas buoy. 299. Nova Scotia, Bay of Fundy, Lurcher shoal, lightship replaced on her station. 300. Prince Edward Island, west coast, Miminegash, range lights increased in height. 301. Prince Edward Island, north coast, Savage harbor, change in position of front range light.

107. Oct. 16. 302. Nova Scotia, Cape Breton, Cape St. Lawrence lighthouse, lower light discontinued. 303. Nova Scotia, south coast, Little Liscomb harbor, Redman head, hand fog horn at light station. 304. Quebec, Gulf of St. Lawrence, Gaspe coast, Grand River wharf, hand fog bell at light station. 305 Quebec, Magdalen islands, House harbor entrance, change in character of buoy. 306. Quebec, Lake St. John, Ile au Belier, back range light.

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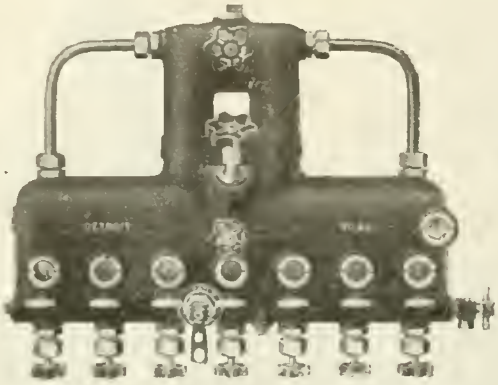

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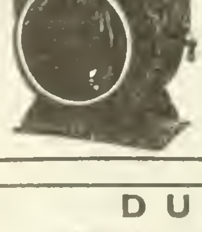

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Vessels Removed From the Register.

The following vessels were removed from the Canadian register during August and September, for the reasons assigned:—Steam— Amethyst, Montreal, 894 tons, stranded; Eliza Williams, Port Arthur, Ont., 34 tons, broken up; Kaministiquia, Port Arthur, Ont., 72 tons, burnt; Neptune, St. John, N.B., 48 tons, broken up; Norseman, Goderich, Ont., 400 tons, sold to United States; Sechelt, Vancouver, B.C., 71 tons, lost; Zoa H., Lunenburg, N.S., 16 tons, sold to foreigners. Sailing—Blue Wave, Parrsboro, N.S., 37 tons, stranded; Carib II., Shelburne, N.S., 195 tons, sold to foreigners; Confidence, Lunenburg, N.S., 35 tons, transferred to Newfoundland; Coryl, Parsboro, N.S., 59 tons, broken up; Frank, Charlottetown, P.E.I., 30 tons, sold to foreigners; Foster Rice, Annapolis Royal, N.S., 17 9tons, wrecked; Gaza, Parrsboro, N.S., 71 tons, broken up; General Laurie, Shelburne, N.S., 198 tons, transferred to Barbadoes; Georgie E., Weymouth, N.S., 95 tons, wrecked; Kohinoor, Charlottetown, P.E.I., 77 tons, wrecked; L'Etoile, Port Hawkesbury, N.S., 48 tons, wrecked; Lottie S., Shelburne, N.S., 42 tons, lost; M.D.S., Windsor, N.S., 190 tons, transferred to Newfoundland; Madona C., Magdalen Islands, 21 tons, sold to foreigners; Marion T., Weymouth, N.S. 30 tons, condemned; Olga, Parrsboro, N.S., 79 tons, broken up; Robert Kerr, New Westminster, B.C., 1 123 tons, wrecked; Rose, Quebec, Que., 79 tons, stranded; Rush Light, Sydney, N.S., 51 tons, broken up; Secret, Lunenburg, N.S., 76 tons, stranded; Stella, Arichat, N.S., 14 tons, broken up; Stranger, Lunenburg, N.S., 540 tons, transferred to Barbadoes; Tay, St. John, N.B., 125 tons, wrecked; W. N. Zwicker, Lunenburg, N.S., 398 tons, transferred to Barbadoes.

◆

Atlantic and Pacific Ocean Marine.

The Cunard Line s.s. Ausonia will be partially remodelled during the winter season, an additional deck being made, providing accommodation for a further 100 passengers.

The vessel which the Union Steamship Co., of New Zealand, is having built at Glasgow, Scotland, for the Canadian mail service, and which was launched recently, has been named Maunganui. She is 430 ft. long by 55 ft. beam.

G. M. Bosworth, Vice President, C.P.R. has denied that the C.P.R. will operate a line of steamships between Boston, Mass., and Rotterdam, Holland, in connection with the New York, New Haven and Hartford Ry., as reported in the daily press.

It is reported that the Cunard Line proposes to add two vessels to its Montreal-London service, in the spring of 1912. It is stated that the company will either build vessels for the service, or transfer two of its vessels from the Mediterranean route.

Reports brought to Vancouver by the Harrison Line s.s. Crown of Castile, state that the company is having built for the direct service between Glasgow and Vancouver two vessels to be named Crown of Toledo and Crown of Adalusia, each of about 10,000 tons gross.

The Donaldson Line s.s. Letitia, which is under construction at Glasgow, Scotland, will, it is expected, be ready for service between Glasgow and St. John in Feb., 1912. She will be 10,000 gross tons, and will have accommodation for about 275 second class and 1,000 third class passengers.

The Canadian Mexican Pacific Steamship Co. has chartered the s.s. Strathdene for its Mexican service, to replace the s.s. Henley, which has been released. She commences the new service in November. The s.s. Beckenham has also been chartered for this service, and will sail from Vancouver in December.

The C.P.R. s.s. Mount Temple was reported to have been damaged in collision with the s.s. Osterly at Tilbury, Eng., Oct. 16, after which she was docked at Millwall for examination and repairs. Montreal officials are reported to have stated, Oct. 18, that they had no report of such an accident, but if such a collision had taken place, the damage must have been slight.

Press reports state that arrangements have been made for the operation of a steamship line between Vancouver, Victoria, Seattle, San Francisco and Bristol, Eng. The line will use the vessels which have recently been managed by Evans, Coleman and Evans, Vancouver, and will be known as the Maple Leaf Line. The vessels chartered are the Harmattan, Oceania, Queen Alexandra and Queen Amelie.

The steamships which the C.P.R. recently ordered for its Trans-Pacific steamship service, one of which was illustrated in our last issue, will be named Empress of Asia and Empress of Russia. Their dimensions will be, length, 570 ft.; beam, 68 ft.; moulded depth, 38 ft.; tonnage, about 15,000 gross. They will be equipped with two steel quadruple turbines, and the price of each, delivered and complete, will be £500,000.

The Allan Line has invited tenders for the building of two steamships, each about 520 ft. long, equipped with twin screw reciprocating engines, for a speed of 18 knots an hour. Special attention will, it is said, be given to first and second class passenger accommodation. When completed, early in 1913, it is said that the new vessels will replace two at present on the Liverpool route which will be transferred to the Glasgow route.

Salvage operations have been continued on the C.P.R. s.s. Empress of China, which was recently wrecked off the Japanese coast. It is stated that a considerable amount of rock is to be blasted, which, if successful in clearing the after hold, will be followed by an attempt to raise her by means of compressed air. It is feared that, on account of bad weather, and the position in which she is lying, the attempt will be unsuccessful, and that she will be a total loss.

Manchester Liners, Ltd., operating vessels between Montreal and Manchester, Eng., with which Lord Furness, of Furness, Withy and Co., and the Richelieu and Ontario Navigation Co., is intimately connected, reports a trading profit of £57,000 for the year ended June 30. This is an increase of £19,600 over the previous year. A full year's dividend of 5% was paid on the preference shares, thus clearing off accumulations of dividend to Dec. 31, 1905. The report states that should the present improvement in shipping be maintained, the regular payment of preference interest will be resumed.

C. M. Hays, President, G.T.R., and G.T.P.R., on his recent return to Montreal, after a trip over the system to the Pacific coast, is reported to have said that in the near future, not only will the G.T.P.R. have a steamship line operating to the Orient, but also to Great Britain, from the Pacific coast, via the Panama canal. The vessels, it is said, will be built in England, under the supervision of the G.T.R. board of directors, and they will be specially designed for grain carrying by the Panama route. The proposals in connection with this scheme involve the erection of grain elevators at Prince Rupert and other points and considerable harbor extensions.

Referring to the much-talked-of all red route, between Great Britain and Canada, a recent press dispatch from England states that the project, which, among four other ones, appears to have most chance of success, is one in which the Canadian Northern Steamships, Ltd., and C. T. Bowring & Co., are interested. The former operates the Royal Line from Bristol, and the latter runs steamships between Liverpool, New York, Halifax, N.S., and St. John's, Nfld. An essential part of the scheme is the operation of car ferries between Holyhead Wales, and Kingstown, Ireland, but so far as this is concerned, the great difficulty would be the difference in gauge between the English and Irish railways, which are 4 ft. 8½ ins. and 5 ft. 3 ins., respectively.

G. W. Stephens, Chairman, Montreal Harbor Commission, has issued a pamphlet giving arguments in connection with the rates of insurance on vessels operating on the St. Lawrence route. It is shown that the rates are based on conditions which existed in 1900 before the channel was improved by widening to 30 ft., and the replacement of the old signals and oil lights by submarine bell stations, telephones, wireless telegraph, acetylene gas installations and modern lighting equipment, which, with the remodelled pilotage system has brought the route up to a high state of efficiency. The floating dry dock, under construction, is also dwelt upon, and the fact that today, vessels of 15,000 tons can safely navigate the channel by day or night, whereas ten years ago, only vessels of about 5,000 tons could safely undertake the journey to Montreal. He claims that in view of what has been accomplished, a reasonable reduction of marine insurance rates is not only possible, but justified by the physical condition of the route and the actual loss experienced in the business. He also proposes that the British North America clause in the policies be removed. This clause excludes all vessels except regular lines from trading with Canada, without paying an extra premium for so doing, and acts as a restriction so powerful that no outside tonnage can be chartered for single voyages, as the extra insurance premium demanded is prohibitive.

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Maritime Provinces and Newfoundland.

The Newfoundland Government has appointed a commission of five members to supervise the pilots of the port of St. John's. The number of pilots has been fixed at 12.

The Newfoundland Marine Insurance Co. has been incorporated by the Newfoundland Legislature with a capital of $150,000 and office at St. John's, Nfld.

Smith's Fish Market, Ltd., has been incorporated under the New Brunswick Companies Act, with a capital of $10,000 and office at St. John, N.B., to carry on a general wholesale and retail fish business and in connection therewith, to operate steam and other vessels, wharves, etc.

Press reports from St. John, N.B., state that the car ferry service, which the C.P.R. proposes to operate between St. John and Digby, N.S., will be taken in hand next year. It is said that plans have been prepared, and a site for the proposed dock has been looked over by C.P.R. officials.

The steamship Senlac Co.'s s.s. Senlac, managed by Wm. Thompson and Co., St. John, N.B., has been sold by auction for $7,500. She was built at St. John in 1904, and is screw driven by engine of 66 n.h.p. Her dimensions are: length 182.4 ft., breadth 33 ft., depth 16.1 ft., tonnage, 1,011 gross, 615 register.

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London, Paris, via Dover-Antwerp

Zeeland .. Nov. 4 | Kronland . Nov. 11
Lapland....Nov. 18 | Vaderland ..Nov. 25

White Star

New York—Queenstown—Liverpool

Adriatic ....Nov. 2 | Baltic ......Nov. 15
Cedric .....Nov. 9 | Celtic ......Nov. 23

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New York .Nov. 11 | Oceanic .....Nov. 25

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Application has been made to the New Brunswick Government for the incorporation of a company with the title of John McDonald, Jr., Ltd., to carry on a general produce and cold storage business, and in connection therewith, to operate ships, dredges and dredging equipment. The office will be at St. John. N.B., and the capital $20,000..

The harbor master at St. John's. Nfld., has given notice that owing to neglect by owners certain old schooners lying in the harbor are likely to sink and be a menace to navigation and an obstruction in the harbor, and that if no arrangement is made regarding them. they will be towed out to sea and sunk.

The Newfoundland Produce Co. is receiving a subsidy of $500 a round trip for a steamship service between St. John's and Change Island and other ports in the Fogo district, from the Newfoundland Government. The agreement. which is for 12 years, provides that 38 weekly trips between May 1 and the end of the season, each year.

The Marine Railway Dock Co., registered in St. John's, Nfld., with power to build a marine railway dock at Harbor Grace, has been granted a free site by the Government. By way of further aid, the Government covenants to pay the amount by which the annual net dividends shall be less than 5% on the actual paid up cash capital, for 15 years. the amount to be paid by the Government, in no case, to exceed $2.500 in any one year.

Province of Quebec Marine.

The steamboat Turret Bell has been libelled at the instance of G. T. Davie and Sons, Quebec, on a claim of $2,500 for necessaries and repairs.

The Dominion Public Works Department has awarded the contract for the construction of a wharf at Papineauville to T. and J. Moran, Arnprior, Ont.

G. W. Stephens, Chairman, Montreal Harbor Commission, addressed the McGill Canadian Club, Montreal, Oct. 16. on the port of Montreal, comparing it very favorably with any other port on the continent.

The statue of the late Hon. John Young. four times Chairman of the Montreal Board of Harbor Commissioners, and known as the father of the Port of Montreal, which has been erected in Custom House Square, Montreal, was unveiled by Earl Grey, Oct. 4.

F. W. Cowie, Chief Engineer of the Montreal Harbor Commission recently stated that the work on the construction of the new elevator is in such a condition that everything will probably be ready for operation in the spring. The completion of the concrete work has been somewhat delayed owing to the installation of extra machinery for driving the concrete piles, but it will be completed before frost interferes. and during the winter the interior work will be proceeded with.

Ontario and the Great Lakes.

The Dominion Public Works Department has awarded the contract for the lock work on the St. Peter's canal, to W. H. Weller. St. Catharines.

Polson Iron Works, Ltd., launched at Toronto, Oct. 7, a lifeboat of a novel design. It is claimed by the inventor, that it is fireproof, unsinkable and absolutely self-righting.

We are officially advised that the recent press reports, to the effect that Canadian Northern Ry. interests had purchased the Rideau Navigation Co. are incorrect.

The Merchants' Mutual Line steamboat, H. M. Pellatt, which grounded at Iroquois, Sept. 19, was released Oct. 6, and proceeded to Montreal under her own steam.

The Montreal Transportation Co.'s barge Winnipeg, which ran aground in the Rapid du Plat, recently, with 11,000 tons of coal, was released, Oct. 15, without damage.

B. R. Hepburn, M.P., President and General Manager, Ontario and Quebec Navigation Co., stated at Picton, Oct. 8, that a sister vessel to the Geronia would be built in about a year.

The Dominion Public Works Department has awarded the contract for the construction of a breakwater at Port Stanley, at a cost of $210,000 to M. J. Hogan, Port Colborne.

The Ontario and Quebec Navigation Co.'s s.s. Geronia, which had her machinery thoroughly overhauled, had a trial trip, Oct. 8, between Picton and Kingston, when she averaged 16 miles an hour.

The Canadian Northern Ry. has given a site for the erection of a sailors' institute at Port Arthur, Ont. The site has been granted on a 30 years lease, which is renewable. Building will be commenced in the spring.

The Canadian Lake Line steamboat Corunna, which ran ashore on Welcome Island, near Port Arthur, Oct. 6, was lightered and removed to the dry dock for examination and repairs. The damage both to cargo and vessel was slight.

The Inland Lines s.s. Emperor while anchoring in the Canadian canal at Sault Ste. Marie, Oct. 18, rode over her anchor, causing it to tear a hole in her bow, after which she sank, blocking the channel. She was released the next day, and, after temporary repairs were made, proceeded to Midland.

At a meeting of directors of the Richelieu and Ontario Navigation Co., in Montreal, Oct. 4, it was stated that there would in all probability be no change in the constitution of the Northern Navigation Co.'s board before that company's annual meeting, early next year, and it is possible, even then. that no changes will be made.

Coals Transportation Ltd., has been incorporated under the Dominion Companies Act, with a capital of $200,000 and office at Toronto, to operate steam and other vessels, and to carry on a general shipowning and shipping business. The incorporators are J. R. Corkery, J. M. Forgie, E. G. McMillan, H. Riley and W. B. Sturrup, Toronto.

The schooner Azov, laden with lumber, while bound for Sarnia. became waterlogged in Lake Huron, Oct. 24, and capsized near Point aux Barques. The crew escaped in one of the boats. She was owned by J. McDonald, Goderich, and was built at Wellington Square, Ont., in 1866, her dimensions being, length 108.4 ft., breadth 23.7 ft., depth 10 ft.; tonnage, 195 register.

The steam tug Gordon Gauthier, owned in Port Arthur, and which has been engaged in hauling supplies along the north shore for Canadian Northern Ry. construction, was burned at Port Arthur, Oct. 10. She was built at Wallaceburg in 1884. Her dimensions were, length 52.7 ft., breadth 13.9 ft., depth 6.4 ft.; tonnage, 26 gross, 8 register. She was equipped with engine of 24 n.h.p. driving a screw.

The steamboat Joliette, which was sunk some time ago in the St. Clair River, near Sarnia, is considered to be a menace to navigation. It was recently stated that the wreck would be dynamited, but owing to the proximity of the St. Clair tunnel, this is not considered likely. It is reported that the Marine Department has the matter in hand and will shortly call for tenders for the vessel's removal.

G. S. Wright, formerly master of the steamboat, D. A. Gordon, who was recently charged at Toronto, with having obtained his master's certificate by false pretences, and making fraudulent use of same, was acquitted Oct. 5. Judge Winchester expressed the opinion that the false representations, if any, were the result of a misconception of the meaning of the term, mate, as used in the regulations laid down by the Marine Department, and were not intended to deceive.

Sir Robert Perks, who as a member of the firm of MacArthur, Perks & Co., is interested in the proposed Georgian Bay canal, and who was in Canada during October, is reported to have said that he had received an assurance from the Dominion Government that it would act immediately in the matter of financing the work. This work, he stated, will take 10 years to complete, and cost about $150,000,000. Since this statement was made, a change of Government has taken place.

SAULT STE. MARIE CANALS TRAFFIC

The following commerce passed through the Sault Ste. Marie Canals in September.

Articles			Canadian Canal	U. S. Canal	Total
Copper	Eastbound	Short tons		12,234	12,234
Grain	"	Bushels	1,665,197	1,828,744	3,493,941
Building stone	"	Short tons		230	230
Flour	"	Barrels	329,606	795,100	1,124,706
Iron ore	"	Short tons	3,597,931	1,371,319	4,969,247
Pig iron	"	"	2,006	5,806	7,812
Lumber	"	M. ft. B M.	143	75,172	75,315
Silver ore	"	Short tons			
Wheat	"	Bushels	4,855,662	2,109,048	6,964,710
General merchandise	"	Short tons	4,741	16,975	21,716
Passengers	"	Number	2,500	2,278	4,778
Coal, hard	Westbound	Short tons	79,279	179,293	258,572
Coal, soft	"	"	467,513	1,496,343	1,963,856
Flour	"	Barrels			
Grain	"	Bushels			
Manufactured iron	"	Short tons	16,317	16,642	32,959
Iron ore	"	"			
Salt	"	Barrels	15,260	82,191	97,451
General merchandise	"	Short tons	67,307	83,032	150,339
Passengers	"	Number	2,766	1,627	4,393
Vessel passages		Number	899	1,760	2,659
Registered tonnage		Net	2,761,565	3,414,759	6,176,324
Freight—Eastbound		Short tons	3,817,854	1,711,756	5,529,610
" Westbound		"	632,596	1,787,638	2,420,234
Total freight		"	4,450,450	3,499,394	7,949,844

Short tons are tons of 2,000 pounds

The U.S. Lake Survey reports the levels of the Great Lakes in feet above tidewater, for September, as follows:—Superior, 602.20; Michigan and Huron, 579.63; Erie, 571.53, and Ontario, 244.91. As compared with the average September levels for the past ten years, Superior was 0.69 fe. below; Michigan and Huron 1.35 ft. below; Erie, 0.90 ft. below, and Ontario, 1.32 ft. below. During Oct., it was anticipated that Superior would remain stationary; Michigan, Huron and Erie would fall 0.2 ft., and Ontario, 0.3 ft.

The Detroit & Cleveland Navigation Co.'s steamboat, City of Detroit III., which was launched at Wyandotte, Mich., Oct. 7, is 500 ft. long, over all, breadth molded, 55 ft; breadth over guards, 100 ft.; depth molded, 22 ft.; depth at stem, 29.25 ft.; depth at stern, 25.25 ft.; depth at guard, 21.25 ft. The hull is built of steel with double bottom divided into 11 compartments by water-tight cross bulkheads, extending from the keel to the main deck. The bottom is divided at the centre line and athwartships into 15 water-tight tanks. There are two decks below the main deck and three above, the main deck and the housings on the main deck and orlop deck will also be of steel.

Manitoba, Saskatchewan and Alberta.

The traffic on the Red River, during the season just closing, is reported to have been about four times heavier than last year. The larger increases are in lumber, cordwood, sandstone, gravel and ice. Six barges have been built and put into service during the season.

S. A. Bentley, Athabasca Landing, Alta., who is interested in water transportation in the district, announces that he will operate a vessel next season between Athabasca Landing and Grand Rapids, and that The Pelican, which was running on the river route during the past season, will be transferred to Wabasca.

At a meeting of the dockage and wharfage committee of the Winnipeg city council, Oct. 13, a sub-committee was appointed, representing Winnipeg and St. Boniface, to wait on the Minister of the Interior, on his next visit to the city, with the object of obtaining his consent to the introduction of a bill into the House of Commons, creating a harbor commission for the two cities. The city solicitor is preparing a draft of a bill on the same lines as those creating harbor commissions in the east.

B.C. and Pacific Coast Marine

The C.P.R. s.s. Princess Beatrice, engaged in the coast service, was reported ashore on Noble Island, Oct. 16. The damage is said to be considerable. She was built at Victoria in 1903.

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The Union Steamship Co.'s s.s. Chelohsin, which has been built at Belfast, Ireland, sailed for Vancouver, Oct. 9. It is stated that she will, on arrival, be put on the northern run. On her trials she maintained a speed of 14¼ knots during eight hours, which is above her contract speed.

With reference to the press dispatch, mentioned in our last issue, to the effect that J. C. Gore, Superintendent, C.P.R. British Columbia Lake and River Service, had inspected the steamboats International and Kaslo, controlled by G.N.R. interests, on Mirror Lake, with a view to purchase, we are officially advised that there is no intention on the part of the C.P.R. to purchase any steamboat equipment belonging to the G.N.R. in the district named.

The Dominion Government steam tug Point Grey, practically a sister vessel of the Point Ellice, was launched at North Vancouver, Oct. 10. The machinery which is being installed was made in Great Britain. Her dimensions are, length 110 ft., beam 24 ft., depth of hold 14½ ft. She is equipped with engine having cylinder stroke of 27 ins., and the boiler is 14 by 14 ft. It is intended to utilize her in connection with the dredge Mastodon in the First Narrows, where dredging is proceeding.

The C.P.R. has purchased the s.s. Queen Alexandra, heretofore operated in the passenger service on the River Clyde, Scotland. It is stated that she will be placed on the Vancouver-Nanaimo route in the spring, making two round trips daily. She is now being overhauled and altered at Dumbarton, Scotland, and is expected to leave for Vancouver, towards the end of November. She is a triple screw vessel, equipped with turbines and large double ended boiler. Her dimensions are, length 270 ft., beam 32.1 ft., depth 11 ft.; tonnage, 665 register.

The Purchasing Agents' Guide

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Babcock & Wilcox, Ltd. ....Montreal.
Polson Iron Works, Ltd. ....Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Boilers, Portable
Babcock & Wilcox, Ltd. ....Montreal.
Polson Iron Works, Ltd. ....Toronto.
Robb Engineering Co., Ltd..Amherst, N.S
Boilers, Stationary and Marine
Babcock & Wilcox, Ltd. ....Montreal.
Polson Iron Works, Ltd ... .Toronto.
Robb Engineering Co., Ltd Amherst, N.S.
Boilers, Steam
Babcock & Wilcox, Ltd. .... Montreal.
Polson Iron Works Ltd .... . .Toronto.
Robb Engineering Co., Ltd..Amherst, N.S.
Boilers, Water Tube
Babcock & Wilcox, Ltd. ....Montreal.
Robb Engineering Co., Ltd..Amherst, N.S
Polson Iron Works, Ltd. . ... Toronto.
Bolsters
Canadian Car & Foundry Co., .Montreal.
Whyte Railway Signal Co. ....Toronto.
Bolt Cutters
London Machine Tool Co., Ltd..Hamilton.
Bolts and Nuts
Steel Co. of Canada, Ltd..Hamilton, Ont.
Bolts, Track
Nova Scotia S. & C. Co..New Glasgow, N.S.
Borers, Car Wheel
John Bertram & Sons Co. Dundas, Ont
Boring Mills
London Machine Tool Co., Ltd..Hamilton.
Brake Beams
Buffalo Brake Beam Co...Brantford, Ont
Canadian Car & Foundry Co.....Montreal
Chicago Railway Equipment Co.Chicago.
Brake Shoes
Am. Brake Shoe & Fdry. Co.Mahwah, N.J.
Canada Iron Corporation, Ltd...Montreal.
The Holden Co., Ltd. ....Montreal.
Brake Shoes, Locomotive Driver
Am. Brake Shoe & Fdry. Co.Mahwah, N.J.
Canada Iron Corporation, Ltd...Montreal.
Dorner Railway Equip. Co....Chicago, Ill.
Railway Materials Co. ....New York.
Brass
C. H. Besly Co. ....Chicago, Ill.
Brasses, Car
T. McAvity & Sons ....St. John, N.B.
Bridge Numbers
Acton Burrows, Limited ....Toronto.
Bridges
Canadian Bridge Co. ....Walkerville, Ont.
Cleveland Bridge & E. Co. Darlington, Eng.
Corbet Foundry Co. Ltd. Owen Sound, Ont.
Dominion Bridge Co. ....Montreal.
Bronze
American Vanadium Co....Pittsburgh, Pa.
Titanium Alloy Mfg. Co....Pittsburgh, Pa.
Buckets, Coal, Ore and Concrete
M. Beatty & Sons, Ltd. ....Welland, Ont.
Brown Hoisting Machinery Co..Cleveland.
Buildings, Steel
Canadian Bridge Co. ....Walkerville, Ont.
Cleveland Bridge & E. Co. Darlington, Eng.
Dominion Bridge Co. ....Montreal.
Bumping Posts
Dominion Equip. & Supply Co..Winnipeg
The Holden Co., Ltd. ....Montreal.
McCord & Co., ...Chicago, Ill
Buoys
International Marine Signal Co....Ottawa
Cables, Electric and Feeder
Canada Wire & Cable Co., Ltd. ..Toronto
Chapman & Walker, Ltd.........Toronto.
E. F. Phillips Electrical Works..Montreal
The Wire & Cable Co.............Montreal
Capstans
Dake Engine Co. .....Grand Haven, Mich
Car Furnishings
Guilford S. Wood ....Chicago, Ill
Car Movers
F. H. Hopkins & Co. ....Montreal.
Mussens, Ltd. ....Montreal.
Car Roofing
Franklin Railway Supply Co ....New York.
Cars
R. M. Burns & Co. ....Chicago, Ill.
Crossen Car Mfg. Co. ......Cobourg, Ont.
Canadian Car & Foundry Co.....Montreal.
Dorner Railway Equip. Co...Chicago, Ill.
J. T. Gardner ....Chicago, Ill.
Hart-Otis Car Co., Ltd. ....Montreal.
Ottawa Car Co., Ltd. ....Ottawa.
Pay-As-You-Enter Car Co. ....Montreal.
Preston Car & Coach Co., Ltd...Preston.
Russel Wheel & Fdry Co.....Detroit, Mich
Western Wheeled Scraper Co. Aurora, Ill.
Car Signal Systems
Ohio Brass Co. .... Mansfield, Ohio.
Cars, Logging
Russel Wheel & Fdry Co.....Detroit, Mich.
Castings
American Vanadium Co....Pittsburgh, Pa.
Canadian Car & Foundry Co.....Montreal.
Crossen Car Mfg. Co. ......Cobourg, Ont.
Lumen Bearing Co. ....West Toronto, Ont.
Russel Wheel & Fdry Co.....Detroit, Mich.
Titanium Alloy Mfg. Co....Pittsburgh, Pa
Castings, Brass
Canada Iron Corporation, Ltd...Montreal.
Canadian Bronze Co. ....Montreal.
Corbet Fdry Co., Ltd ..Owen Sound, Ont
Kerr Engine Co. ....Walkerville, Ont.
Lumen Bearing Co. ....West Toronto, Ont
Tallman Brass & Metal Co.Hamilton, Ont.
Castings, Car
Am. Brake Shoe & Fdry. Co.Mahwah, N.J.
Canada Iron Corporation, Ltd....Montreal.
Russel Wheel & Fdry Co.....Detroit, Mich.
Castings, Iron
Allis-Chalmers-Bullock, Ltd. ...Montreal.
Canada Iron Corporation, Ltd....Montreal.
Corbet Fdry Co., Ltd. ..Owen Sound, Ont.
Kerr Engine Co. ....Walkerville, Ont.
Russel Wheel & Fdry Co.....Detroit, Mich.
Castings, Iron and Steel
Am. Brake Shoe & Fdry. Co..Mahwah, N.J.
Castings, Malleable
Galt Malleable Iron Co..........Galt, Ont.
Pratt & Letchworth Co....Brantford, Ont.
Taylor & Arnold, ...Montreal.
Castings, Manganese Steel
Canadian Steel Foundries, Ltd...Montreal.
Lumen Bearing Co. ....West Toronto, Ont.
Castings, Steel
American Vanadium Co....Pittsburgh, Pa.
Canada Iron Corporation, Ltd....Montreal.
Canadian Steel Foundries, Ltd...Montreal.
W. Kennedy & Sons, Ltd.. Owen S'd, Ont.
Pratt & Letchworth Co....Brantford, Ont
Titanium Alloy Mfg. Co....Pittsburgh, Pa
Catenary Materials
Ohio Brass Co. ....Mansfield, Ohio.
Chains
B. J Coghlin & Co. ....Montreal
Circuit Breakers
Geo. C. Royce ....West Toronto, Ont.
Closets, Car
Duner Co. ....Chicago, Ill.
Coal
Nova Scotia S. & C. Co..New Glasgow, N.S
Compressors, Air
Allis-Chalmers-Bullock Ltd......Montreal
Canadian Rand Co. ....Montreal.
The Holden Co., Ltd.. ....Montreal.
Mussens, Ltd., ...Montreal.
Concrete Mixers and Rock Crushers
F. H. Hopkins & Co. ....Montreal.
Mussens, Ltd. ....Montreal.
Contractors' Supplies
American Hoist & Der. Co. St. Paul, Minn.
F. H. Hopkins & Co. ....Montreal.
Rice Lewis & Son ....Toronto.
Russel Wheel & Fdry Co.....Detroit, Mich.
Western Wheeled Scraper Co...Aurora, Ill
Conveyors, Coal and Ash
Babcock & Wilcox, Ltd. ....Montreal.
Copper
C. H. Besley Co. ....Chicago, Ill
Copying Presses
James Smart Mfg. Co......Brockville, Ont.
Couplers, Car and Locomotive
Canadian Car & Foundry Co.....Montreal
Canadian Steel Foundries, Ltd...Montreal
McConway & Torley Co....Pittsburgh, Pa.
Ohio Brass Co. ....Mansfield, Ohio.
Taylor & Arnold ....Montreal.
Couplers, Steam
Consolidated Car Heating Co. Albany, N.Y
Cranes
Brown Hoisting Machinery Co..Cleveland.
Northern Engineering Wks..Detroit, Mich.
Cranes, Electric
Babcock & Wilcox ....Montreal.
Dominion Bridge Co. ....Montreal.
Mussens, Ltd. ....Montreal.
Northern Engineering Wks.. Detroit, Mich.
Cranes, Locomotive
American Hoist & Der. Co..St. Paul, Minn.
Cranes, Wrecking
Mussens, Ltd. ....Montreal
Crowbars
B. J. Coghlin & Co. ....Montreal
Curtains and Fixtures, Car
The Holden Co., Ltd., ...Montreal.
Preston Car & Coach Co. ...Preston, Ont.

Canadian Northern Montreal Tunnel and Terminal Company, Limited

Notice is hereby given that the Canadian Northern Montreal Tunnel and Terminal Company, Limited, will apply to the Parliament of Canada at its next session for an Act:—

(a) Declaring the undertaking of the Company to be a work for the general advantage of Canada;

(b) Authorizing the Company to construct and operate a railway tunnel from some point in the City of Montreal, thence in a generally westerly direction under Mount Royal, with the necessary approaches and works;

(c) Authorizing the Company to construct and operate lines of railway connecting the tunnel and works of the Company with the lines and tracks of the Canadian Northern Ontario Railway Company, of the Canadian Northern Quebec Railway Company, and of the Harbor Commissioners of Montreal;

(d) Fixing the amount of the securities which the Company may issue in respect of its authorized lines of railway;

(e) Authorizing the Company to enter into agreements under sections 361, 362 and 363 of the Railway Act; and

(f) Providing for the acquirement by the Company of easements in respect of lands affected by its railway tunnel and lines and the granting or making by the Company of lands, interests in lands, or structures in mitigation of damages.

Toronto, October 17th, 1911.

GERARD RUEL,
Chief Solicitor

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Ontario and Ottawa Railway Company

Notice is hereby given that the Ontario and Ottawa Railway Company will apply to the Parliament of Canada at its next session for an Act:—

(1) Extending the time within which the Company may commence and construct the line of railway authorized by section 7 of chapter 139 of the Statutes of Canada for 1910;

(2) Authorizing the Company to construct and operate a line of railway from a point at or near Lake Couchiching, westerly to the Georgian Bay; and

(3) Fixing the limit to the amount of the securities which may be issued in respect thereof

Toronto, October 19th, 1911.

GERARD RUEL,
Chief Solicitor

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Canadian Northern Quebec Railway Company

Notice is hereby given that application will be made to the Parliament of Canada at its next session for an Act extending the time within which the Canadian Northern Quebec Railway Company may construct and complete the lines, branches and extensions authorized by paragraphs (c), (e) and (f) of section 3 of chapter 73 of the Statutes of Canada for 1907, and authorizing the Company to enter into agreements under sections 361, 362 and 363 of the Railway Act

Toronto, October 19th, 1911

GERARD RUEL,
Chief Solicitor

JAMES THOMSON, Pres. and Mang. Director
J. G. ALLAN, Vice-President.
JAMES A. THOMSON, Secretary

THE GARTSHORE-THOMSON PIPE & FOUNDRY CO. LIMITED

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CAST IRON PIPE

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Cable Address;—"Baldwin, Philadelphia"

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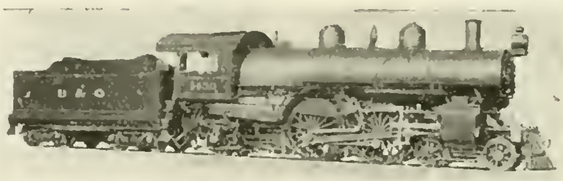
Broad and Narrow Gauge Single Expansion and Compound



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St. Louis, Mo., 1614 Wright Bldg.
Portland, Ore., 722 Spaulding Building

Complete Hydraulic Equipment

for

RAILWAY AND SHIP BUILDING PLANTS

Wheel Presses, Keel Plate Bending Presses, Riveters, Shears, Presses, etc., etc.
Centrifugal Pumps, Pumping Engines, Gas Plants, Gas Power Plants, Cast Iron Pipe, Hydrants, Valves & Fittings, etc., etc.

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PHILADELPHIA, Pa.

REAMERS ALL KINDS OF REAMERS FOR RAILROAD SHOPS AND BRIDGE BUILDING

BUTTERFIELD & CO., ROCK ISLAND, QUE.

HAND, MACHINE AND TAPPER TAPS, STAY BOLT TAPS, BOILER AND PATCH BOLT TAPS. QUALITY UNSURPASSED.

Cuts
Acton Burrows, Limited ....Toronto.

Cylinders
American Vanadium Co....Pittsburgh, Pa.
Titanium Alloy Mfg. Co....Pittsburgh, Pa.

Derricks
American Hoist & Der. Co..St. Paul, Minn.
M. Beatty & Sons, Ltd. ....Welland, Ont.
Mussens, Ltd. ....Montreal.

Derricks, Car
American Hoist & Der. Co..St. Paul, Minn.

Diaphragms, Vestibule
Guilford S. Wood ....Chicago, Ill.

Dies
Butterfield & Co. .... Rock Island, Que.
A. B. Jardine & Co. ....Hespeler, Ont.

Ditchers
American Hoist & Der. Co..St. Paul, Minn.
M. Beatty & Sons, Ltd. ....Welland, Ont.

Diving Outfits
John Date ....Montreal.
Mussens, Ltd. ....Montreal.

Doors, Steel Rolling
Mussens, Ltd. ....Montreal.

Door Signs
Acton Burrows, Limited ....Toronto.

Draft Gear
The Holden Co., Ltd., ...Montreal.
McCord & Co., ...Chicago, Ill.
Standard Coupler Co. .....New York City
T. H. Symington & Co. ....Baltimore, Md.

Draughtsmen's Supplies
John A. Hart & Co. ....Winnipeg.

Dredges
M. Beatty & Sons, Ltd. ....Welland, Ont.
Polson Iron Works, Ltd. ....Toronto.

Drills, Air
Canadian Rand Co. ....Montreal.

Drills, Radial
Mussens, Ltd., ...Montreal.
London Machine Tool Co., Ltd.Hamilton.

Dry Goods
The Hudson's Bay Co. ....

Dump Cars, Contractors'
Dominion Equip. & Supply Co..Winnipeg.
F. H. Hopkins & Co. ....Montreal.
Western Wheeled Scraper Co..Aurora, Ill.

Dynamos
Northern Electric & Mfg. Co.....Montreal.

Dynamo and Electric Castings
Am. Brake Shoe & Fdry. Co..Mahwah, N.J.

Economizers
Babcock & Wilcox ....Montreal.

Electric Apparatus
Allis-Chalmers-Bullock Ltd......Montreal.
Chapman & Walker, Ltd. ....Toronto.
Northern Electric & Mfg. Co.....Montreal.

Electric Car Route Signs
Acton Burrows, Limited ....Toronto.
Preston Car & Coach Co., Ltd....Preston.

Electric Light Plant
Allis-Chalmers-Bullock, Ltd. ....Montreal

Elevators, Grain
John S. Metcalf Co. ....Montreal.

Enameled Iron Signs
Acton Burrows, Limited ....Toronto.

Engines, Automatic
Polson Iron Works, Ltd. ....Toronto.
Robb Engineering Co., Ltd., Amherst, N.S.
Russel Wheel & Fdry Co.....Detroit, Mich.

Engines, Corliss
Allis-Chalmers-Bullock, Ltd. ....Montreal.
Robb Engineering Co., Ltd., Amherst, N.S.

Engines, Gas
Allis-Chalmers-Bullock, Ltd. . ..Montreal.

Engines, Gasolene
Canadian Fairbanks-Morse Co., Ltd.......
..................................Montreal.
Ontario Wind Engine & Pump Co. Toronto

Engines, Hoisting
Allis-Chalmers-Bullock, Ltd. ....Montreal.
American Hoist & Der. Co..St. Paul, Minn.
M. Beatty & Sons ....Welland, Ont.
Dominion Equip. & Supply Co...Winnipeg.
Mussens, Ltd., ...Montreal.
Polson Iron Works, Ltd. ....Toronto.
Russel Wheel & Fdry. Co. .Detroit, Mich.

Engines. Stationary and Marine
Polson Iron Works, Ltd. ....Toronto.
Robb Engineering Co., Ltd., Amherst, N.S.

Engines, Stationary, Appliances
Nathan Manufacturing Co. ....New York.

Engines, Steam
Allis-Chalmers-Bullock, Ltd. ....Montreal.

Engineers, Consulting
Alfred Lovell, ...Philadelphia, Pa.

Explosives
Curtis's & Harvey (Canada) Ltd..Montreal

Express Office Signs
Acton Burrows, Limited ....Toronto.

Ferro-Vanadium
American Vanadium Co. ..Pittsburgh, Pa.

Files
Nicholson File Co. ......Port Hope, Ont

Fire Extinguishers
Miller Chemical Engine Co...Chicago, Ill.

Flags
The Hudson's Bay Co. ....

Flour
The Hudson's Bay Co ....

Forgings
American Vanadium Co. ..Pittsburgh, Pa
Canadian Car & Foundry Co ....Montreal
Crossen Car Mfg Co ...... Cobourg, Ont
Nova Scotia S. & C. Co..New Glasgow, N.S.
Steel Co., of Canada, Ltd., Hamilton, Ont.
Titanium Alloy Mfg. Co....Pittsburgh, Pa.

Foundry Appliances
C. H. Besly Co. ....Chicago, Ill.
Ontario Wind Engine & Pump Co. Toronto

Frogs
Can. Ramapo Iron Wks. ...Niagara Falls.
Johnson Wrecking Frog Co..Cleveland, O.

Furnaces, Corrugated
Continental Iron Works....Brooklyn, N.Y.

Furnaces, Oil
Railway Materials Co. ....New York.

Fuse Batteries
Curtis's & Harvey (Canada) Ltd..Montreal

Fuse Detonators
Curtis's & Harvey (Canada) Ltd..Montreal

Fuses, Electric
Curtis's & Harvey (Canada) Ltd..Montreal

Gaskets
The Holden Co.. Ltd., ...Montreal.
McCord & Co. ....Chicago, Ill.

Gates, Crossing
The N. L. Piper Ry Supply Co....Toronto.
Whyte Railway Signal Co. ......Toronto.

Gauge Cocks
Nathan Manufacturing Co.....New York.
Ohio Brass Co. ....Mansfield, Ohio.

Gauges, Locomotive
Taylor & Arnold ....Montreal.

Gauges, Water
Detroit Lubricator Co. ....Detroit, Mich.
Nathan Manufacturing Co ...New York.
Ohio Brass Co. ....Mansfield, Ohio.

Gears
American Vanadium Co. ..Pittsburgh, Pa.
Titanium Alloy Mfg. Co....Pittsburgh, Pa.

Gears, Machine Cut
Corbet Fdry Co., Ltd. ..Owen Sound, Ont.

Generators, Electric
Dorner Railway Equip. Co....Chicago, Ill.
Northern Electric & Mfg. Co. ..Montreal.

Graders and Ditchers
Western Wheeled Scraper Co. Aurora, Ill

Grates, Shaking
Babcock & Wilcox ....Montreal.
Polson Iron Works, Ltd. ....Toronto.

Grinders, Disc, for Wood and Metal
C. H. Besly Co. ....Chicago, Ill.

Groceries
The Hudson's Bay Co. ....

Hammers, Cast Steel
Am. Brake Shoe & Fdry Co.Mahwah, N.J.
James Smart Mfg. Co. ....Brockville, Ont.

Handcars
Canadian Fairbanks-Morse Co., Ltd.......
..................................Montreal.
Crossen Car Mfg. Co. ......Cobourg, Ont.
Dominion Equip. & Supply Co..Winnipeg.
F H. Hopkins & Co. ....Montreal.
Mussens, Ltd. ....Montreal.
Rice Lewis & Son ....Toronto.
Whyte Railway Signal Co. ... ..Toronto.

Hardware
The Hudson's Bay Co. ....
Rice Lewis & Son ....Toronto.

Headlights
Commercial Acetylene Co. ......Toronto.
The N. L. Piper Ry Supply Co....Toronto.
Pyle National Elec. Headlight Co. Chicago.

Headlinings
Crossen Car Mfg. Co. ......Cobourg, Ont.

Heaters, Feedwater
Robb Engineering Co., Ltd..Amherst, N.S.

Heating, Car
Canadian Gold Car H'g & L'g Co.Montreal.
Consolidated Car H'ting Co...Albany, N.Y.
Safety Car Heating & L'ting Co.New York.
United States Light & Heat Co..New York.

Hoists
Dake Engine Co. .....Grand Haven, Mich.

Hoists, Electric
American Hoist & Der. Co. St. Paul, Minn.

Hoists, Pneumatic
Taylor & Arnold ....Montreal.

Hooks
Steel Co. of Canada, Ltd..Hamilton, Ont.

Hoppers, Car, Wet or Dry
Duner Co ....Chicago, Ill.

Hose, Air Brake and Steam
Guilford S. Wood ....Chicago, Ill.

Hydrants
Canadian Fairbanks-Morse Co., Ltd.......
..................................Montreal.
Kerr Engine Co. ....Walkerville, Ont.

Hydraulic Equipment
R. D Wood & Co.......Philadelphia, Pa.

Illustrations.
Acton Burrows, Limited ....Toronto.

Injectors
T McAvity & Sons ....St. John, N.B.
Nathan Manufacturing Co.....New York.

Inspections
R. W. Hunt & Co. ....Montreal.
Alfred Lovell ....Philadephia, Pa.

Insulators, Porcelain
Ohio Brass Co. ....Mansfield, Ohio.

Insurance, Accident
Can. Casualty & Boiler Ins. Co....Toronto.
Canadian Ry. Accident Ins. Co....Ottawa
Imp. Guarantee & Acc. Ins. Co....Toronto.
London Guar. & Accident Co. Ltd.Toronto.

Insurance, Boiler
Can Casualty & Boiler Ins. Co....Toronto.

Interlocking Plant and Signals
Canadian Steel Foundries, Ltd...Montreal.
Saxby & Farmer, Ltd. ....Montreal.

Iron and Steel Bars
Steel Co. of Canada, Ltd..Hamilton, Ont.

Iron, Pig
Nova Scotia S. & C. Co..New Glasgow, N.S.

Iron Signs
Acton Burrows, Limited ....Toronto.

Jacks
Canadian Fairbanks-Morse Co., Ltd.......
..................................Montreal.
Canadian Steel Foundries, Ltd...Montreal.
Dominion Equip. & Supply Co..Winnipeg.
H. & E. Lifting Jack Co..Walkerville, Ont.
F. H. Hopkins & Co. ....Montreal.
Mussens, Ltd. ....Montreal.
A. O. Norton ....Coaticook, Que.
James Smart Mfg. Co. ....Brockville, Ont.

Japans
The Dougall Varnish Co., Ltd....Montreal.

Journal Bearings
Canadian Bronze Co. ....Montreal.
Crossen Car Mfg. Co. .....Cobourg, Ont.
Kerr Engine Co. ....Walkerville, Ont.
Jas. W. Pyke & Co. ....Montreal.

Journal Boxes
The Holden Co., Ltd. ....Montreal.
McCord & Co. ....Chicago, Ill.

Lager Beer ,Etc.
E. L. Drewry ....Winnipeg.

Lagging and Covering, Locomotive
Can. H. W. Johns-Manville Co., Ld. Toronto
Taylor & Arnold ....Montreal.

Lamps, Arc
Northern Electric & Mfg. Co.....Montreal.

Lamps, Gas
Commercial Acetylene Co., ... Toronto.

Lamps, Incandescent
Canadian Westinghouse Co..Hamilton, Ont.

Lamps and Lanterns
The Hudson's Bay Co. ....
The Hiram L. Piper Co. ....Montreal.
The N L. Piper Ry Supply Co....Toronto.

Lamps, Switch
The N. L. Piper Ry Supply Co....Toronto.

Lathes
John Bertram & Sons Co. ....Dundas, Ont.
Mussens, Ltd., ...Montreal.

Lighting, Buoy
Blau-Gas Co. of Canada, Ltd....Montreal.
International Marine Signal Co.....Ottawa.
Walter MacLeod & Co. ......Cincinnati, O.
Safety Car Htg. & Ltg. Co....New York.

Lighting, Car
Blau-Gas Co. of Canada, Ltd....Montreal.
Canadian Gold Car H'g & L'g Co.Montreal.
Commercial Acetylene Co. ....Toronto.
Safety Car Heating & Ltg. Co..New York.
United States Light & Heat Co..New York.

Lighting, Signal
Commercial Acetylene Co. ....Toronto

Lights, Contractors' and Wrecking
F. H. Hopkins & Co. ....Montreal.
Walter McLeod & Co. ......Cincinnati, O.
Mussens, Ltd. ....Montreal.

Line Material
Ohio Brass Co. ....Mansfield, Ohio.

Locomotives, Compressed Air
Baldwin Locomotive Works...Philadelphia.
Canadian Locomotive Co....Kingston, Ont.
International Marine Signal Co.....Ottawa.
Montreal Locomotive Works .....Montreal.

Locomotives, Contractors'
Dominion Equip. & Supply Co..Winnipeg.

Locomotives, Electric
Baldwin Locomotive Works...Philadelphia.
Montreal Locomotive Works .....Montreal.

Locomotives, Logging
Baldwin Locomotive Works...Philadelphia.
Canadian Locomotive Co....Kingston, Ont.

Locomotive, Rack
Baldwin Locomotive Works...Philadelphia
Canadian Locomotive Co....Kingston, Ont.
Montreal Locomotive Works .....Montreal.

Locomotives, Steam
Baldwin Locomotive Works...Philadelphia.
Canadian Fairbanks-Morse Co., Ltd......
..................................Montreal.
Canadian Locomotive Co....Kingston, Ont.
J. T. Gardner ....Chicago, Ill.
Montreal Locomotive Works .....Montreal
Vulcan Iron Works ......Wilkesbarre, Pa.

Lorries, Tracklaying
Crossen Car Mfg. Co. ....Cobourg, Ont.
F. H. Hopkins & Co. ....Montreal.

Lubricators
Detroit Lubricator Co. ......Detroit, Mich.
McCord & Co. ....Chicago, Ill.
Nathan Manufacturing Co.....New York.
Taylor & Arnold ....Montreal.

Lumber
Imperial Timber & Trading Co. Vancouver.
Parry Sound Lumber Co. ....Toronto.

Machines and Plant, Contractors'
American Hoist & Derrrick Co. ..St. Paul.
M. Beatty & Sons ....Welland, Ont.
R. M. Burns & Co. ....Chicago, Ill.
Canadian Fairbanks-Morse Co., Ltd.......
..................................Montreal.
J. T. Gardner ....Chicago, Ill
F. H. Hopkins & Co. .. ..Montreal.
Mussens, Ltd. ....Montreal

Machines. Boring and Turning
John Bertram & Sons Co ... Dundas, Ont.

The Canadian Northern Railway Company

Notice is hereby given that application will be made to the Parliament of Canada at its next session for an Act extending the time within which the Canadian Northern Railway Company (hereinafter called the Company) may commence and construct the following lines of railway:—

(1) The lines of railway authorized by paragraphs (a) to (k) inclusive of section [illegible] of chapter 80 of the Statutes of Canada for 1910;

(2) The lines of railway authorized by paragraphs (e), (g), (i), (k) and (l) respectively of section [illegible] of chapter 92 of the Statutes of Canada for 1908, as renewed by section 6 of chapter 80 of the Statutes of Canada for 1910;

(3) The lines of railway authorized by chapter 45 of the Statutes of Alberta for 1909, in respect of the Alberta Midland Railway Company, which has been amalgamated with the Company;

(4) The lines of railway authorized by chapter 18 of the Statutes of Saskatchewan for 1908-1909, in respect of the Saskatchewan North-Western Railway Company, which has been amalgamated with the Company;

(5) The lines of railway authorized by chapter 41 of the Statutes of Saskatchewan for 1909, in respect of the Saskatchewan Midland Railway Company, which has been amalgamated with the Company.

Toronto, Oct. 19th, 1911.

GERARD RUEL,
Chief Solicitor.

◆

NOTICE.—The Ottawa Northern and Western Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time within which it may construct the railway extension and branches which it was authorized to construct by section 1 of chapter 84 of the Statutes of 1899, and by section 1 of chapter 72 of the Statutes of 1900, and for other purposes.

Dated at Montreal, this 19th October, 1911.
H. C. OSWALD,
Secretary.

Pringle, Thompson & Burgess,
Ottawa Agents.

◆

NOTICE. The Esquimalt and Nanaimo Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time within which it may construct the branches which it was authorized to construct by its Act of Incorporation, chapter 14 of the Statutes of British Columbia, 1884, and by section 2 of chapter 92 of the Statutes of Canada, 1906, and for other purposes.

Dated at Vancouver, this 19th October, 1911.
W. F. SALSBURY,
Secretary.

Pringle, Thompson & Burgess,
Ottawa Agents.

◆

NOTICE.—The Manitoba & Northwestern Railway Company of Canada will apply to the Parliament of Canada, at its next session, for an Act:—

1. Authorizing it to construct a branch from a point at or near Harrowby south-easterly and southerly to a point at or near Hamiota, Manitoba;

2. Extending the time within which it may construct the following branch lines of railway:—

(a) From a point at or near Churchbridge to a junction with the Pheasant Hills Branch of the C.P.R. at or near Cutarm Creek, Saskatchewan;

(b) From Theodore to a junction with its Russell Branch in Township 20 or 21, Range 28, West 3rd Mer., Saskatchewan and Manitoba;

(c) From Birtle to Hamiota, Manitoba;

(d) From Russell to a point where Shoal River enters Lake Winnipegosis, Manitoba, and for other purposes.

Dated at Montreal, this 19th October, 1911.
H. C. OSWALD,
Secretary.

Pringle, Thompson & Burgess,
Ottawa Agents.

Canadian Northern Ontario Railway Company

Notice is hereby given that the Canadian Northern Ontario Railway Company will apply to the Parliament of Canada at its next session for an Act:—

1. Extending the time within which the Company may complete and put in operation the lines of railway authorized by section [illegible] of chapter 110 of the Statutes of Canada for [illegible], as renewed by section [illegible] of chapter [illegible] of the Statutes of Canada for [illegible], and the uncompleted portion of the line authorized by section 3 of chapter 50 of the Statutes of Canada for 1895, as renewed by section 3 of chapter 111 of the Statutes of Canada for 1906, and section [illegible] of chapter [illegible] of the Statutes of Canada for [illegible];

2. Authorizing the Company to construct and operate the following lines of railway:—

(a) From near the head of Long Lake, north-westerly to a junction with the National Transcontinental Railway;

(b) From a point in the Township of Chisholm, south-easterly to a point on the Central Ontario Railway.

3. Fixing the limit to the amount of securities which the Company may issue in respect of such lines; and

4. Authorizing the Company to enter into agreements under sections 361, 362 and 363 of the Railway Act.

Toronto, Oct. 19th, 1911.

GERARD RUEL,
Chief Solicitor.

◆

NOTICE.—The South Ontario Pacific Company will apply to the Parliament of Canada, at its next session, for an Act extending the time within which it may construct the railways and bridges which it was authorized to construct by section 3 of chapter 85 of the Statutes of 1887, as enacted by section 1, of chapter 92 of the Statutes of 1887, as enacted by section 1 of chapter 92 of the Statutes of 1891, and authorizing it to enter into an agreement with the Canadian Pacific Railway Company, for any purpose specified under section 361 of The Railway Act, and for other purposes.

Dated at Montreal, this 19th October, 1911.
H. C. OSWALD,
Secretary.

Pringle, Thompson & Burgess,
Ottawa Agents.

◆

NOTICE.—The Dominion Atlantic Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time within which it may construct the railway which it was authorized to construct by section 1 of chapter 101 of the Statutes of 1908, and increasing its bonding powers, and for other purposes.

Dated at Montreal, this 19th October, 1911.
H. C. OSWALD,
Secretary.

Pringle, Thompson & Burgess,
Ottawa Agents.

◆

NOTICE.—The West Ontario Pacific Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time within which it may construct the railway which it was authorized to construct by section 1 of chapter 178 of the Statutes of 1906, and for other purposes.

Dated at Montreal, this 19th October, 1911.
H. C. OSWALD,
Secretary

Pringle, Thompson & Burgess,
Ottawa Agents.

◆

NOTICE.—La Compagnie du Chemin de fer de Colonisation du Nord will apply to the Parliament of Canada, at its next session, for an Act extending the time within which it may construct the railways which it was authorized to construct by section 7 of chapter 62 of the Statutes of 1898, and for other purposes.

Dated at Montreal, this 19th October, 1911
H. C. OSWALD,
Secretary

Pringle, Thompson & Burgess
Ottawa Agents

NOTICE.—The Canadian Pacific Railway Company will apply to the Parliament of Canada, at its next session, for an Act,

1. Authorizing it to construct the following branch lines of railway:—

(a) From a point on its Estevan-Forward Branch in Range 10, 11 or 12, west 2nd M., to a junction with the Weyburn-Lethbridge Branch in Range 24, 25 or 26, west 2nd M., Saskatchewan.

(b) From a point at or near Sedgewick southerly to a junction with the Lacombe Branch, in Township 35, 36 or 37, Range 10, 11 or 12, west 4th M., Alberta.

(c) From a point north of the Battle River on the line described in paragraph (b) northwesterly to a junction with the Wetaskiwin Branch in Range 17, 18 or 19, west 4th M., Alberta.

2. Extending the time within which it may construct the following lines of railway:—

(a) From Osborne to a point between Cartwright and Boissevain, Manitoba.

(b) From Otterbourne to Stuartburn, Manitoba.

(c) From a point on the Icelandic River, northerly and northwesterly 100 miles, Manitoba.

(d) From Killam to Strathcona, Alberta.

3. Amending the Statute relating to the company's power to issue four per cent. Consolidated Debenture Stock for the acquisition of mortgage bonds so as to make it apply also to the debenture stock and other securities of any other railway company, the principal or interest of which has been guaranteed by the company, and for other purposes.

Dated at Montreal, this 19th October, 1911.
WALTER R. BAKER,
Secretary.

Pringle, Thompson & Burgess,
Ottawa Agents.

◆

A meeting of the British Columbia Shipping Co., Ltd., Victoria, is called for Nov. 3, to consider the liquidator's accounts in connection with the winding up of the company.

The Boscowitz Steamship Co.'s s.s. Venture, which ran on Pender rocks, near the Seymour Narrows, recently, had her repairs completed, Oct. 10, and resumed her service to northern ports the following day.

A. Bassett, District Accountant, Hudson's Bay Co., Victoria, B.C., is reported to have been appointed Manager of the fur trade district and steamship service at Victoria, vice Jas. Thomson, appointed Land Commissioner, Winnipeg.

The Lake Winnipeg Shipping Co. is again applying to the Winnipeg city council for permission to proceed with the construction of a wharf at Water St. Permission was granted for the wharf in the spring, but there were some objections to the wording of the agreement, which stated that the wharf must be, to some extent, a public convenience.

The British ship Egeria, which has been utilized in hydrographic work on the Pacific coast for a number of years, was sold by auction at Victoria, Oct. 9. She was purchased on behalf of the Vancouver Branch of the Navy League, for $6,800. It is the intention of the purchasers to take her to Vancouver, and anchor her in Burrard Inlet, as a training school for seamen.

It is announced that J. H. Welsford, of Liverpool, Eng., President, Union Steamship Co. of Vancouver, who was in Vancouver recently, has acquired a considerable interest in the Boscowitz Steamship Co., and that the two companies will be amalgamated, but that they will be operated under their respective names, as heretofore, with J. Barnsley, Manager, Boscowitz Steamship Co., as Manager of both. The Union Steamship Co. operates the steamships Camosun, Capilano, Cassiar, Cheslake, Comox, Coquitlam and Cowichan, while the Chelohsin, recently built at Belfast, Ireland, is now en route to Vancouver. The Boscowitz Steamship Co. operates the steamships Vadso and Venture, all in the coasting trade.

Machines, Car Shop
Greenlee Bros. & Co. ....Chicago, Ill..

Machines, Cement
Jas. W. Pyke & Co. ....Montreal.

Machines, Drilling
John Bertram & Sons Co. ....Dundas, Ont.

Machines, Earth and Stone Handling.
Western Wheeled Scraper Co...Aurora, Ill.

Machines, Hoisting
American Hoist & Derrick Co. ..St. Paul.
Brown Hoisting Machinery Co..Cleveland.

Machines, Logging
Russel Wheel & Fdry. Co. .Detroit, Mich.

Machines, Milling
John Bertram & Sons Co. ....Dundas, Ont.

Machines, Planing and Shaping
John Bertram & Sons Co. ....Dundas, Ont.

Machines, Radial Drilling
John Bertram & Sons Co. ....Dundas, Ont.

Machines, Rivetting
Long & Allstatter Co. ...Hamilton, Ohio.

Machines, Slotting
John Bertram & Sons Co. ....Dundas, Ont.

Machines, Tire Welding
Long & Allstatter Co.....Hamilton, Ohio.

Machines, Track
Greenlee Bros. & Co. ....Chicago, Ill.

Machines, Tracklaying
F. H. Hopkins & Co. ....Montreal.

Machines, Wood and Iron Working
Canadian Fairbanks Co. Ltd.....Montreal.

Machine Tools
John Bertram & Sons Co. ....Dundas, Ont.
Mussens, Ltd., ...Montreal.
Pratt & Whitney Co. ....Dundas, Ont.

Machinists' Supplies
C. H. Besly Co. ....Chicago, Ill.

Manhole Frames and Covers
American Brake Shoe & Fdry. Co.Mahwah.
Canada Iron Corporation, Ltd...Montreal.

Marine Repairs
Corbet Fdry Co., Ltd. ..Owen Sound, Ont.
Goldschmidt Thermit Co.........Toronto.

Marine Supplies
Rice Lewis & Son ....Toronto.

Metal, Babbit
Tallman Brass & Metal Co. Hamilton, Ont.

Metals
Goldschmidt Thermit .. ....Toronto.

Metal Work, Structural
Canadian Bridge Co. ....Walkerville, Ont.
Cleveland Bridge & E. Co. Darlington, Eng.
Corbet Fdry. Co., Ltd. ..Owen Sound, Ont.
Dominion Bridge Co. ....Montreal.
Jas. W. Pyke & Co. ....Montreal

Meters, Traction
Geo. C. Royce, ...West Toronto, Ont.

Milepost Numbers
Acton Burrows, Limited ....Toronto.

Mill Supplies
C. H. Besly Co. ....Chicago, Ill.

Motors
Canadian Fairbanks-Morse Co., Ltd....... ....Montreal.
McCord & Co. ....Chicago, Ill.

Motors, Electric
Allis-Chalmers-Bullock Ltd......Montreal.
Chapman & Walker, Ltd. ....Toronto.
Northern Electric & Mfg. Co. ..Montreal.

Motor Generator Sets
Allis-Chalmers-Bullock Ltd......Montreal.
Chapman & Walker, Ltd. ....Toronto.

Motors, Turntable
Taylor & Arnold ....Montreal.

Nails, Cut and Wire
Steel Co. of Canada, Ltd..Hamilton, Ont.

Nickel
The Orford Copper Co. ....New York.

Nickel for Nickel Steel
The Orford Copper Co. ....New York.

Numbers
Acton Burrows, Limited ....Toronto.

Nut Locks
Positive Lock Washer Co. ..Newark, N.J.

Oakum
The Hudson's Bay Co. ....

Office Fittings
Can. Office & School Furn. Co....Preston.

Office Signs
Acton Burrows, Limited ....Toronto.

Oil
C. H. Besly Co. ....Chicago, Ill.

Oil Cups
C. H. Besly Co. ....Chicago, Ill.
Detroit Lubricator Co. ....Detroit, Mich.
Nathan Manufacturing Co. ....New York.

Oils
Galena Signal Oil Co..Franklin & Toronto.

Packing
Anchor Packing Co. of Can. Ltd..Montreal.
Greene, Tweed & Co. ....New York.
The N. L. Piper Ry. Supply Co....Toronto.

Pile Drivers, Railway
F. H. Hopkins & Co. ....Montreal.
Mussens, Ltd. ....Montreal.

Piles
Harris Tie & Timber Co.....Ottawa, Ont.

Pinch Bars
The N. L. Piper Ry. Supply Co....Toronto.

Pipe, Culvert, Cast Iron
Gartshore-Thompson Pipe & Fdry. Co..... ....Hamilton, Ont.

Pipe, Gas, Cast Iron
Gartshore-Thompson Pipe & Fdry. Co..... ....Hamilton, Ont.

Pipe, Sewer, Cast Iron
Gartshore-Thompson Pipe & Fdry. Co..... ....Hamilton, Ont.

Pipe Stocks
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co. ....Hespeler, Ont.

Pipe, Water, Cast Iron
Gartshore-Thompson Pipe & Fdry. Co..... ....Hamilton, Ont.

Pipe, Wrought Lead and Galvanized
Steel Co. of Canada, Ltd..Hamilton, Ont.

Planers
John Bertram & Sons Co. ....Dundas, Ont.

Platforms, Steel
Standard Coupler Co. ....New York.

Ploughs, Contractors'
Mussens, Ltd. ....Montreal.
Western Wheeled Scraper Co..Aurora, Ill.

Poles and Posts, Cedar
Harris Tie & Timber Co.....Ottawa, Ont.

Porter
E. L. Drewry ....Winnipeg.

Preservative for Hose
Guilford S. Wood ....Chicago, Ill.

Presses
R. D. Wood & Co. ......Philadelphia, Pa.

Printing.
Southam Press ....Toronto.

Propellor Wheels
W. Kennedy & Sons, Ltd.. Owen S'd, Ont.

Pumps
Canadian Fairbanks-Morse Co., Ltd....... ....Montreal.
S. F. Bowser & Co., Ltd..........Toronto.
Ontario Wind Engine & Pump Co. Toronto
James Smart Mfg. Co. ....Brockville, Ont.

Pumps, Centrifugal
M. Beatty & Sons ....Welland, Ont.
R. D. Wood & Co. ......Philadelphia, Pa.

Punches and Shears
Long & Allstatter Co. ...Hamilton, Ohio.
Mussens, Ltd., ...Montreal.

Putty
Steel Co. of Canada, Ltd...Hamilton, Ont.

Rail Benders, Roller
Canadian Steel Foundries Ltd....Montreal.
Dominion Equip. & Supply Co...Winnipeg.
F. H. Hopkins & Co. ....Montreal.
Whyte Railway Signal Co. ......Toronto.

Rail Bonds
Ohio Brass Co. ....Mansfield, Ohio

Rail Drilling Machines
A. B. Jardine & Co. ....Hespeler, Ont.
Whyte Railway Signal Co. ......Toronto.

Rails, New
Dominion Iron & Steel Co.....Sydney, N.S.
Drummond, McCall & Co........Montreal.
J. T. Gardner ....Chicago, Ill.
J. J. Gartshore ....Toronto.
F. H. Hopkins & Co. ....Montreal.

Rails for Relaying
J. J. Gartsbore ....Toronto.
F. H. Hopkins & Co. ....Montreal.
Mussens, Ltd. ....Montreal.
Provincial Steel Co. Ltd. ....Cobourg, Ont.
Jas. W. Pyke & Co. ....Montreal.

Rail Joints
Goldschmidt Thermit Co.. ..Toronto.
The Rail Joint Co. of Canada...Montreal.
Whyte Railway Signal Co. ....Toronto.

Railway Supplies
Canadian Fairbanks-Morse Co., Ltd....... ....Montreal.
Can. H. W. Johns-Manville Co., Ld. Toronto
Corbet Fdry. Co., Ltd. ..Owen Sound, Ont.
Franklin Railway Supply Co....New York.
T. McAvity & Sons ....St. John, N.B.
Burton W. Mudge & Co.......Chicago, Ill..
The Hiram L. Piper Co. ....Montreal.
The N. L. Piper Ry. Supply Co....Toronto.
Rice Lewis & Son ....Toronto.
Russel Wheel & Fdry. Co. .Detroit, Mich.
Pratt & Letchworth Co ..Brantford, Ont.
Whyte Railway Signal Co. ....Toronto.

Reamers
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co. ....Hespeler, Ont.

Refrigerators.
Seeger Refrigerator Co.....St. Paul, Minn.

Replacers, Car and Locomotive
Alexander Car Replacer Mfg. Co..Scranton.
Dominion Equip. & Supply Co..Winnipeg.
The Holden Co., Ltd. ....Montreal.
F. H. Hopkins & Co. ....Montreal.
Johnson Wrecking Frog Co....Cleveland, O.
Whyte Railway Signal Co. ....Toronto.

Rivetters
R. D. Wood & Co. .....Philadelphia, Pa.

Rock Crushers
Allis-Chalmers-Bullock Ltd......Montreal.
Western Wheeled Scraper Co...Aurora, Ill.

Rope
F. H. Hopkins & Co. ....Montreal.
The Hudson's Bay Company ....

Ropes, Derick
Dominion Wire Rope Co. ....Montreal.

Ropes, Switch
F. H. Hopkins & Co. ....Montreal.

Rubber Goods, Mechanical
Guilford S. Wood ....Chicago, Ill.

Scales
Canadian Fairbanks-Morse Co., Ltd....... ....Montreal.

Safes
J. & J. Taylor ....Toronto.

Sanders, Pneumatic
Ohio Brass Co. ....Mansfield, Ohio

Scows, Dump and Deck
M. Beatty & Sons ....Welland, Ont.

Scrapers, Wheel and Drag
F. H. Hopkins & Co. ....Montreal.
Mussens, Ltd. ....Montreal
Western Wheeled Scraper Co...Aurora, Ill.

Screw Plates
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co. ....Hespeler, Ont.

Screws, Wood and Machine
Steel Co. of Canada, Ltd..Hamilton, Ont.

Seats, Station
James Smart Mfg. Co. ....Brockville, Ont.

Semaphore Arms
Acton Burrows, Limited ....Toronto.

Semaphores
The N. L. Piper Ry. Supply Co....Toronto.
Saxby & Farmer, Ltd. ....Montreal.

Shapers
London Machine Tool Co. Ltd..Hamilton.

Shears
R. D. Wood & Co. .....Philadelphia, Pa.

Shingles
Imperial Timber & Trading Co.Vancouver

Ships
Polson Iron Works, Ltd. ....Toronto.

Shop Equipment, Car and Locomotive
London Machine Tool Co. Ltd. ...Hamilton.

Shops
The Hudson's Bay Company ....

Signal House Numbers
Acton Burrows, Limited ....Toronto.

Signals
Hall Signal Co. ....Chicago, Ill.
The Hiram L. Piper Co. ....Montreal.
The N. L. Piper Ry. Supply Co....Toronto.
Saxby & Farmer, Limited ......Montreal.
Union Switch & Signal Co...Swissvale, Pa.
Whyte Railway Signal Co. ......Toronto.

Signals, Fog
International Marine Signal Co.....Ottawa

Signs
Acton Burrows, Limited ....Toronto.

Skidders and Loaders
Russel Wheel & Fdry. Co. .Detroit, Mich.

Slack Adjusters
Chicago Railway Equipment Co..Chicago.

Sledges
James Smart Mfg. Co. ....Brockville, Ont.

Snow Ploughs
Canadian Car & Foundry Co....Montreal.
Crossen Car Mfg. Co. ....Cobourg, Ont.

Solder
Tallman Brass & Metal Co..Hamilton, Ont.

Spikes, Railway, Ship or Pressed
F. H. Hopkins & Co. ....Montreal.
Nova Scotia S.& C. Co. New Glasgow, N.S.
Steel Co. of Canada, Ltd....Hamilton, Ont.

Spreader Cars
F. H. Hopkins & Co. .. .. .Montreal.
Western Wheeled Scraper Co...Aurora, Ill.

Spring Dampeners
McCord & Co. ....Chicago, Ill.

Springs
American Vanadium Co. ..Pittsburgh, Pa.
Canadian Steel Foundries, Ltd...Montreal.
B. J. Coghlin & Co. ....Montreal
F. H. Hopkins & Co. ....Montreal.
Titanium Alloy Mfg. Co....Pittsburgh, Pa.

Sprinklers, Electric
Preston Car & Coach Co. ...Preston, Ont.

Stand Pipes
Corbet Fdry. Co., Ltd. ..Owen Sound, Ont.
T. McAvity & Sons ....St. John, N.B.

Staples
Steel Co. of Canada, Ltd....Hamilton, Ont.

Station Name Signs
Acton Burrows, Limited .....Toronto.

Staybolt Iron
Mussens, Ltd., ...Montreal.
Taylor & Arnold ....Montreal.

Staybolts, Flexible
Flannery Bolt Co. ....Pittsburgh, Pa.

Staybolts, Locomotive
Flannery Bolt Co. ....Pittsburgh, Pa.

Staybolt Taps
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co. ....Hespeler, Ont.

Steam Couplers
Safety Car Heating & Ltg. Co..New York.

Steam Hammers
John Bertram & Sons Co. ....Dundas, Ont.

Steam Shovels
M. Beatty & Sons ....Welland, Ont.
F. H. Hopkins & Co. ....Montreal.
Montreal Locomotive Works ...Montreal.
Mussens, Limited ....Montreal.

Steamship Signs
Acton Burrows, Limited ....Toronto

Steam Traps
Consolidated Car Heating Co..Albany,N.Y.

Steel
Hermann Boker & Co. ....Montreal.
Nova Scotia S. & C. Co. New Glasgow, N.S.

Steel, Fire Box
Taylor & Arnold ....Montreal

Steel for Axes
Canadian Steel Foundries, Ltd...Montreal.

Steel for Saws
Canadian Steel Foundries, Ltd...Montreal

Steel for Springs
Jas. Hutton & Co. ....Montreal.
Steel Shafting
Nova Scotia S. & C. Co. New Glasgow, N.S.
Steel, Nickel, for Nickel
The Orford Copper Co. ....New York
Steel Plates
Jas. W. Pyke & Co. ....Montreal.
Steel, Tool
Canadian Steel Foundries, Ltd...Montreal.
Steering Gears
Dake Engine Co. ....Grand Haven, Mich.
Stokers, Mechanical
Babcock & Wilcox ....Montreal.
Storage Batteries
T. A. Edison Co. Inc. ....Orange, N.J.
Stoves
Jas. Smart Mfg. Co. ......Brockville, Ont.
Superheaters
Babcock & Wilcox ....Montreal.
Switchboards
Geo. C. Royce ....West Toronto, Ont.
Switches
Can. Ramapo Iron Ws. Niagara Falls, Ont.
Canadian Steel Foundries, Ltd...Montreal.
Switches, Electric
Geo. C. Royce ....West Toronto, Ont.
Switch Stands
Can Ramapo Iron Ws. Niagara Falls, Ont.
Switch Targets
Acton Burrows, Limited ....Toronto.
Tacks
Steel Co. of Canada, Ltd... Hamilton, Ont.
Tanks and Tank Fixtures
Ontario Wind Engine & Pump Co. Toronto
Polson Iron Works, Ltd. ....Toronto.
Tanks, Oil
S. F. Bowser & Co., Limited ....Toronto.
Corbet Fdry. Co., Ltd. ..Owen Sound, Ont.
Tanks, Portable Acetylene, for Welding
Commercial Acetylene Co. ....Toronto.

Taps
C. H. Besly Co. ....Chicago, Ill.
Butterfield & Co. ......Rock Island, Que.
A. B. Jardine & Co. ....Hespeler, Ont.
Telegraph and Telephone Apparatus
Northern Electric & Mfg. Co.....Montreal.

Telegraph and Telephone Office Signs
Acton Burrows, Limited ....Toronto.

Thermit
Goldschmidt Thermit Co ....Toronto.

Ticket Cases
Can Office & School Furn. Co.....Preston.

Tie Plates
B. J. Coghlin & Co. ....Montreal
Nova Scotia S. & C. Co. New Glasgow, N.S.
Pratt & Letchworth Co....Brantford, Ont.
Steel Co. of Canada, Ltd....Hamilton, Ont.
Guilford S. Wood ....Chicago, Ill.

Ties
Harris Tie & Timber Co.....Ottawa, Ont.
Parry Sound Lumber Co. ....Toronto.

Timber, Railway and Bridge
Harris Tie and Timber Co....Ottawa, Ont.

Tires, Steel
Jas. Hutton & Co. ....Montreal.
Jas. W. Pyke & Co. ....Montreal.

Tools and Supplies
Canadian Fairbanks-Morse Co., Ltd.......
.................................Montreal.
Jas. Smart Mfg. Co. ......Brockville, Ont.
A. B. Jardine & Co. ......Hespeler, Ont.
Pratt & Whitney Co. ....Dundas, Ont.

Tools, Track
John Bertram & Sons Co. ....Dundas, Ont.
Canadian Steel Foundries, Ltd...Montreal.
B. J. Coghlin & Co. ....Montreal
F. H. Hopkins & Co. ....Montreal.
Mussens, Limited ....Montreal.
Tools, Pneumatic
The Holden Co., Ltd. ....Montreal.
Tools, Cast Steel
American Brake Shoe & Fdry. Co. Mahwah.
Track Equipment
Can. Ramapo Iron Ws. Niagara Falls, Ont.
Tramway Equipment
J. J. Gartshore ....Toronto.
Transformers
Allis-Chalmers-Bullock Ltd......Montreal.
Geo. C. Royce ....West Toronto, Ont.
Transmission Appliances
Canadian Fairbanks-Morse Co., Ltd.......
.................................Montreal.
Trolley Guards
Ohio Brass Co. ....Mansfield, Ohio.
Trolley Poles, Steel
Dorner Railway Equip. Co....Chicago, Ill.
Trolley Wheels
Tallman Brass & Metal Co. Hamilton, Ont.
Trucks
Corbet Fdry. Co. Ltd. ..Owen Sound, Ont.
Jas. Smart Mfg. Co. .....Brockville, Ont.
Trucks, Electric Car
Baldwin Locomotive Works..Philadelphia.
Canadian Steel Foundries, Ltd...Montreal.
Trusses, Roof
Canadian Bridge Co. ....Walkerville, Ont.
Cleveland Bridge & Eng. Co. Ltd. Cleveland
Dominion Bridge Co. ....Montreal.
Tubes, Boiler
Jas. W. Pyke & Co. ....Montreal.
Turbines, Steam
Allis-Chalmers-Bullock Ltd......Montreal.
Turnbuckles
Canadian Steel Foundries, Ltd...Montreal.
Canadian Bridge Co. ....Walkerville, Ont.
Dominion Bridge Co. ....Montreal.
Typewriters
Royal Typewriter Co............New York.
Valves
Consolidated Car Heating Co..Albany, N.Y.
Detroit Lubricator Co. ......Detroit, Mich.
Valves, Angle and Globe
Detroit Lubricator Co. ......Detroit, Mich.
Kerr Engine Co. ....Walkerville, Ont.
Nathan Manufacturing Co. ....New York.
Valves, Brass Gate
Detroit Lubricator Co. ......Detroit, Mich.
Kerr Engine Co. ....Walkerville, Ont.
Valves, Check
Nathan Manufacturing Co. ....New York.
Valves, Iron and Brass
Canadian Fairbanks-Morse Co., Ltd.......
.................................Montreal.

Valves, Iron Gate
Detroit Lubricator Co. ......Detroit, Mich.
Kerr Engine Co. ....Walkerville, Ont.

Valves, Locomotive Pop
T. McAvity & Sons ....St. John, N.B.
Taylor & Arnold ....Montreal.

Valves, Steam -
Detroit Lubricator Co. ......Detroit, Mich.
Nathan Manufacturing Co. ....New York

Vanadium Steels
American Vanadium Co. ..Pittsburgh, Pa.

Varnishes
The Dougall Varnish Co., Ltd....Montreal.

Velocipedes
Kalamazoo Ry. Sup. Co..Kalamazoo, Mich
Ventilators, Car
Burton W. Mudge & Co. ....Chicago, Ill.
Vessels
Polson Iron Works, Ltd. ....Toronto
Wagons, Dump
Western Wheeled Scraper Co..Aurora, Ill.
Washers
Steel Co. of Canada, Ltd....Hamilton, Ont.
Waste
B. J. Coghlin & Co. ....Montreal.
N. L. Piper Railway Supply Co...Toronto.
Water Softeners
Babcock & Wilcox ....Montreal.
L. M. Booth Co. ....Chicago, Ill.
Dearborn Drug & Chemical Co...Chicago.
Welding
Goldschmidt Thermit Co. ....Toronto.
Wheelbarrows
F. H. Hopkins & Co. ....Montreal.
Wheels, Car
Canada Iron Corporation, Ltd....Montreal.
Canadian Car & Foundry Co.....Montreal.
Jas. W. Pyke & Co. ....Montreal.
Wheels, Locomotive
Canada Iron Corporation, Ltd....Montreal.
Wheels, Re-inforced Pressed Steel
Kalamazoo Ry. Sup. Co...Kalamazoo, Mich.
White Lead
Steel Co. of Canada, Ltd. ..Hamilton, Ont.
Windlasses ..
Dake Engine Co.......Grand Haven, Mich.
Windmills
Ontario Wind Engine & Pump Co. Toronto
Wire
American Vanadium Co. ..Pittsburgh, Pa.
Titanium Alloy Mfg. Co....Pittsburgh, Pa.
Wire and Wire Rope
Canada Wire & Cable Co., Ltd. ..Toronto.
Dominion Wire Rope Co. ....Montreal.
Mussens, Limited ....Montreal.
The Wire & Cable Co.............Montreal.
Wire, Brass, Iron and Steel
Steel Co. of Canada, Ltd. ..Hamilton, Ont.
Wire, Copper
Canada Wire & Cable Co., Ltd. ..Toronto.
E. F. Phillips Elec. Works, Ltd...Montreal.
The Wire & Cable Co.............Montreal
Wire, Electric
Chapman & Walker, Ltd ....Toronto.
E. F. Phillips Elec. Works, Ltd...Montreal.
The Wire & Cable Co. ....Montreal
Wire Goods, Bright
Steel Co. of Canada, Ltd. ..Hamilton, Ont.
Wire, Insulated, Copper
Canada Wire & Cable Co., Ltd. ..Toronto.
E. F. Phillips Elec. Works, Ltd...Montreal.
The Wire & Cable Co. ....Montreal.
Wire Rope Clips
American Hoist & Derrrick Co. ..St. Paul.

Wire, Telegraph and Telephone
Canada Wire & Cable Co., Ltd....Toronto.
Chapman & Walker, Ltd ....Toronto.
E. F. Phillips Elec. Works, Ltd...Montreal.
The Wire & Cable Co. ....Montreal.

Wire, Transmission and Trolley
Canada Wire & Cable Co., Ltd....Toronto.
Chapman & Walker, Ltd ....Toronto.
The Wire & Cable Co. ....Montreal.

Wrenches, Cast Steel
American Brake Shoe & Fdry. Co. Mahwah.

Yachts
Polson Iron Works, Ltd. ....Toronto.

The G. and S. W. Rwy., Albert Harbor Goods Station, Greenock, N.B.
"B. & W." 30 Tons Electric Travelling Goliath Crane, 70 Feet Span

BABCOCK & WILCOX
LIMITED
PATENT
Water Tube Steam Boilers
7,800,000 h.p. Land & } In use or
2,010,000 h.p. Marine } on order
Babcock & Wilcox also Manufacture
ELECTRIC CRANES
FOR DOCKS, RAILWAYS AND WAREHOUSES
White-Forster Water-Tube Marine Boilers
HEAD OFFICE FOR CANADA:
St. Henry, MONTREAL
TORONTO OFFICE
Traders Bank Building

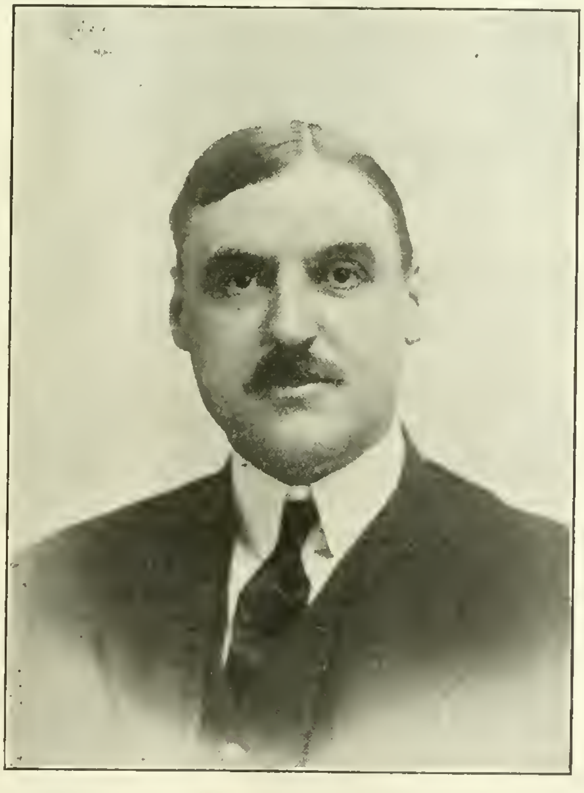
The Railway and Marine World

December, 1911.

INTERCOLONIAL RAILWAY ROUNDHOUSE PRACTICE.

By Frederick H. Moody.

Every organization of importance is operated on a systematic basis, each of the many systems in use being the outcome of years of experience in the devising of ways and means of handling the routine work to the best advantage. At the same time, these systems are usually of sufficient flexibility to be capable of meeting all or any of the numerous exigencies that arise in the daily practice of any art. Railways in particular have developed systematic business methods, probably to a greater degree than have the majority of business organizations that are more or less centralized. The outlying character of railway systems makes this possible.



Grant Hall,
Assistant General Manager, Canadian Pacific Railway
Western Lines.

As a unit, the railway organization comprises a systematic arrangement of branches that work harmoniously as a whole. Segregated, these branches contain minor sections, or wheels within wheels, so to speak, each in itself an organized unity. In the mechanical department of a large railway system there are numerous minor branches, one of the most important of which is that pertaining to the roundhouse, for it is upon this pivot that the whole operation of the system centres. It is here that the care and attention necessary to preserving the motive power in good order, is taken; in other words, it is the focal point of actual movement on the railway lines.

As an example of railway system as applied to roundhouse practice, the Intercolonial Ry. roundhouse at Moncton, N.B., has been selected as a good sample of what is being done by the Government system. This particular roundhouse was not selected because of its being the best on that line, for such is not the case, but because of the fact that it is the centre of the system, and handles more locomotives than any other point. These considerations in themselves, however, are immaterial, as the same routine system applies to all the roundhouses from Montreal to Halifax, St. John and Sydney. The Moncton roundhouse is in charge of C. White, Day Roundhouse Foreman, to whom the writer is indebted for the material contained in this article.

The locomotive, on the completion of the run, after being disconnected from its train, is taken by the engineer to the ashpit to have the fires drawn. Here, the engineer releases his charge, turning it over to the roundhouse hostler for further care between that point and the roundhouse. The hostler, with the ashpit men, cleans the ashpan, draws the fire and coals the tender.

The coaling station and ash combined at the Moncton roundhouse, and are of such a unique design that the arrangement will be briefly described, although it is foreign to the subject under treatment. The arrangement consists essentially of an elevated coal bin structure with a ground space about 20 ft. wide between the tracks. On each side of this coal tower there are two tracks, the inner one of each having an ashpit. Outside these double tracks are enclosed supports carrying a superstructure attached to the coal bin. Each of these outside supports carries an ash bin. Passing under the coal bin and four tracks, and running up through one of the outside enclosed supports, across the top of the superstructure and down the other outside support, there is a slowly moving chain of coal buckets, driven by a small engine in the tower. The ashes dropped from the locomotive ashpan into the pit may be further dropped into the chain bucket tunnel and carried up into the ash bin by the travel of the buckets. The ash bin may be unloaded by a gate in its bottom. Coal is unloaded from drop-bottom cars into the same tunnel through openings under the outer of the two outside tracks. Of course, these operations do not occur at the same time. The coal, being raised in a like manner to the ashes into its bin, is drawn again from a chute on to the tender. The bucket mouth of the chute holds just one ton, by which the quantity of coal drawn off is roughly measured.

The locomotive with ashes and fire drawn and re-coaled, is run into the roundhouse by the hostler. Sufficient steam is left in the boiler for this purpose. The turner at the roundhouse table sets the table for the track decided upon, and, having had the hostler run it in, proceeds to a board where the section in which the locomotive has been placed is noted. This board is divided into three sections corresponding to the roundhouse sections, and under the required one the locomotive number is placed.

Meanwhile, the engineer, after leaving his locomotive on the ashpit, proceeds to the office, where an engineer's report book is kept. The engineer is responsible for all the paraphernalia and parts of the locomotive above the running board, and if any defects are noticed at any point it is his duty to make a report covering his observations in the report book. As illustrative of this, and the method followed, an example has been selected from the report book. This book has several columns covering the two opened pages.

The first three columns contain the date, locomotive number, and engineer's report, calling for repairs or examination, followed by his signature. Thus:

> "Oct. 19. 276. Pack air end of pump; examine left tender feed hose, as it doesn't appear to be getting sufficient water; grind left boiler check; make sand to work on right side; and blow out tubes.
> "T. W. McBeath."

This report, as left by the engineer, is looked up by the machine foreman, who details the necessary mechanics to attend to this work. The next column is therefore left for the report of these workmen on the completion of their respective tasks. As for example:

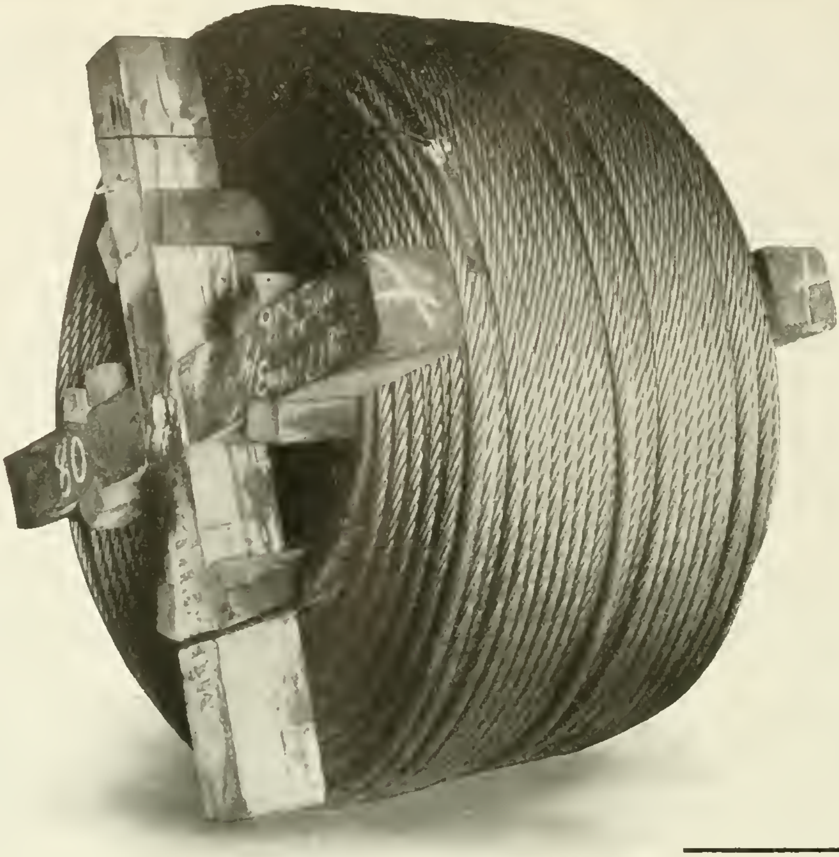
> "Air end of pump packed. Oct. 19.
> "Millish and Anderson."
> "Tender feed examined. Oct. 19.
> "Hines and Parkinson."
> "Sand box and traps cleaned. Oct. 19. "Anderson and Millish."

While the repair work on the faults discovered by the engineer is being performed, the roundhouse inspector sets to work to thoroughly overhaul the locomotive for any detectable flaws. The engineer being responsible for all above running board, the inspector only examines the part below, going thoroughly over the wheel and outside parts, and finally working underneath to the running gear. Any defects are noted in the next column of the book, as, for example:

> "Oct. 19. 276. Tighten left beading and trailing wedge bolts; overhaul and level grates; tighten tail-casting bolts in tender.
> "J. McClintock."

Following this there is a column for the reports of the mechanics set to do these tasks, different pairs being assigned to the locomotive and tender to specialize their duties:

> "Work done. Oct. 19.
> "McKenzie and Fram."
> "Work done on tender. Oct. 19.
> "Hines and Parkinson."



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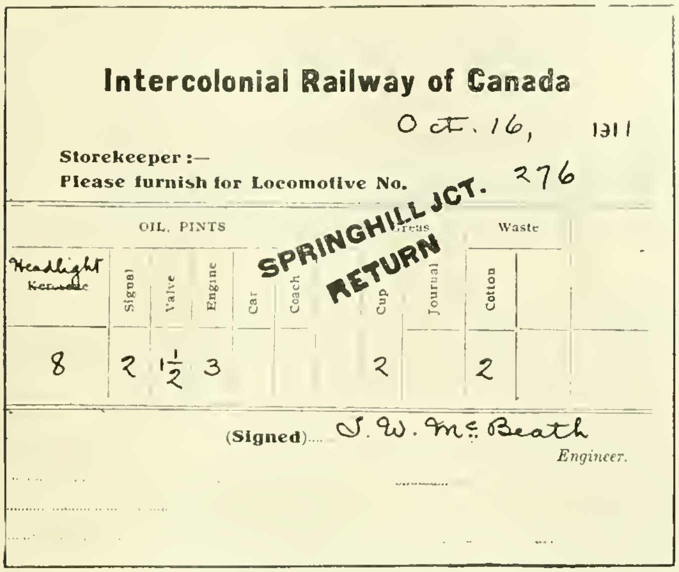
In addition to this inspection by the roundhouse inspector, a boilermaker looks over every boiler, both internally and externally, after each trip. Every 14 days the boilers are thoroughly washed out and all the staybolts tightened.



Intercolonial Railway of Canada

Oct. 16, 1911

Storekeeper :—
Please furnish for Locomotive No. 276

SPRINGHILL JCT.
RETURN

OIL, PINTS						Greas		Waste	
Headlight ~~Kerosene~~	Signal	Valve	Engine	Car	Coach	Cup	Journal	Cotton	
8	2	1½	3			2		2	

(Signed) J. W. McBeath
Engineer.

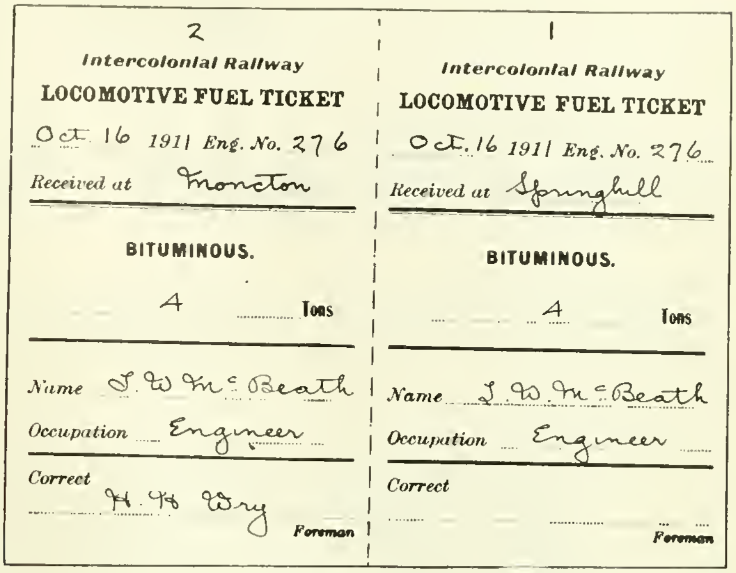
Fig. 1. Locomotive Engineer's Requisition Blank on Storekeeper for Run Supply.

With the roundhouse attention given the locomotive as outlined in the above, Intercolonial freight locomotives will run 80,000 miles, and express locomotives 100,000 miles before requiring complete overhauling. About the time half these mileages are completed, however, the locomotives are called in to the shops for what are termed "specific" repairs, which include the replacing of such parts as tires, piston rods, and similar members that are subject to proportionately greater wear than are other parts of the locomotive.

The locomotive after this roundhouse attention is ready for its next run. Alongside of the board mentioned earlier, on which the locomotive locations are listed, there is another board containing three columns: locomotive, train and hour of departure. The engineer, knowing his particular train or run, when he reports for duty, ascertains the locomotive to be used by consulting this board, which is kept posted by the roundhouse foreman. The authority of the latter comes from the traffic department, which advises him of the number of cars to be hauled, giving him a means of selecting the locomotive most suited to the purpose.

The sundry stores required by the engineer have been computed for every run on the system, so that each engineer is kept within a certain allowance. This schedule of stores for the runs is posted in the foreman's office. The engineer, knowing his run, jots down the stipulated quantities on a form provided, as shown in fig. 1. This slip is handed over to the storekeeper in exchange for the supplies.

The locomotive is watered in the roundhouse, and being previously coaled, is ready for its run. Consider the same run as that previously dealt with—from Moncton to Springhill Jct. and return. When Springhill Jct. is reached, the coal supply will require replenishing, which is accomplished at the Springhill Jct. coal chutes. As a check on this, a slip such as that shown in fig. 2 (where two are illustrated) is made out and handed to the station agent. This slip (no. 1) the station agent signs and forwards to the fuel agent at Moncton for the latter's records. Similarly, on return to Moncton, the locomotive is re-coaled, and while the engineer does not use this particular coal, nevertheless, on account of that taken out at the beginning of the run, he is held for this amount, and slip no. 2, fig. 2, made out, and as there is a coal foreman there, it is given to him to sign and forward to the fuel agent.



2

Intercolonial Railway
LOCOMOTIVE FUEL TICKET
Oct 16 1911 Eng. No. 276
Received at Moncton

BITUMINOUS.

4 **Tons**

Name J. W. McBeath
Occupation Engineer
Correct H. H. Wry **Foreman**

1

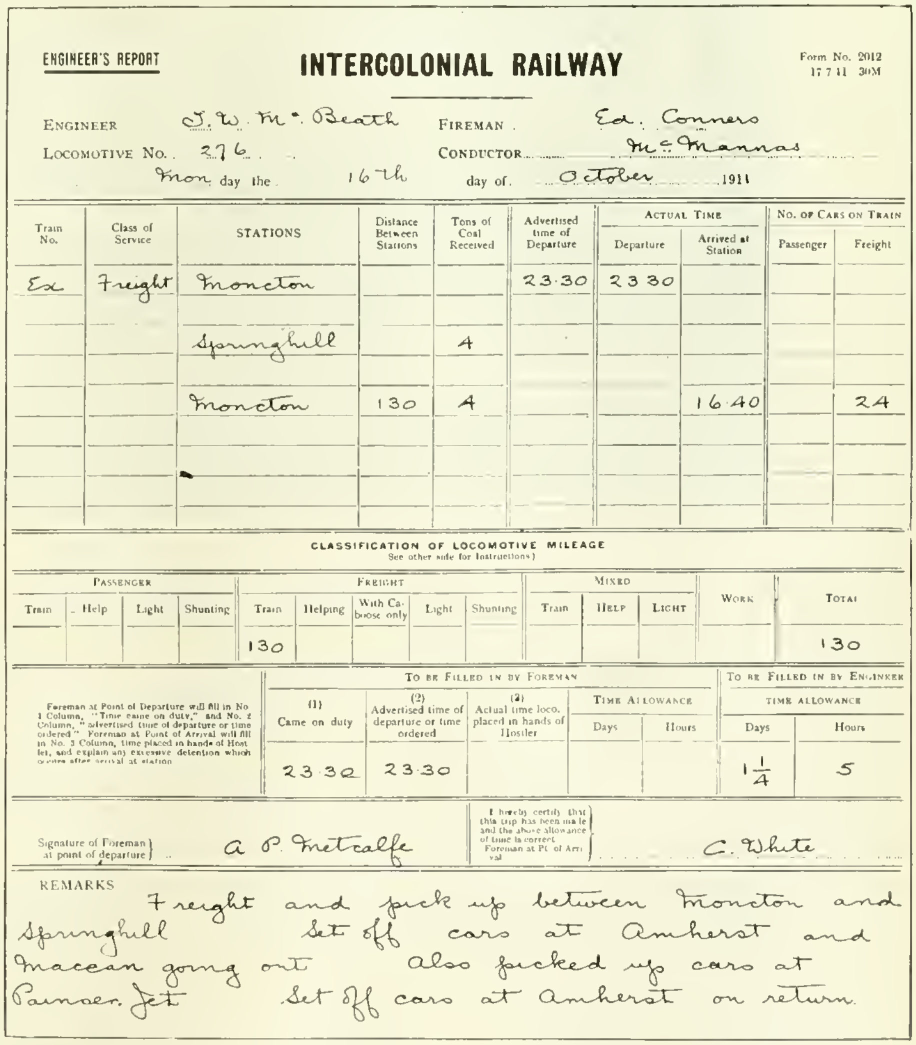
Intercolonial Railway
LOCOMOTIVE FUEL TICKET
Oct. 16 1911 Eng. No. 276
Received at Springhill

BITUMINOUS.

4 **Tons**

Name J. W. McBeath
Occupation Engineer
Correct
Foreman

Fig. 2. Fuel Ticket given by Locomotive Engineer to Coal Foreman.



ENGINEER'S REPORT

INTERCOLONIAL RAILWAY

Form No. 2012
17 7 11 30M

Engineer J. W. McBeath
Fireman Ed. Conners
Locomotive No. 276
Conductor McMannas
Mon day the 16th day of October 1911

Train No.	Class of Service	Stations	Distance Between Stations	Tons of Coal Received	Advertised time of Departure	Actual Time: Departure	Actual Time: Arrived at Station	No. of Cars on Train: Passenger	No. of Cars on Train: Freight
Ex	Freight	Moncton			23.30	23 30			
		Springhill		4					
		Moncton	130	4			16.40		24

CLASSIFICATION OF LOCOMOTIVE MILEAGE
(See other side for Instructions)

Passenger				Freight					Mixed			Work	Total
Train	Help	Light	Shunting	Train	Helping	With Caboose only	Light	Shunting	Train	Help	Light		
				130									130

Foreman at Point of Departure will fill in No. 1 Column, "Time came on duty," and No. 2 Column, "advertised time of departure or time ordered." Foreman at Point of Arrival will fill in No. 3 Column, time placed in hands of Hostler, and explain any excessive detention which occurs after arrival at station

To be Filled in by Foreman					To be Filled in by Engineer	
(1) Came on duty	(2) Advertised time of departure or time ordered	(3) Actual time loco. placed in hands of Hostler	Time Allowance: Days	Time Allowance: Hours	Time Allowance: Days	Time Allowance: Hours
23.30	23.30				1¼	5

Signature of Foreman at point of departure } a P. Metcalfe

I hereby certify that this trip has been made and the above allowance of time is correct. Foreman at Pt. of Arrival } C. White

REMARKS
Freight and pick up between Moncton and Springhill Set off cars at Amherst and Maccan going out Also picked up cars at Painsec Jct Set off cars at Amherst on return.

Fig. 3. Locomotive Engineer's Report Sheet containing Essential Features of the Run.

Formerly, another stub was attached for the engineer's own use, but now another more complete form, one of which is shown in fig. 3, is used for that purpose. Reference to this sheet will show that a very complete record of the run is contained on this report. In this particular case it was not one

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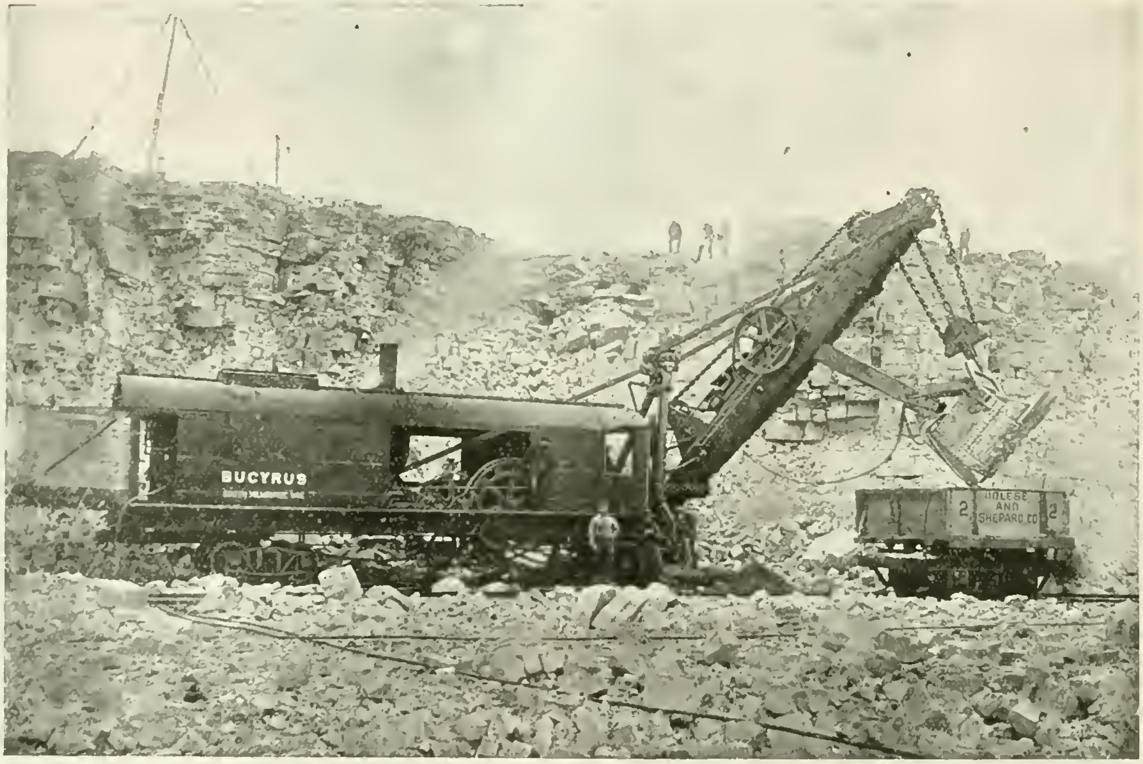

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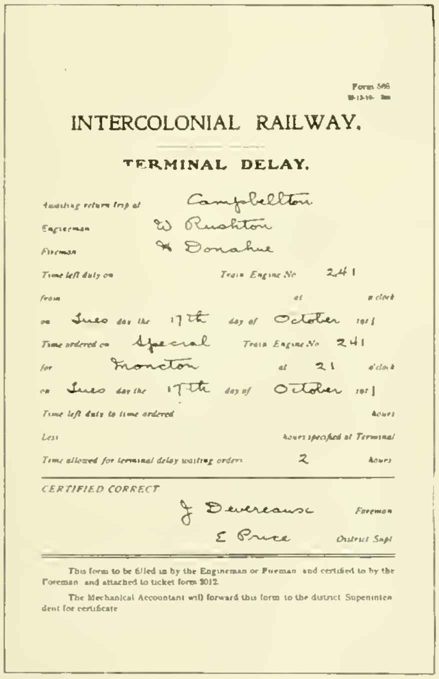
of the regular passenger, mixed or freight trains designated by the numerals 1, 2, and 3, but an extra freight. It might also have been cab (caboose), work, push, help or light, according to conditions. The stations are filled in, also the mileage return, and the coal taken on at terminals. The advertised time and actual time (the same in this case) are next filled in, followed by time of arrival back at point of departure.

As the most important function of this engineer's report sheet is to furnish the motive power department with an accurate knowledge of the locomotive mileage, particular attention is paid to that part of the report. Special instructions relative to the proper classification of the mileage are printed on the back of the report sheet, and being instructive from the standpoint of just how this railway arrives at its locomotive mileage, these instructions are given in full as follows:



Form 598

INTERCOLONIAL RAILWAY.

TERMINAL DELAY.

Awaiting return trip at Campbellton

Engineman W Rushton

Fireman H Donahue

Time left duty on *Train Engine No* 241

from *at* *o'clock*

on Tues *day the* 17th *day of* October 1911

Time ordered on Special *Train Engine No* 241

for Moncton *at* 21 *o'clock*

on Tues *day the* 17th *day of* October 1911

Time left duty to time ordered *hours*

Less *hours specified at Terminal*

Time allowed for terminal delay waiting orders 2 *hours*

CERTIFIED CORRECT

J Devereause *Foreman*

E Price *District Supt*

This form to be filled in by the Engineman or Fireman and certified to by the Foreman and attached to ticket form 2012.

The Mechanical Accountant will forward this form to the district Superintendent for certificate

Fig. 4. Terminal Delay Slip used when waiting over before Return Trip.

"When a train is handled by one locomotive only, the mileage of that locomotive between stations is classifiable as 'Train.' This train mileage represents the miles over which the traffic is hauled as distinguished from the locomotive.

"Mileage of a locomotive which starts on a trip with caboose, for the purpose of hauling traffic to the end of its run, is classified as 'Train'; if incidental to the run, the locomotive makes part of the run between as described, with caboose only, the mileage should be classified as 'Train' also.

"When a locomotive runs dead-head from one lay-over point to another, hauling caboose only, such mileage is to be classified as 'Freight with caboose only.'

"When a train is divided—the locomotive proceeding with a portion of the train and returning 'Light' for the remaining portion—the mileage while hauling first section is to be classed as 'Train'; while running without attachment to be classed as 'Light'; while hauling remainder to be classed as 'Helping.'

"The mileage of a 'Helping' locomotive while running 'Light' to be classed as 'Light' under 'Passenger,' 'Freight,' or 'Mixed,' according to the service necessitating the run.

"Work includes mileage of engines hauling of track construction material, picking up wrecks, running snow-plough, clearing and hauling snow; also service of engine and enginemen hauling pay train, and special non-revenue trains, etc.

"The classification should show the actual miles made by the locomotive without reference to the time for which the enginemen are to be paid.

"Shunting engines should be allowed mileage at the rate of six miles per hour, that is, a locomotive shunting for ten hours should be shown in column headed 'Shunting' as having run sixty miles, and specified as 'Passenger' or 'Freight,' as the case may be.

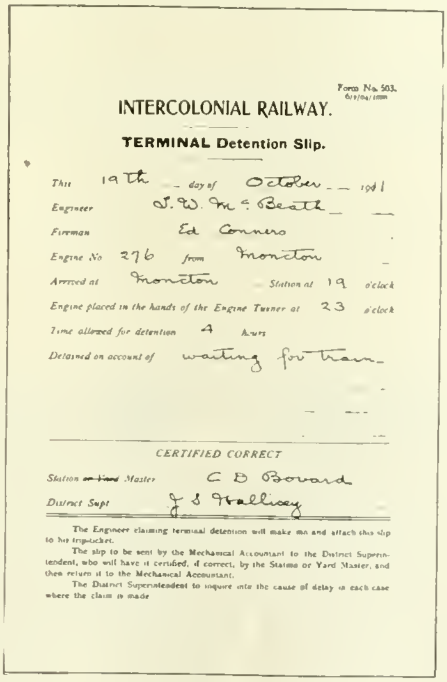
"No allowance shall be made for shunting of a road locomotive between terminals, that is, an engine running between Moncton and St. John should show no mileage for any time which may have been made at any way points shunting cars into or out of the train."

The above instructions thoroughly cover the I.R.C. classification of mileage. It is from this that the engineer knows the proper column to mark down the mileage.

The time allowance is based on the ruling that 100 miles constitute a 10-hour run for this class of traffic. This means 1¼ days allowance for the 130-mile run. The time allowance gives the engineer 1¼ days' pay, even if the run were made in less than this specified time; that is to say, there is a certain minimum pay for a given run. Should the time exceed that allowed, extra pay is given—in this case for 5 hours.

The Moncton roundhouse foreman (night, in this case) signs at time of departure, and also does likewise on return.

At the bottom of the forms, space is provided for sundry remarks concerning the trip. This form, filled in with actual operating information from a run, gives an idea of the operation of the system. This completed card is forwarded to the motive power department and there entered into the locomotive record book, which, of course, is out of the scope of this article.



Form No. 503.

INTERCOLONIAL RAILWAY.

TERMINAL Detention Slip.

This 19th *day of* October 1911

Engineer J. W. McBeath

Fireman Ed Conners

Engine No 276 *from* Moncton

Arrived at Moncton *Station at* 19 *o'clock*

Engine placed in the hands of the Engine Turner at 23 *o'clock*

Time allowed for detention 4 *hours*

Detained on account of waiting for train

CERTIFIED CORRECT

Station ~~or Yard~~ Master C D Bovard

District Supt J S Hallisey

The Engineer claiming terminal detention will make out and attach this slip to his trip-ticket.

The slip to be sent by the Mechanical Accountant to the District Superintendent, who will have it certified, if correct, by the Station or Yard Master, and then return it to the Mechanical Accountant.

The District Superintendent to inquire into the cause of delay in each case where the claim is made

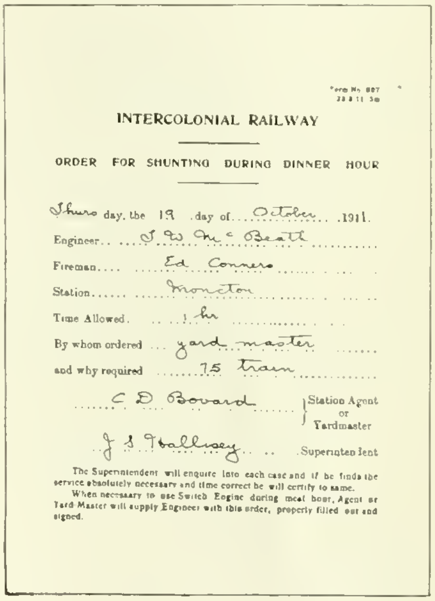
Fig. 5. Terminal Detention Slip for use when Detained under Orders.

The forms shown in figs. 4, 5 and 6 are others used by the engineers under different circumstances. That in fig. 6, the terminal delay form, is used when an engineer, having completed half of a return trip, is delayed for any considerable period before the train he is to take is made up. In fig. 4, Engineer Rushton should have left Campbellton on the return half of his run at 21 o'clock, but on account of delay, he was held at Campbellton for 2 hours before his train was ordered out. No allowance is made for such terminal delay unless the period of delay exceeds 10 hours.

The terminal detention slip in fig. 5 is intended to meet a different kind of terminal delay. In this case, the train has been made up and is under orders, but has to wait four hours to let a train pass. In this case, four hours detention is allowed. The same slip is used when the engineer, after leaving his train, is blocked in the yard and prevented from reaching the ashpit, where he leaves the engine.

There is also a slip, corresponding to the shop overtime slip, shown in fig. 6. It is used when it is necessary to have the switching engine in operation during meal hour. All these three last described slips are handed in to the roundhouse foreman, as were the others.

This system would appear to be quite complete, and all that could be desired. As a means of exchanging ideas it would be well if officials of other roads—or of this road—would make comments on the system in order that its good and bad features might be discovered. A description of other systems would likewise be appreciated, that a comparison might be drawn. The discussion that would ensue would doubtless prove of value to all. Any communications on the subject will be appreciated by The Railway and Marine World.



Form No. 807

INTERCOLONIAL RAILWAY

ORDER FOR SHUNTING DURING DINNER HOUR

Thurs day, the 19 day of October 1911.

Engineer J. W. McBeath

Fireman Ed Conners

Station Moncton

Time Allowed 1 hr

By whom ordered yard master

and why required 75 train

C D Bovard Station Agent or Yardmaster

J S Hallisey Superintendent

The Superintendent will enquire into each case and if he finds the service absolutely necessary and time correct he will certify to same.

When necessary to use Switch Engine during meal hour, Agent or Yard Master will supply Engineer with this order, properly filled out and signed.

Fig. 6. Order issued to Locomotive Engineers for Shunting during Meal Hour.

◆

Train Rule Examinations Made Easy is the title of a 234 pg. book, 4 by 6½ ins. by G. E. Collingwood. It is a complete treatise on train rule instructors, superintendents, trainmasters, conductors, enginemen, brakemen, switchmen, train dispatchers, operators and others, and deals with the American Railway Association's standard code of train rules. The text is divided into three parts, of which the first explains the meaning of the rules, being really a rewriting of the subject matter of the code in the form of a connected exposition. The second part presents a set of examination questions designed to completely cover the code. Answers to the questions are given separately in the pages following. The standard code is reprinted as the third part of the book. The text is followed by about 25 pages of diagrams showing hand, flag and lamp signals and train signals. The book is published by the Norman W. Henley Co., New York, at $1.25 and can be obtained through the Railway and Marine World's book department.

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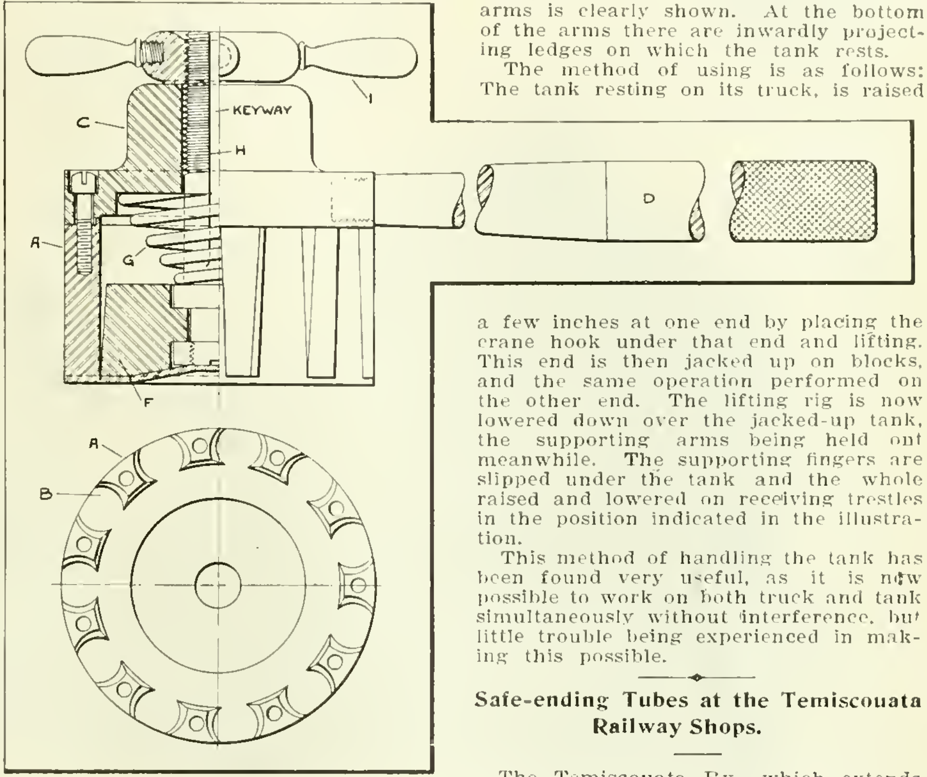
Triple Valve Bushing Roller used by the Pere Marquette Rd.

The accompanying illustration shows a triple valve bushing roller as used at the Pere Marquette Rd. shops at St. Thomas, Ont. A glance will show that it closely resembles the usual flue expander of the roll type, only in this case the roller is better designed, with the object in view of giving a more uniformly distributed radial pressure while rolling the bushing of the triple valve into place.

The main part of the roller is the body A, in which are 11 longitudinally converging tapered holes containing correspondingly tapered pins that fit loosely. The holes are made longitudinally converging in order that the outer surface of the rollers might be parallel with the centre line of the roller body. This body A is attached by cap screws to a top C, the latter having a handle D, by which the device is manipulated. Inside the body A, there is a tapered part F, up against which the rollers bear on the inside. This part F is kept normally in its lower position by the spring G. Bolt H with a loose connection in F, raises the latter by the handwheel I, thereby forcing out the rollers for rolling. A keyway in the bolt H keeps the latter from revolving with the wheel I. The size shown is for rolling 3½-inch bushings.



Triple Valve Bushing Roller.

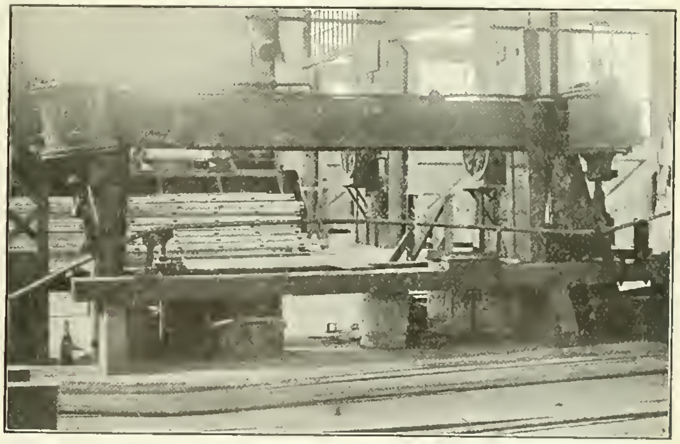
◆

Bending Truss Rods at C.P.R. Angus Shops.

The truss rods commonly used under freight cars are formed from round bar stock, each having an end threaded right hand with the other ends which engage in the turnbuckle, threaded right and left hand respectively to give the draw. These truss rods have two bends of a few degrees—at the outer end, to pass horizontally through the end sill, and inner end, to pass horizontally toward the centre, where they are tightened up by the turnbuckle. The bends occur at the truss rod posts placed on top of the body bolster and under needle beams.

Many ways have been employed for giving these bends to the rod, one of the principal of which, where but few rods are to be bent, is to use the bulldozer, with forms for the purpose, bending cold. Many other methods are familiar to those engaged in this work.

At the C.P.R. Angus shops, Montreal, in the freight car department, of which N. Pierson is foreman, a simple but effective device is employed for the purpose. Referring to the accompanying illustration, the device is mounted on heavy scantling located between two of the erecting tracks. To the upper beam of the supporting frame two old air cylinders are attached a distance apart equal to the distance between bends. On the table of the frame there are three knife edges, the outer located a little further apart than the distance between bends. The plungers in the air cylinders have formed ends to fit on the rod, so that when the air is turned on, a correctly bent truss rod results. Air is controlled by the valve on the top of the upper cross beam. A three-way connection leads to each end, so that both cylinders operate simultaneously.



Rig for Bending Freight Car Truss Rods.

Crane Attachment for Raising Tanks.

Crane Attachment for Tanks at Intercolonial Ry. Shops.

In the I.R.C. boiler and tank shop at Moncton, N.B., a very useful attachment is used for lifting tender tanks bodily from their trucks. As the illustration shows, the supporting cross member of the attachment is a heavily ribbed steel casting designed to support a much heavier load than that to which it will be subjected in practice. This cast cross beam has a straddling link at the centre which slips over the crane hook.

Pendant at each end of the cross beam there are two supporting arms built up of structural shapes. The connection between beam and supporting arms is through a pair of links at each end, thereby leaving the supporting arms free to be swung out or drawn straight out. The construction of the arms is clearly shown. At the bottom of the arms there are inwardly projecting ledges on which the tank rests.

The method of using is as follows: The tank resting on its truck, is raised a few inches at one end by placing the crane hook under that end and lifting. This end is then jacked up on blocks, and the same operation performed on the other end. The lifting rig is now lowered down over the jacked-up tank, the supporting arms being held out meanwhile. The supporting fingers are slipped under the tank and the whole raised and lowered on receiving trestles in the position indicated in the illustration.

This method of handling the tank has been found very useful, as it is now possible to work on both truck and tank simultaneously without interference, but little trouble being experienced in making this possible.

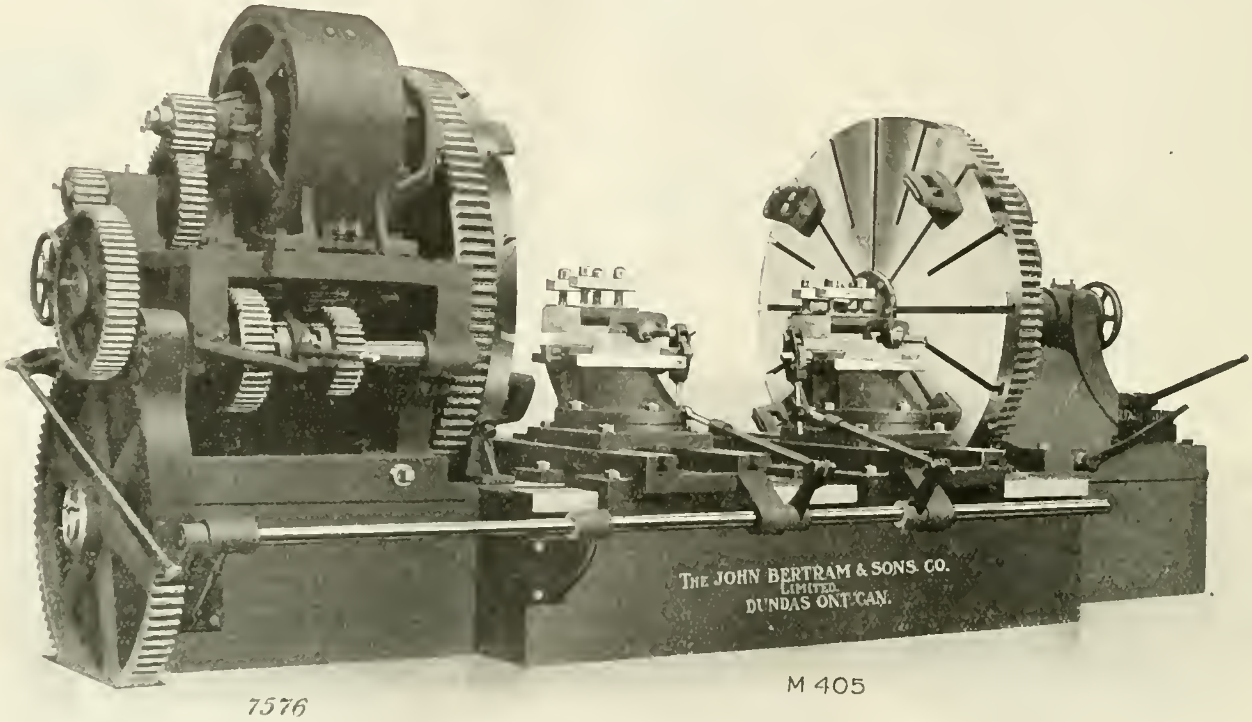
◆

Safe-ending Tubes at the Temiscouata Railway Shops.

The Temiscouata Ry., which extends 113 miles southerly from Riviere du Loup, Que., to Connors, N.B., near the Maine border, passing Temiscouata Lake and tapping a good portion of the big game district of New Brunswick, naturally has not a very heavy traffic, its freight for the most part consisting of lumber, which is plentiful along the line. The tractive rolling stock of the line comprises nine locomotives, a sufficient number to handle all the traffic. The shop at Riviere du Loup, under W. J. Walsh, Master Mechanic, usually has one of these locomotives dismantled for repairs, the locomotives successively undergoing this shopping.

Such conditions scarcely warrant much special machinery; this applies especially to the forge shop, where only one blacksmith and helper are employed. The few tubes to be safe-ended do not call for special semi-automatic machines such as are found in many shops. However, much ingenuity has

LOCOMOTIVE AND CAR SHOP MACHINERY


THE JOHN BERTRAM & SONS CO.
LIMITED.
DUNDAS ONT. CAN.
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80-inch Double Driving Wheel Lathe
Motor Driven

We install complete equipments for Machine Shops, also Locomotive and Car Shops.

Write for particulars.

The John Bertram & Sons Co.
Limited
DUNDAS, ONTARIO, CANADA

Sales Agents: The Canadian Fairbanks Co., Limited

been used in devising ways and means of doing the necessary work, and it may safely be said the work as done here is of a very superior character, even though not produced very expeditiously.

The tubes, as removed from the locomotive boiler, are carried to the blacksmith shop in an adjoining building. One of the bad ends of each tube is removed by the aid of the hand pipe cutters commonly found in small pipe shops. This squared end is then heated to a forging heat in an old-fashioned bellows forge fire, following which it is swaged to a taper end by forging on the horn of the anvil with a light blacksmith hammer. The safe ends are cut from a long tube in an engine lathe and brought to the blacksmith shop. Mr. Walsh proposed flaring this safe end to create a better initial fit between tube and safe end, but the blacksmith claimed better results could be obtained by leaving the end of the safe end squared.

The safe end is next slipped on the taper end of the tube and the point of juncture placed in the forge fire; it is here that the welding takes place. When the two parts are heated to a welding heat, the helper gives the safe end a blow with his heavy hammer, driving the safe end up on to the tube, this operation uniting the parts into a good weld. The most interesting part of the operation follows. The blacksmith, with a light hammer of about ¾ lb. weight, and having a handle about 2 ft. in length of ¼ in. iron, strikes the protruding seam repeated light blows while the tube is still in the fire, turning it meanwhile so that all parts of the pipe may receive like treatment. This completes the weld, and when withdrawn from the fire the seam is barely perceptible. A sizing iron of the minimum inside diameter of the tube is next entered into the tube, and if tight, is driven in to give the tube the correct size; this is seldom required. At the same time the blacksmith scrapes away the scale, so that any flaws might be detected.

The tube thus treated is stood vertically on its bad end to cool. Following this, the bad end is removed to the required length by the hand pipe cutters, the same as the other bad end. The tube is then ready to be put back in the boiler.

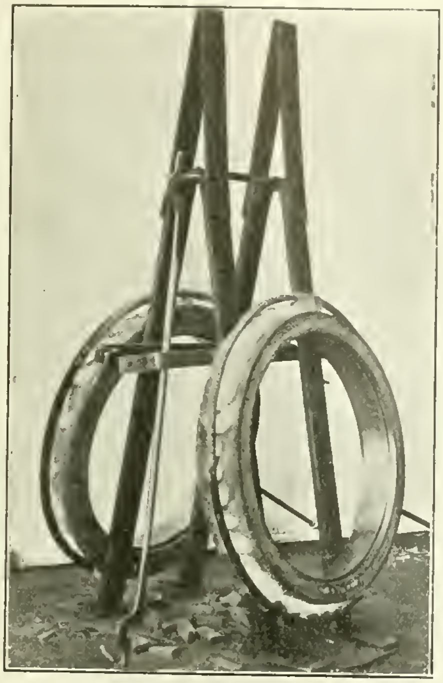
This operation, while slow, gives excellent results, and should appeal to the master mechanics of small lines where the volume of repairs is light.

◆

Press reports from Ottawa, Nov. 10, stated that the C.P.R. was in negotiation with the Government for the purchase of the Government peat plant at Alfred, Ont., with the view of continuing the industry on commercial lines, to supply Montreal, in particular, with peat fuel.

Stand for Heating Tires at Intercolonial Ry. Shops.

A very convenient stand for heating locomotive and other tires which is used at the I.R.C. shops at Moncton, N.B., is shown in the accompanying illustration. The tires, instead of being laid on their edges, with an encircling heating hoop, are stood on edge, as indicated, the construction of the supporting projections being such as not to interfere with the proper heating of the rim, the tire resting on its flange. In place of fuel oil, gasoline is used for the heating medium, this being found more satisfactory, producing no smoke, and leaving no dirt, as is customary with fuel oil. These considerations are necessary in this particular case, as all the heating and mounting is performed in the locomotive shop and not in an outbuilding, as is frequently done.



Stand for Heating Tires.

On being heated, the gasoline is turned off and the hoops removed. The tires, which, as noted, are heated in pairs, are lifted individually to the prepared axle and wheel centres on a trestle. A special lifting arrangement on a jib crane is used. This consists of a hook arrangement, with an upwardly projecting sharp point, which is placed inside the wheel on the shrinking surface. Being lifted on this point hook to the awaiting centres, no obstacle is presented to the free slipping on of the tire, the hook being withdrawn when the tire is started.

The stand is of sufficient size to accommodate all sizes of tires for drivers or truck wheels. The stand also forms a support for holding the distance gauge. Altogether, it makes a very neat and compact arrangement.

◆

Renewing Air Hose at the Michigan Central Ry. Shops, St. Thomas.

Each shop has its own method of doing the routine work that falls to its lot. One of the commonest of these jobs is the renewing of old hose, removing the old section and using the same connections on a new piece. The use to which the hose has been put through its period of usefulness is such that the parts of the connections become very materially rusted. This is particularly the case with the clamps that secure the connection to the hose. So rusted are the holding bolts that they are of no further use for new hose. Thus, nothing would be gained by unscrewing the nut off the bolt, making it cheaper to cut it in two instead, and then simply spread the clamp to slip the hose out.

The device for cutting the bolts at the M.C.R. shops at St. Thomas, Ont., is shown in fig. 1, the idea having been taken from the Pere Marquette Rd. shops, where a similar device is in use. A vise-like structure has a knife-jaw A solid with the frame, and a similar knife-jaw B movable with respect to the other jaw, as in a bench vise. The movable jaw is actuated by a plunger in the air cylinder C. In use, the bolt to be cut is held up against the knife edge of jaw A. Air is then turned on full in cylinder C, which causes knife-edge of jaw B to give a heavy chisel blow on the bolt, which, if repeated a couple of times, severs the bolt, removing it from the clamp. The stationary jaw may then be used as an anvil on which to hammer the jaw for spreading the bolt-connecting surfaces to facilitate removal. On the completion of this the hose connection may be held between the knife edges by bringing the two together gently on the connection in this position, twisting off the hose from the connection.

Both connections being removed, they are taken to a device of the form indicated in fig. 2. This mechanism is not a new one, for it is quite extensively used; but as there are some shops where its use is still unknown, a description of it is being included in this article. The coupler connection is laid in a stationary casting A, shaped to receive it, and holding it central with the rest of the device. The train-line connection is held

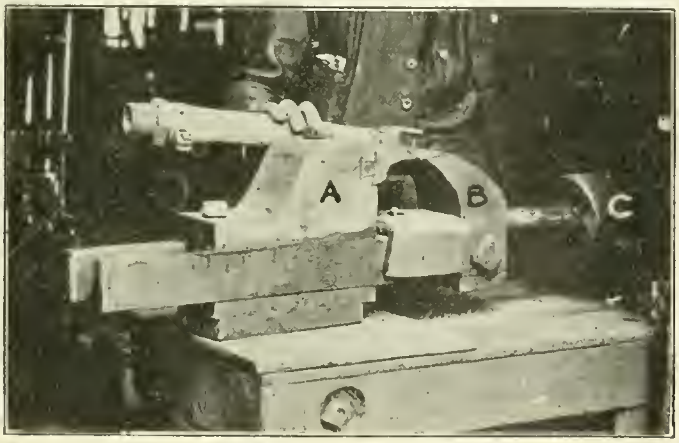


Fig. 1. Cutting off the Old Clamp Bolts.

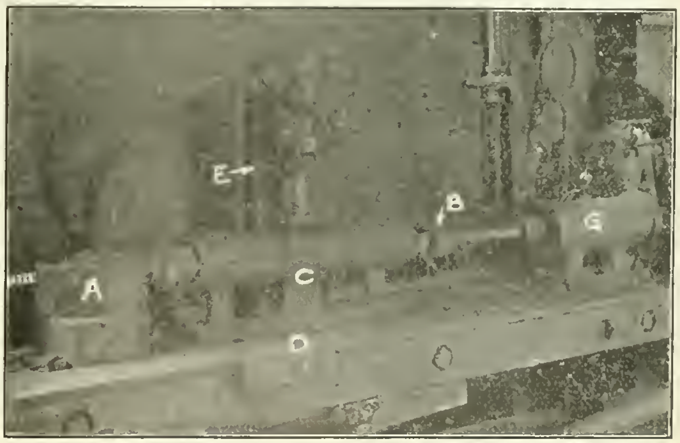
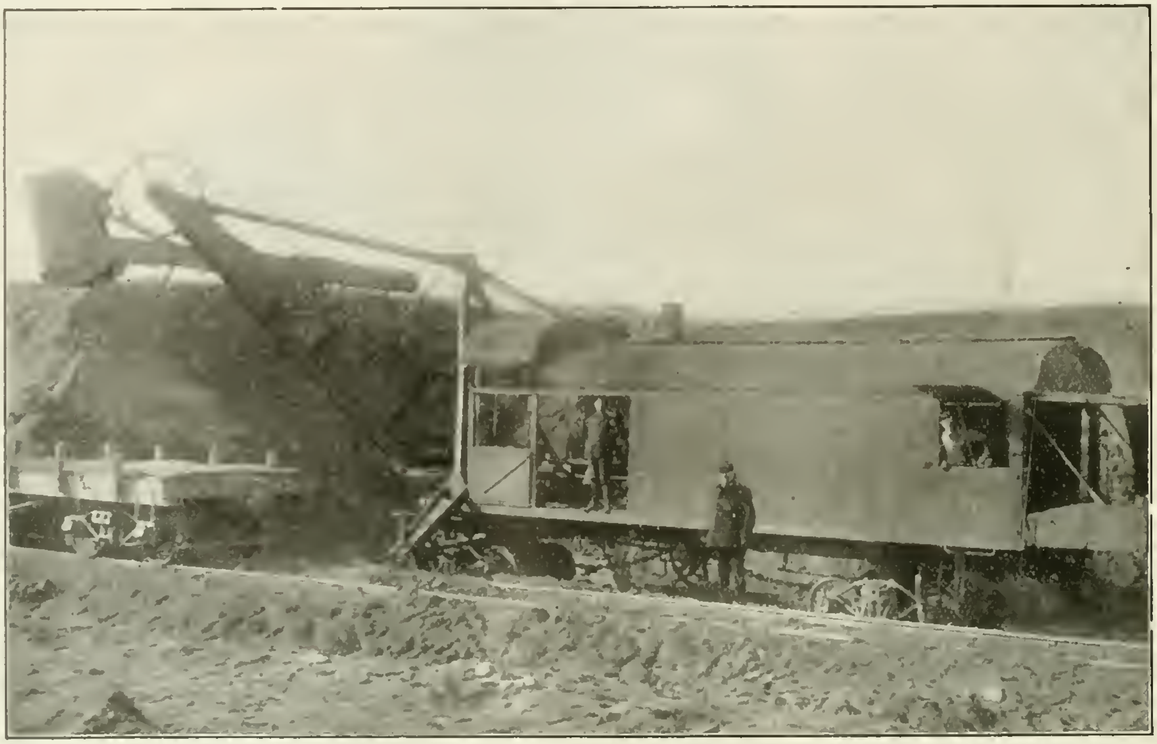


Fig. 2. Forcing on New Hose End Connections.

ATLANTIC STEAM SHOVELS



CLASSY 45-16-2½ ATLANTIC SHOVEL.

ECONOMY IN OPERATION

Reduction in friction and boiler losses, with corresponding increase in pull at dipper, is the reason why the Atlantic shovel digs more at less cost than shovels of the chain type.

Wire rope hoist, found only in the Atlantic, exerts a direct pull on the dipper and substitutes friction of a rope with but one large sheave for that of a chain with from four to six additional small sheaves. The less power lost in the machine itself, the more you have left for digging.

Further economy in operation is secured by using a large boiler of the locomotive type, in which more of the heat is utilized and less is lost up the stack. This is possible only because of the removal of the hoisting engines from their usual position on the car body, to the boom.

The placing of the main hoisting engines at the foot of the boom reduces the power necessary for swinging the boom and removes the twist upon the car body when working on one side. With this construction the turntable centre and boom foot constitute the engine frame. One casting takes the place of four or more in the usual construction, reducing the total weight of the shovel, and the weight on the front trucks.

Spare parts are kept on hand at our Works at Longue Pointe, Montreal, Canada. Every part is made to gauges, and sure to fit.

MONTREAL LOCOMOTIVE WORKS, LTD.

OTTAWA BANK BUILDING, MONTREAL, CANADA

on the end of an air piston rod, as at B, in line with the other connection at A. The piece of hose is placed in the form C, and over the ends of the piece of hose the clamps are slipped. The lower section of C is free to slide lengthwise on the bed D. Integral with form C is the upright E, to which cylinder F is attached. The upper half of form C is held on the end of a plunger in F, and by releasing the valves shown, this upper half may be clamped down tightly on the piece of hose, holding it securely.

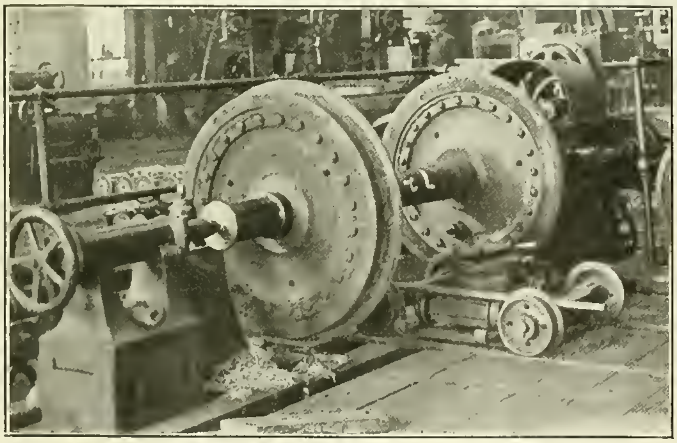
The hose being securely held in C, the plunger in cylinder G is set in motion, simultaneously pushing the connections held in A and B into the ends of the hose. C is made movable on base D to allow for this movement for introducing the end at A. In this position the clamps at each end are tightened up with bolts, leaving the hose ready for use when the two plungers are released.

◆

Arrangement of old Carwheel Lathe at C.P.R. Angus Shops.

In the newly erected tender department at the C.P.R. Angus shops, Montreal, there is a tender wheel section where many ingenious methods of doing work are employed. Among these is one in particular—the excellent arrangement of an old carwheel lathe for finishing up the old carwheels. Different from modern wheel lathes, into which the assembled wheels and axle are easily rolled, this old machine is of the standard engine lathe type, elevated from the ground in the customary manner. This gave a very unhandy arrangement for setting up the wheels in the lathe.

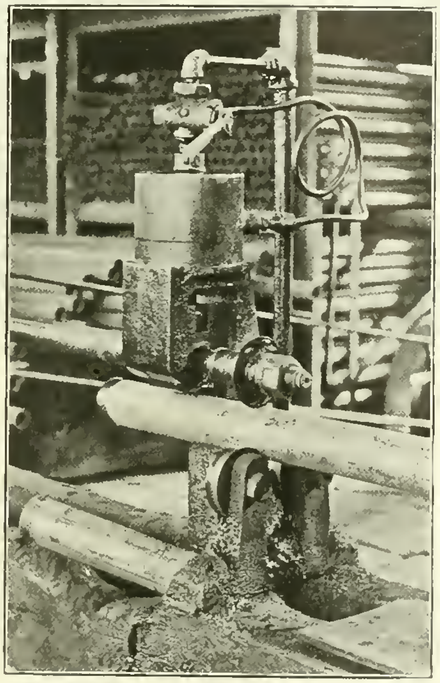
To overcome this difficulty, when the new shop was built, a pit a little longer and about twice as wide as the lathe base was constructed of concrete in the desired location in the shop. This pit was made a depth equivalent to the height of the lathe ways, making these latter flush with the floor. This arrangement is indicated in the accompanying illustration, which is a rear view, not showing the space in front of the lathe for the operator. The side and the ends have a pipe railing for protection. From the rear, a couple of strips of iron running on to the lathe bed serve as tracks for the little car indicated. This car also has a smaller truck on it, giving an endwise adjustment. This smaller truck has attached to it a small air cylinder and plunger, connected by flexible hose to the air line. The wheels to be machined are run into location over this truck in the rear of the lathe, the plunger raised lifting the wheels, and the whole device is then run into location, quickly centreing the axle in the lathe. This gives an excellent arrangement for an old machine.


Arrangement of Old Carwheel Lathe.

◆

Cutting off Safe Ends at the Intercolonial Ry. Shops.

The equipment in use in most shops for cutting off safe ends for re-ending the boiler tubes, is pretty much standard in design, consisting of two pairs of rollers on which the tube is free to revolve, while over one pair of the rollers there is a cutting disc mounted on a long shaft, the shaft being driven by a belt through a pulley on this shaft. The majority of such outfits have a screw feed for forcing the cutting disc down through the tube wall while revolving. It is in this particular that the device employed at the I.R.C. shops at Moncton, N.B., is different from the standard machines. The cutter shaft, journalled in its loose bearing in vertical ways, instead of being screw-connected, is attached to an air plunger in the air cylinder indicated in the accompanying illustration. The operator, after shoving along the tube to the marked position, forces down the cutter disc by turning on the air through the top valve indicated. This relieves the operator of the work of feeding down. On releasing the valve when the tube is cut, the plunger again resumes normal position, ready for the next operation. Much more rapid work is possible by the use of this arrangement.

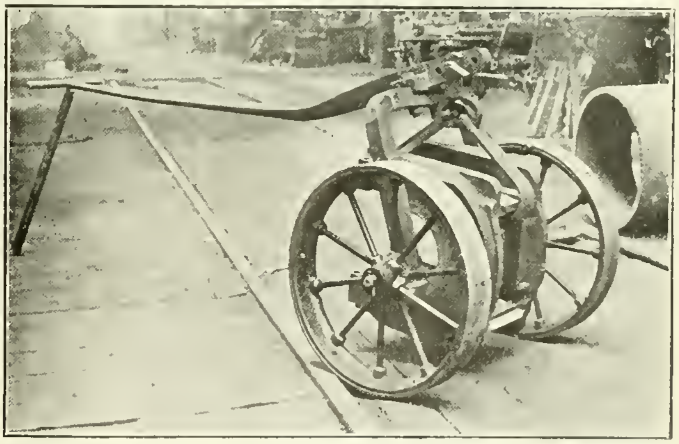

Air Attachment for Cutting off Safe Ends.

◆

Truck for Locomotive Brasses at C.P.R. West Toronto Shops.

The accompanying illustration shows a very convenient shop truck used by A. Dixon, General Foreman, Locomotive Shops, C.P.R., West Toronto, for moving locomotive driving-wheel brasses about in the shop from point to point for the various necessary operations incidental to undergoing repairs. Previous to its use, it was necessary to raise them on to an ordinary truck by block and chain, and when removed to the new location, lift them off in a similar manner.

By the use of this truck, the necessary work is very much reduced. As will be noted, the truck is built on the cantilever principle. At the end opposite the handle, there are two attached hooks which, when the handle is raised, may be gripped over the ends of the brass. Depressing the handle clears the brass from the floor ready for moving. The construction of the upright from the wheels is such that its inclination is just sufficient to bring the centre of gravity of the brass directly in line with the wheel centre line. Thus, the brass is in equilibrium, in no way bearing down on the handle, and is therefore very easily moved. One man can operate much more easily than two could by chaining up and raising by block and chain as heretofore. It will be noted that the parts are of very simple design throughout.


Truck for Locomotive Brasses.

◆

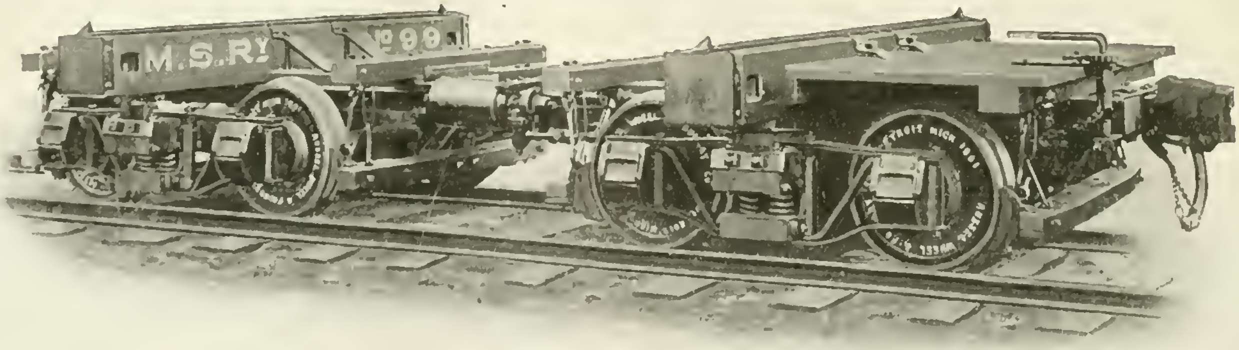
Railway Lands Patented.—Letters patent were issued during September, in relation to railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Calgary and Edmonton Ry.	1,914.00
Canadian Northern Ry.	2,275.50
Canadian Pacific Ry.	1,093.29
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co.	961.00
Total	6,243.79

Running Rights over Temiskaming and Northern Ontario Ry.—Sir James Whitney, Premier of Ontario, announced recently that arrangements had been made by which the G.T.R. will have running rights over the T. & N.O.R., the G.T.R. assuming an equitable share of the general maintenance of the road and paying $300,000 a year as rental for such running rights, this sum representing one-half of the interest on the total cost of construction of the railway.

Russel Heavy Duty Dump Cars

The only dump car built that will stand the severe service of the heaviest steam shovels. Acknowledged by the operator to be the best car on the Mesaba Range.



RUSSEL LOGGING CARS

Superior in design. Built to accommodate any length of logs and of any capacity desired. ∴ ∴

RUSSEL WHEEL & FOUNDRY CO.

Detroit, Mich., U.S.A.

Canadian Northern Railway Company's Annual Report.

The following directors' report, over the signature of Sir William Mackenzie, President, was submitted at the annual meeting recently:—

The result of operations for the year ended June 30, 1911, is as follows:—

GROSS EARNINGS.

Passenger traffic	$ 2,869,677.05
Freight traffic	11,951,993.75
Express, mail, telegraph, dining and sleeping cars, interest and profits from elevators and other subsidiary companies	1,539,041.59
	$16,360,712.39
Working expenses, including taxes, etc.	11,370,365.57
Net earnings	$ 4,990,346.82
Deduct:—	
Fixed charges	3,982,651.02
Surplus	$ 1,007,695.80
From this deduct interest at 5% paid on income charge convertible debenture stock outstanding	312,872.05
Net surplus	$ 694,823.75

The gross earnings show an increase of $2,527,650.76, or 18.27%, and the net earnings $645,956.79, or 14.87%, over the preceding year. The working expenses, including all taxes, were 74.81% of the gross earnings of the railway proper and 69.50% of the gross earnings from all sources, compared with 74.01% and 68.59% respectively last year.

During the year over 400 miles of newly constructed tracks were added to the system, the average mileage operated being 3,383.

Your directors are again gratified to report a substantial increase both in the total amount of grain hauled and in the proportion of the total grain crop carried by your railway. In the northern districts, where your railway has immense territories tributary to it, more equable climatic conditions prevailed during the growing season of 1910, resulting in a uniform ripening of the crop and consequent increased yield. Confidence in the continuance of these conditions has resulted in a substantial increase in the areas put under cultivation, emphasis of this being found in the last estimate of the total grain crop for the growing year 1911, which shows that Saskatchewan will produce about 60% of the entire crop of the prairie provinces. The figures for Saskatchewan for the two seasons past are as follows:

	Government figures, 1910 bush.	Government estimate, 1911 bush.
Wheat	72,666,000	92,367,000
Oats	63,315,000	103,140,000
Barley	5,859,000	6,642,000
Flax	3,044,000	5.770,000

Your directors continue to exercise a careful regard for transportation facilities for the incoming settler and by judicious location of branch lines to meet these demands. In Manitoba, Saskatchewan and Alberta many new lines are under construction.

It is gratifying directors that, in respect to Saskatchewan, the traffic return has justified their policy of acquiring the advantage of first construction in the best districts and a preemption of the most advantageous position to maintain for your railway its supremacy in that fertile province.

The operation of the Royal Line of Steamships from its inception has proved to your directors the wisdom of engaging in the Atlantic trade. It is manifest, however, having regard to the organization necessary to be maintained and the demand for accommodation which on different sailings could not be met, that a further addition to the fleet at an early date should be made. Negotiations are now pending, and it is hoped a satisfactory arrangement will be reached at an early date, whereby all the business offered to the Steamship Co. can be accepted.

The land sales during the year were 279,151 acres for $3,345,498.73, an average of $12 an acre, compared with 246,996 acres for $2,561,072.62, an average of $10.36 an acre the preceding year. The large sale to the Colonization Co. referred to in the previous annual report was completed during the year and the agreement of purchase guarantees exceptionally favorable conditions of settlement along the line of your railway, which will in due course produce satisfactory traffic results. Land grant bonds (issue of 1909) £47,000 were retired during the year, thus reducing the amount outstanding to £927,400, or $4,513,346.68. The company still has 871,866 acres selected lands unsold.

The demand for increased facilities in every department of your railway continues, and to meet the requirements of a rapidly growing traffic and to generally improve the efficiency of your property large expenditures were incurred during the year. These expenditures represent the enlargment of shops at many of the divisional points, the purchase of additional machinery, the building of water stations and new and additional passing tracks, the re-laying of many miles of road with heavier rails, the ballasting of tracks and the extension of the telegraph system.

The past year is notable for the commercial expansion of the Dominion generally and the progress of development within the prairie provinces in particular. Trade conditions in all sections have been entirely satisfactory. New records have been established for influx of immigration and capital: the western wheat crop greatly exceeded that of any previous year; and building operations and the extension of transportation facilities have responded to the impetus of the general advance of industrial and agricultural development. It is perhaps in the prairie provinces that the greatest measure of progress is evidenced. This is reflected in the expansion of such commercial centres as Winnipeg, Saskatoon, Edmonton, Calgary, Regina and Prince Albert. The growth of these cities, being a concomitant of the settlement of the vast areas tributary to them, naturally received great stimulus from the gratifying increase of immigration during the year. The Government authorities announce that during the fiscal year 1910-1911 the increase in population from immigration was 311,084. It is a matter of official record that over 7,000,000 acres of homestead lands were entered upon by these new settlers during the year, and this in addition to the large areas of lands sold by the Government and other agencies. It is reasonable to expect that the natural advantages and resources of the Dominion will continue to attract a constantly increasing influx of immigration and capital: and as the industrial development of Eastern Canada is an essential complement to the increased activities in the agricultural development of the west, the future prosperity of the Dominion as a whole is well assured.

Car trust obligations were created to the extent of $3,294,000 in connection with the purchase of locomotives, passenger cars and freight cars. During the year $1,943,669.95 was repaid in respect to previous obligations, thus making a net increase on this account for the year of $1,350,330.05.

A further issue of 5% income charge convertible debenture stock was made during the year. The total amount issued and now outstanding is $15,000,000, and as the surplus net earnings of your company permitted the payment of the interest there was paid out $312,872.05 for interest upon the amount of principal outstanding from time to time during the fiscal year.

The year just closed is particularly important in the history of your company because of the final step towards the accomplishment of your directors' determination to secure for it the status of a transcontinental system. In May last the Dominion Government entered into an agreement with the Canadian Northern Ontario Ry. Co. to facilitate the construction and guarantee the financing of a line from Montreal to Port Arthur to connect there with the present eastern terminus of the Canadian Northern Ry. This arrangement, together with the similar contract entered into last year with the Government of British Columbia for the construction of a line from the western boundary of Alberta to the Pacific coast, assures for your railway the completion of the original project for the establishment of a transcontinental service. The construction of both lines is now being vigorously pushed forward.

Since the close of the fiscal year the C.N.O.R. line between Toronto and Trenton has been opened for traffic. The territory through which this line is constructed is one of the most productive sections of the Dominion, contributing as it does a large proportion of manufactured and naturally produced commodities consumed in the western provinces. The same desirable conditions prevail in the territory between Trenton and Ottawa, through which the work of construction is being pressed, and will, it is expected, be completed within a year. The completion of this work includes a physical connection with the C.N. Quebec Ry. and will thus establish a direct line between Quebec, Montreal, Ottawa, and other large industrial centres with the Great Lakes. This will bring to your company the substantial advantage of a large movement of business to and from Western Canada and will also give to the C.N.Q. and C.N.O. R.'s traffic advantages which will be of material revenue value to those companies.

The accounts and statistical tables appended were submitted by D. B. Hanna, Third Vice President:—

GENERAL BALANCE SHEET.

ASSETS.

Cost of railway and equipment		$170,411,188.05
Acquired securities		8,232,006.87
Advances to other companies		2,377,331.82
Advances to lines under construction and terminals at Winnipeg		13,819,193.73
Value of material and supplies on hand	$1,538,533.53	
Due from agents, station balances, etc.	803,367.17	
		2,341,900.70
Deferred payments on land sales	9,409,081.46	
Cash with National Trust Co., account of land sales	2,471,766.87	
		11,880,848.33
Cash account—		
With Dominion Government	$1,090,023.96	
With Province of Manitoba	33,401.80	
With Province of Saskatchewan	2,038,541.04	
With Province of Alberta	2,118,337.77	
Cash on hand	6,076,101.48	
		11,356,406.05
Instalments due in respect of 5% income charge convertible debenture stock		1,019,123.99
		$221,437,999.54

In addition to the above assets the company owns 871,866 acres of land in Manitoba and Saskatchewan.

LIABILITIES.

Capital stock		$ 70,000,000.00
Bonds and stock guaranteed by Government		49,097,159.01
4% perpetual consolidated debenture stock		38,964,720.16
5% income charge convertible debenture stock		15,000,000.00
Land grant bonds, 1899	$2,000,000.00	
" 1909	4,513,346.68	
		6,513,346.68

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AND MANUFACTURING CO. LIMITED

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Manufacturer and Supplier of all apparatus and equipment used in the construction, operation and maintenance of Telephone, Fire Alarm and Electric Railway Plants. Address our nearest house

MONTREAL TORONTO WINNIPEG REGINA CALGARY VANCOUVER

Car trust obligations ...		12,472,192.92
Current liabilities—		
Unpaid pay rolls	$ 929,455.10	
Unpaid audited vouchers	1,238,083.08	
Due to other companies.	2,967,060.31	
		5,134,598.49
Coupons and dividend warrants due July 1 (since paid)	$1,733,664.16	
Accrued interest on bonds and equipment securities	304,341.34	
		2,038,005.50
Equipment replacement fund		230,541.23
Surplus—		
Land account	$16,421,530.23	
Railway account	5,565,905.32	
		21,987,435.55
		$221,437,999.54

Income Account.

Operating expenses		$11,168,644.16
Taxes, railway		111,255.01
Taxes on company's lands		90,466.40
Interest on Bonds, etc.—		
Consolidated debenture bonds, guaranteed by Manitoba	$ 486,199.42	
Ontario Division debenture bonds, guaranteed by Manitoba	230,701.88	
Winnipeg Terminal bonds, guaranteed by Manitoba.	120,000.00	
3% debenture stock, guaranteed by the Dominion.	280,799.87	
3½% debenture stock, guaranteed by the Dominion	78,457.36	
4% debenture stock, guaranteed by Manitoba ...	96,366.75	
4% debenture stock, guaranteed by Saskatchewan.	66,560.00	
Consolidated debenture stock	1,388,410.28	
Qu'Appelle, Long Lake and Saskatchewan Ry. 4% stock	202,055.99	
Qu'Appelle, Long Lake and Saskatchewan Ry. 6% bonds	1,927.20	
Land Grant 4% bonds....	184,563.46	
		3,136,042.21
Rental of Leased Lines—		
Northern Pacific & Manitoba Ry.	$ 211,250.00	
Minnesota & Manitoba Rd.	13,960.00	
		225,210.00
Interest on equipment securities		621,398.81
Accrued interest to June 30	$ 304,341.34	
Less accrued interest to June 30, 1910, paid during current year	224,562.92	
		79,778.42
Interest at 5% paid on income charge convertible debenture stock outstanding		312,872.05
Balance of income account		5,565,905.32
		$21,311,572.38
Balance of income account at June 30, 1910		4,950,859.99
Gross earnings, viz.:		
Passenger earnings	$ 2,869,677.05	
Freight earnings	11,951,993.75	
Express, mail and miscellaneous earnings	1,539,041.59	
		16,360,712.39
		$21,311,572.38

Gross Earnings.

Class.	1911.	%
Passenger	$ 2,869,677.05	17.54
Freight	11,951,993.75	73.05
Mails	88,008.53	00.54
Express	268,445.11	01.64
Miscellaneous	1,182,587.95	07.23
Total	$16,360,712.39	100.00

Operating Expenses.

Class.	1911.	%
Maintenance of way and structures	$ 2,362,004.23	20.77
Maintenance of equipment..	2,216,841.91	19.50
Traffic expenses	263,542.95	02.32
Transportation expenses ...	5,879,357.71	51.71
General expenses	648,618.77	05.70
Total	$11,370,365.57	100.00

Summary of Earnings and Expenses.

Class.	1911.	%
Gross earnings	$16,360,712.39	
Operating expenses	11,370,365.57	69.50
Net earnings	4,990,346.82	30.50
		100.00

Description of Freight Carried.

	For year ended June 30	
	1911.	1910.
Flour, sacks 100 lbs. ea...	2,215,094	1,789,768
Grain, bushels	40,249,939	37,355,010
Live stock, head	137,295	123,635
Logs and lumber, feet ...	324,221,000	294,647,000
Firewood, cords	210,625	189,535
Coal, tons	370,161	282,718
Immigrants' effects, cars...	5,644	5,068
Building material, lime, stone, brick, sand, etc., cars	36,328	21,758
Miscellaneous, tons	1,170,964	989,783

Passenger Traffic.

	1910-11.	1909-10.
Passengers carried (earning revenue)	1,394,361	1,268,296
Passengers carried one mile	113,506,430	106,217,424
Passengers carried one mile per mile of road..	33.552	33.412
Average distance carried.	81.40	83.75
Total passenger revenue.$	2,756,415.06	2,320,520.52
Average amount received per passenger ....$	1.97.68	1.82.96
Average amount received per passenger per mile.c	.02428	.02184
Total passenger train earnings ....$	3,226,130.69	2,638,943.81
Passenger train earnings per train mile ....$	1.17.116	1.08.115

Freight Traffic.

Revenue tons carried....	4,675,405	3,809,856
Revenue tons carried one mile	1,385,711,579	1,356,351,140
Revenue tons carried one mile per mile of road..	409,610	426.659
Average distance haul of one ton	296.38	356.01
Total freight revenue ..$	11,768,493.37	9,955,289.93
Average amount received for each ton of freight.$	2.51.711	2.61.303
Average revenue per ton per mile ....cts.	.00849	.00734
Total freight train earnings ....$	11,951,993.75	10,102,510.36
Freight train earnings per per train mile ....$	2.66.112	2.59.086

Passenger and Freight, Etc.

Gross earnings per mile of road ....$	4,836.15	4,351.39
Operating expenses per mile of road ....$	3,361.03	2,984.80
Net earnings per mile of road ....$	1,475.12	1,366.59
Amount required per mile of road to pay fixed charges, including leased lines ....$	993.57	868.03

Train Mileage.

Mileage of passenger trains	2,754,634	2,440,870
Mileage of freight trains.	4,491,345	3,899,280

Expenses Per Traffic Train Mile.

Maintenance of way and structures ....cts.	32.60	32.30
Maintenance of equipment ....cts.	30.59	29.02
Traffic expenses .....cts.	03.64	02.42
Transportation expenses c.	81.14	76.96
General expenses ....cts.	08.95	08.96
Total ....$	1.56.92	1.49.66

Summary of Equipment.

	June 30, 1911.	June 30, 1910.
Locomotives	398	372
Sleeping and dining cars	50	43
Passenger coaches	226	203
Baggage, mail and express cars..	90	79
Business cars	11	11
Freight, refrigerator and stock cars	14,778	11,735
Conductors' vans	231	184
Boarding, tool, auxiliary cars, steam shovels and snow equipment	481	416

The total mileage owned and operated, including leased lines, at June 30, was 3,731.40, located as follows,—Ontario, 356.60; Manitoba, 1,752.28; Saskatchewan, 1,312.90; Alberta, 221.42; Keewatin Territory, 44.50; Minnesota, 43.70. The average mileage operated during the year was 3,383.

The report was unanimously adopted, and the following officers and directors were re-elected for the current year: President, Sir William Mackenzie; Vice President, Sir Donald Mann; other directors, Z. A. Lash, K.C., F. Nicholls, Toronto, and R. M. Horne-Payne, London, Eng.

◆

Under arrangements made between the Alberta Railway and Irrigation Co., and the Great Northern Ry., through passenger trains are now being run between Lethbridge, Alta., and Great Falls, Mont., instead of transferring passengers at Virden, Mont., as heretofore. Two sets of rolling stock are used in this run, being furnished by the two companies in proportion to the mileage of each.

Birthdays of Transportation Men in December.

Many happy returns of the day to,—

E. T. Agate, M. Can. Soc. C.E., District Engineer, Canadian Northern Ontario Ry. Sudbury-Port Arthur Line, Sudbury, born at Pittsford, N.Y., Dec. 7, 1874.

E. Alexander, Assistant Treasurer, C.P.R., Montreal, born in Yorkshire, Eng., Dec. 8, 1862.

J. H. Barber, Engineering Department, C.P.R., Montreal, born at Cobourg, Ont., Dec. 20, 1856.

N. E. Brooks, Division Engineer, C.P.R., Calgary, Alta, born at Sherbrooke, Que., Dec. 25, 1866

Harold Browning, steamship agent, etc., Windsor, Ont., born at Stamford, Lincolnshire, Eng., Dec. 2, 1864.

T. C. Burpee, Engineer of Maintenance of Way, Intercolonial Ry., Moncton, N.B., born at Sheffield, N.B., Dec. 11, 1852.

W. W. Butler, Vice President, Canadian Car and Foundry Co., Montreal, born at Danville, Ohio, Dec. 9, 1862.

M. M. Campbell, C.E., Building Inspector, G.T.R., Montreal, born at Bridgeton, N.B., Dec. 17, 1879.

J. A. Carroll, Road Foreman of Locomotives, District 1, Canadian Northern Ry., Rainy River, Ont,. born at Chilton, Wisc., Dec. 14, 1865.

A. H. Chave, Purchasing Agent and Assistant to First Vice President, Canadian Car and Foundry Co., Montreal, born at Williamsbridge, N.Y., Dec. 26, 1872.

H. P. Dwight, President, Great North Western Telegraph Co., Toronto, born at Belville, N.Y., Dec. 23, 1828.

W. H. Gardiner, City Freight Agent, C.P.R., and District Freight Agent, Esquimalt and Nanaimo Ry., Victoria, B.C., born there Dec. 6, 1859.

H. H. Gildersleeve, Manager, Northern Navigation Co., Sarnia, Ont., born at Kingston, Ont., Dec. 15, 1865.

A. J. Gorrie, ex-General Superintendent, Canadian Northern Quebec Ry., now Receiver, Quebec and Lake St. John Ry., Que., born at Raith, Kirkcaldy, Scotland, Dec. 10, 1868.

W. H. Grant, Manager of Construction, Mackenzie, Mann & Co., Ltd., Toronto, born at Acton, Ont., Dec. 8, 1858.

F. P. Gutelius, General Superintendent, Eastern Division, C.P.R., Montreal, born at Mifflinburg, Pa., Dec. 21, 1864.

D. B. Hanna, Third Vice President, Canadian Northern Ry., Toronto, born at Thornliebank, Scotland, Dec. 20, 1858.

S. P. Howard, ex-General Freight Agent, Eastern and Lake Superior Divisions, C.P.R., Montreal, born there, Dec. 30, 1865.

R. Johnson, Locomotive Foreman, C.P.R., White River, Ont., born at Quebec, Que., Dec. 24, 1863.

B. B. Kelliher, Chief Engineer, Grand Trunk Pacific Ry., Winnipeg, born in Ireland, Dec. 26, 1862.

J. T. McGrath, Superintendent of Motive Power and Equipment, Chicago and Alton Rd., Bloomington, Ill., born at Toronto, Dec. 6, 1869.

A. T. McKean, City Freight Agent, C.P.R., Winnipeg, born at St. John, N.B., Dec. 18, 1886.

L. Macdonald, Division Freight Agent, G.T.R., Toronto, born at Montreal, Dec. 10, 1871.

J. Niblock, ex-Superintendent, C.P.R., Victoria, B.C., born in York county, Ont., Dec. 21, 1849.

A. Price, General Superintendent, Alberta Division, Calgary, born at Toronto, Dec. 6, 1861.

G. D. Robinson, Assistant Export and Import Freight Agent, C.P.R., Toronto, born at St. John, N.B., Dec. 7, 1877.

C. Schreiber, C.M.G., Consulting Engineer, Department of Railways and Canals, Ottawa, Ont., born at Bradwell, Essex, Eng., Dec. 14, 1831.

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F. P. Smith, Secretary, Richelieu and Ontario Navigation Co., Montreal, born there, Dec. 23, 1873.

C. E. E. Ussher, Passenger Traffic Manager, C.P.R., Montreal, born at Niagara Falls, Ont., Dec. 29, 1857.

H. H. Vaughan, Assistant to Vice President, C.P.R., Montreal, born at Forest Hill, Essex, Eng., Dec. 26, 1868.

R. C. Vaughan, Assistant to Third Vice President, Canadian Northern Ry., Toronto, born there, Dec. 1, 1883.

W. Wood, Locomotive Foreman, C.P.R., Megantic, Que., born at Montreal, Dec. 6, 1863.

◆

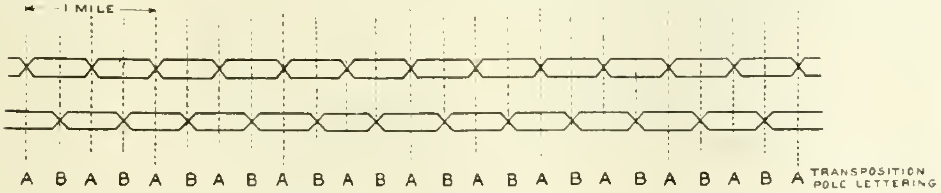
Telephone Train Dispatching.

By A. Dwight Smith.

[The following is the fourth of the series of articles on this subject, the three previous ones having appeared in our Sept., Oct., and Nov. issues. This article deals with line construction.]

The arrival of the telephone among the railways for dispatching trains has also been a prolific cause for the advent of new methods, new ideas and new material in their line construction. While it has been done gracefully, nevertheless the telephone has been responsible for many improvements in railway wire service. By its own needs, it has forced changes, some of them almost revolutionary from the old telegraph man's point of view, but all of them advances in the art. It is not intended to cover here the whole number of the changes which have been introduced; that is beyond the scope of one paper. There is, however, one feature which it is fitting to deal with first, because it is what the railways which go into telephone dispatching meet first of all. That is the line.

The telegraph circuit occasionally, it is true, is of copper, but much more often, especially in railway work, it is of iron with wrapped joints. Frequently also these points are not soldered. The telegraph circuit is a single wire working from ground to ground. It also is a much less sensitive circuit than is required in telephony. High resistance joints can be cared for by raising the voltage, leaks to the ground can be handled in the same way, together with adjustment of the artificial line in the telegraph office; likewise the effect of the wet weather. The sole object to be accomplished is the operation of a relay or relays at the distant end and provided this is effected, voltage, current, capacity and resistance are of small account.

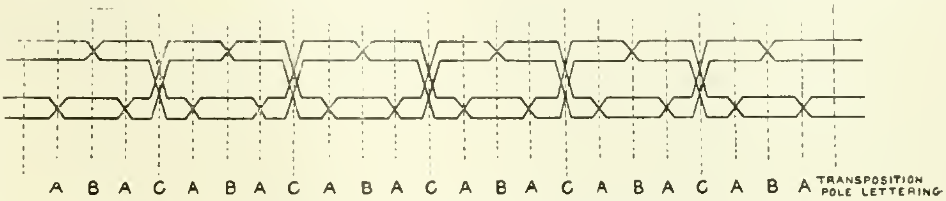

1 MILE
A B A B A B A B A B A B A B A B A B A B A B A B A
TRANSPOSITION POLE LETTERING

Standard Transposition of Railway Telephone Lines.

By this it is not intended to state that they are neglected, far from it, but a difference in voltage between 40 and 400 volts is merely the difference between a local and a trunk circuit in telegraph service. The point is that such differences can be cared for in telegraph work by electro-mechanical means. It is, of course, due to the fact that they can be thus easily cared for that the telegraph line construction along railway right of way has taken the form now existing. This construction has aimed to meet the requirements for successful telegraph operation, and it has succeeded admirably. The pole line itself differs not at all in the two systems of communication. The difference comes when we get into apparatus and material affecting the operation of the circuits themselves.

In telephone work, particularly long-distance work of the nature of which dispatching circuits partake, the factors outlined above exert a direct and very appreciable influence. The resistance of the wire itself affects that delicate quality known to telephone engineers as attenuation. In other words, high resistance thins out the spoken word until it disappears completely from hearing. The limit at which transmission is considered commercial, or the grade of speech a man will pay for, and that will give him satisfaction, is taken arbitrarily at the equivalent of that obtained over 850 miles of no. 8 B.W.G. 2-wire copper circuit with a telephone set at each end.

Railway dispatching circuits run from 50 to 300 or more miles in length. It has been found, in fact, that many which start near 100 miles are increased to 300, so great is the improvement in operating efficiency. On the above basis no. 9 B. & S. copper has been adopted as standard for train wires on nearly all the railways. This gives excellent transmission up to the greatest length of dispatcher's district which is met with in Canadian practice. It is not always necessary at the outset, but experience has shown it to be the most economical, due to the fact that the railways are in many cases combining and adding to the line handled by one dispatcher. It has also been found desirable to arrange train dispatching circuits so that several can be joined together forming one circuit, for special purposes.


A B A C A B A C A B A C A B A C A B A C A B A
TRANSPOSITION POLE LETTERING

Transposition Scheme for Telephone Train and Message Wires with Provision for Phantoming.

The telephone circuit is, of course, a two-wire circuit and all joints are made with copper sleeves, so that there is no chance for high resistance spots to appear in the line with the consequent injury to transmission of speech. Further, in view of the fact that the telephone is the most sensitive commercial instrument known to electrical engineers, special care must be taken to prevent outside influence from interfering with its operation. These outside sources of disturbances in railway service are most often the telegraph lines themselves, but frequently power, lighting and high tension transmission lines are met with and parallel the talking circuit.

For ordinary cases of induction, namely, low voltage power circuits and telegraph wires, the familiar transposition scheme followed on all commercial telephone lines is sufficient. This in itself is a new development to the railways who have been working the single wires for so many years. They are, however, employing the same methods used by the telephone companies, in some cases using single pin transpositions on a two-piece insulator, in others using one-piece insulators, one on the crossarm and one on a hanging iron or steel bracket. Since the telephone circuits are practically all new on railway pole lines, these transpositions are being made during the process of line construction and cutting the wires thus avoided.

Where the telephone train wire is exposed to straight and duplex telegraph lines only, half mile transpositions are generally sufficient. If two circuits are strung, a train wire and a message wire, these are made at alternate quarter mile poles on each circuit. Where quadruplex telegraph lines are met with and it is impossible so to locate the telephone circuit that it is a considerable distance from these, it will be found that more frequent transpositions are required, say every quarter mile on each circuit. It is advisable, however, always to place the telephone circuits as far away as possible from lines working quad, solely on account of induction.

The railways are finding one of the great advantages of their telephone systems is that the trains can carry portable sets, which can be hooked on the line at any point in cases of emergency. With this object in view the question of providing an insulator of distinctive appearance for the telephone circuits is coming up today and porcelain promises to come into use. This material also has a great advantage of an increased insulation resistance over glass, and aside from the question of expense, is altogether most satisfactory. This is particularly true on telephone lines of this character for long haul work.

On some short lines not exceeding 100 miles in length it has been found desirable as a matter of economy to arrange two of the no. 8 B.W.G. iron telegraph wires as a message circuit and to install telephone and selector equipment upon it. Then in event of breaks in the copper train wire circuit, this iron wire may be used to patch it up temporarily. It is necessary, however, before equipping such a circuit to go over the line most carefully, making the necessary transpositions and soldering all joints. It is not possible to phantom an iron and a copper circuit. For this reason alone the use of iron for such purposes is to be considered most carefully.

In order to get the maximum service out of a pair of telephone circuits, these may be phantomed, using each pair of wires as one side of a third circuit, a matter accomplished very simply by means of repeating coils located at the ends of the line. Phantom circuits affect the line construction in that they require special transpositions to prevent cross-talk between the sides and the phantom. These special transpositions of each pair of wires forming one side of the phantom against the other side assist and complement the action of the phantom repeating coils in eliminating the conversation in the side circuits from the phantom. Thus three conversations can be carried on over two pairs of wires at once without interference. The railways are planning to take advantage of this and on many of them it is the custom to cut in the phantom transpositions about once per mile on the line when construction is in progress. This is done as a matter of economy whether the phantom circuit itself is put in service at once or not. The phantom circuit over train and message wires offers a road a very economical way of obtaining private telephone service be-

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tween its important points. The extra expense involved is practically nil.

Drop wires for the telephone equipment are quite generally of no. 14 B. & S. braided rubber cover, twisted pair wire. This makes a convenient and neat appearing method of looping into an office and can be carried on porcelain knobs. Where there are many circuits cable is used, for obvious reasons. The usual practice in this work is to tap from the main line with either wrapped soldered joints or by means of test connectors. In case testing equipment is installed in the office, the line must be looped through this and therefore it is generally dead ended in each direction and the office connections run in from both sides. Two-piece insulators are used for dead-ending the line, although, if poles are situated conveniently, it is better to terminate the line in each direction on separate poles.

The twisted-pair wire is carried to the under side of the cross-arm and mounted on porcelain knobs, or run in wooden or porcelain cleats to the end, where it terminates on a knob. On the building end this wire may either be terminated on a bracket-mounted insulator or a distributing ring. It is, of course, carried into the building in the usual way, but each wire should have its own porcelain bushing through the wall.

Many, practically all, of the above methods of construction are those in general use throughout the country in telephone work. They have been the result of years of experiment and years of experience to show what gives the best practical results. They are aimed in one direction—the construction of a good line, well insulated, without poor joints, sightly and economical both from a cost and a maintenance standpoint. The expense is, as in all such cases, a matter of compromise, but it has been very evident that in pole lines, as in other things, the attempt to save money by cheap, poorly built equipment results in a greater expense in the end. The portion of the country under consideration will obviously modify construction methods to a certain extent, but it is only a modification. Lines in the sleet districts will necessarily be more strongly erected, more firmly guyed than lines in the south. The effect of local influence is always felt, but the basic principles of line construction on which satisfactory telephony rests are always the same.

That the requirements in this newly developing railway field are more severe than have hitherto existed is an advantage to the roads in that it leads them by degrees into better, more stable construction and more permanent wire lines along their rights of way.

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White Pass and Yukon Ry. Rates.—In connection with the question of the W.P. and Y.R. rates before the Board of Railway Commissioners, the Dawson Board of Trade is laying information before the Commission, charging the railway company with maintaining an "earnings reserve fund," from which rebates are made to certain shippers and passengers. It is alleged that during the past 11 years, a certain proportion of the freight and passenger receipts has been set aside for this purpose, and never included in the reports to the Government or shareholders, the amount in that period being quoted as over $2,750,000.

The Board of Railway Commissioners had an application before it, Nov. 7, at Ottawa, regarding the remuneration to be paid railway companies for carrying mails. It is claimed that since 1895, the mails have increased about 18%, and the train service about 400%. The hearing of the matter was postponed to Jan. 23.

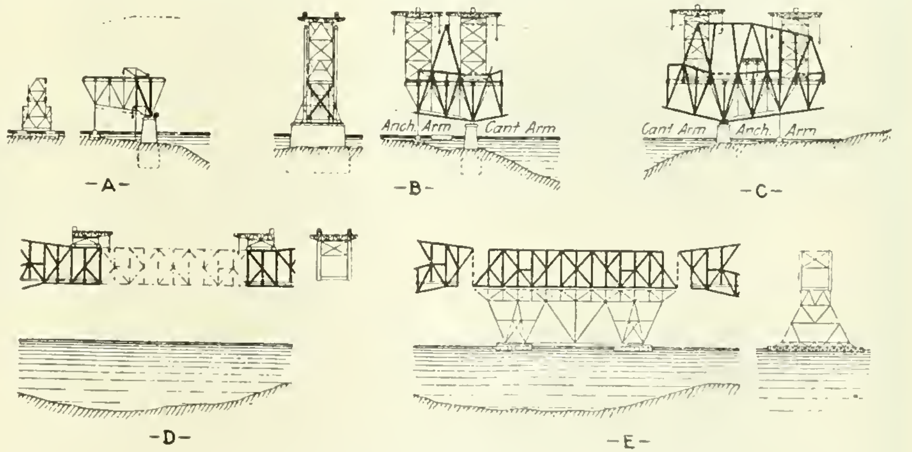
Schemes of Erection Proposed for the Quebec Bridge.

In our last three issues we gave the schemes of erection proposed by the St. Lawrence Bridge Co., the British Empire Bridge Co. and the Pennsylvania Steel Co. Following is the scheme proposed by Maschinenfabrik Augsburg-Nuernberg A.G., for the Board of Engineers' design:

In two forms of the Board's design, the entire bridge is to be erected by cantilevering. Erection would start from the main piers, both the anchor and the cantilever arms being erected without falsework. To insure stability the anchor arm is temporarily supported at panel-point AL10 by a steel temporary bent resting on concrete footings.

Before erecting the permanent truss members, a temporary framework spanning from the main pier to the temporary bent is erected by derricks (see plan). The floor members of the bridge being erected on this framework, the erecting cranes would be built on this floor.

It is proposed to erect the bridge by double-jib traveling cranes, two on each arm, having cross travel on a tower or trestle arranged to run longitudinally along the floor of the bridge. All movements are to be by electric power. Each crane has a lifting capacity of 200,000 lbs. Erection can therefore proceed simultaneously at four different points. The rails on which the crane trestles are to run are to be laid on the regular stringers, which for this service could be shifted towards the main trusses of the bridge. The expense of providing four cranes on each side of the river was considered warranted on account of the amount of time saved for the completion of the work. Erection is to proceed on both sides of the river at the same time.



Maschinenfabrik Augsburg-Nuernberg A.G. Board's design.

The cantilever-arm traveling crane will be built first and the work of erection will commence at panel A13 to C13 (panel-point 14 is the main post), including the erection of the temporary supporting bent and its adjoining members. While this work is progressing the anchor-arm crane will be erected in panel A11 — A10 and work started on the erection of the first anchor-arm triangle L14 — U12 — L10. The diagonal members AU12 — AL14 are temporarily strengthened, because they become compression members for a time. An auxiliary member is to be inserted between the points AM13 — CM13 to serve for regulating the system during the first cantilevering out.

While the bridge construction below the floor is being cantilevered out panel by panel, assisted by auxiliary members, some of which are adjustable, the posts and upper-chord members between the two compression diagonals are put in place, by means of the crane operating from central position.

When cantilevering out the cantilever-arm, the intermediate chord points M3 and M1, as well as the upper chord points U2 and U0, are connected to the floorbeams of the bridge by special stiffeners in order to increase the lateral rigidity of the trusses.

Cantilever Erection of Suspended Span.—In cantilevering out the suspended span, the first two panels are erected in the same manner as the last panels of the cantilever arm by using the same traveling cranes. By lowering the working platforms both the traveling cranes are then changed into upper chord cranes, thus decreasing the weight and consequently the stress in the members of the bridge. These upper chord cranes then work in the usual manner, panel by panel, up to the centre of the bridge.

The operation of connecting up at the centre of the suspended span is facilitated by means of strong adjusting devices connected with the top and bottom chords at the end of the cantilever arms.

Suspended Span Floated In.—This scheme necessitates the erection of the suspended span on high steel falsework, this falsework being supported in turn on large pontoons, the whole being finally towed into position. The height of the falsework is such that at low tide the suspended span is about 2 ft. higher than corresponding points on the cantilever arms. The hanger or rocker U0 — L0 is composed of wire cables, and thus is enabled to buckle under compression. On this account the connection between the suspended span and the cantilever arm (by means of the pin at L0) can be made at any time and the suspended span still remain on the falsework and move up and down with the tide. The connection need not be made simultaneously at all four corners, as would be the case if these members were composed of rigid eyebars.

The steel falsework is first erected on concrete pedestals, situated in some bay or cove adjacent to the bridge site. When the span has been completely erected over the falsework, scows are floated under the falsework between the piers, and the structure transferred to the scows by first partially filling the scows with water, and, when they are in place under the bearings provided, pumping the water out. Four scows each 275 ft. × 46 ft. are proposed for this operation.

When the suspended span has been towed to the site and placed in position, water is again let into the scows, and the entire scaffolding is lowered to such an extent as to enable its being freely floated out from under the bridge.

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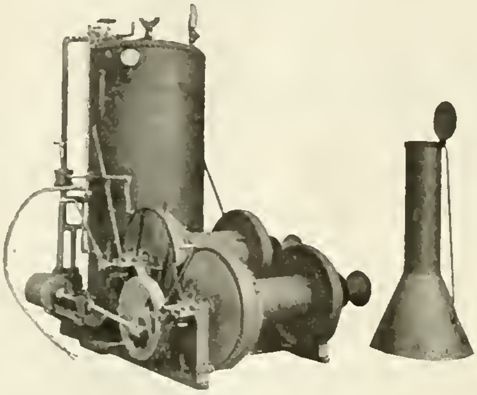

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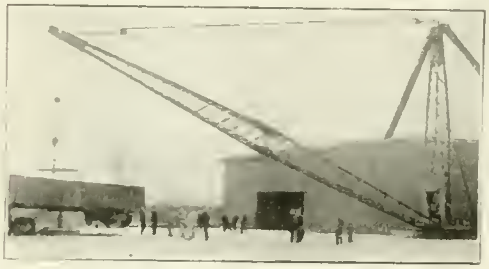
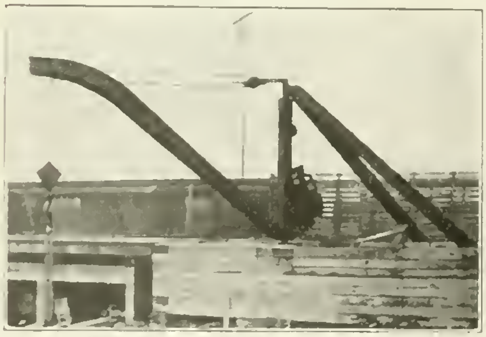


Oregon R.R. & Nav. Co. Albina, Ore., 35 ton "American" Steel Stiff Leg Derrick



Gt. Northern Railway Local Yards, Vancouver, B.C. "American" R.R. Derrick

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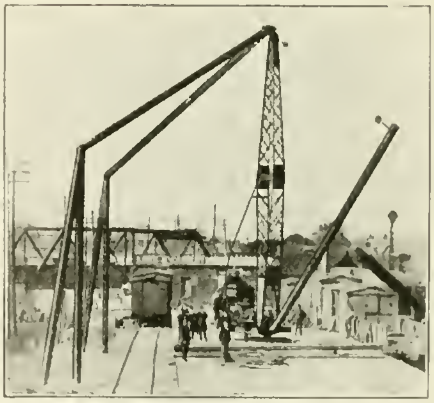

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Grand Trunk Railway Company's Semi-Annual Meeting.

The semi-annual meeting was held in London, Eng., Oct. 26, when the report for the half year ended June 30, was presented. The following summary shows a comparison of revenue with the corresponding half-year, 1910:—

1910.		1911.
£3,321,636	Gross receipts	£3,561,181 15 5
	Deduct—	
2,456,065	Working expenses, being at the rate of 73.81%, as compared with 73.94% in 1910	2,628,205 4 11
865,571	Net traffic receipts ..	932,976 10 6
Cr.		Cr.
58,089	Balance of income from rentals, outside operations, and car mileage.	22,431 2 9
923,661	Total net revenue...	955,407 13 3
	Add—	
16,013	Received from International Bridge Co.	16,012 16 7
6,507	Interest on bonds, Central Vermont Ry.	6,506 14 3
62,483	Interest on securities of controlled lines and on St. Clair Tunnel bonds acquired by issue of G.T.R. 4% debentures.	62,510 5 1
38,302	Balance of general interest account	51,937 10 9
£1,046,966	Net revenue receipts.	£1,092,374 19 11

Following are net revenue charges compared with corresponding period 1910:

1910.		1911.
£ 77,603	Rents, leased lines	£ 77,603 0 9
520,241	Interest on debenture stocks and bonds	539,850 3 1
32,448	Interest on debenture stock and bonds of consolidated lines	30,481 1 2
34,966	Canada Atlantic Ry. deficiency	41,757 13 1
34,548	Detroit. Grand Haven and Milwaukee Ry. deficiency	39,685 19 3
699,806		729,377 17 4
347,160	Leaving a surplus of...	362,997 2 7
£1,046,966		£1,092,374 19 11

Adding balance of £9,105 5s. 5d. at credit of net revenue account, 1910, to above surplus of £362,997 2s. 7d., the total available for dividends is £372,102 8s. 0d., from which the directors recommend the payment of the following dividends:—

Half-year on 4% guaranteed stock..	£211,811 1 11
Half-year on first preference stock..	85,420 15 0
Half-year on second preference stock	63,210 0 4
	£360,441 17 3

leaving £11,660 10s. 9d. to be carried forward to next half-year's account.

Following is a comparison of receipts for the half-years ended June 30, 1911, and 1910:—

Description	1911	1910	Increase
	£	£	£
Passengers	914,570	884,274	60,296
Mails and express	156,656	146,426	10,230
Freight and live stock	2,347,951	2,186,027	161.927
Other receipts	112,002	104,909	7,093
	3,561,182	3,321,636	239,546

TRAFFIC STATISTICS.

	1911	1910	Increase
Passengers carried	5,170,916	4,990.401	180,515
Average fare per passenger ..	43.84*d.*	42.53*d.*	1.31*d.*
Tons of freight and live stock.	9,050,269	8,832,332	217,937
Average rate per ton	62.26*d.*	59.40*d.*	2.86*d.*
Tons carried one mile	1,655,756,984	1,559,037,718	63,719,266
Earnings per train mile	82.33*d.*	83.49*d.*	....

The average rate per ton per mile on the entire freight business was 0.69c., compared with 0.67. in corresponding half-year.

The working expenses, excluding taxes, were £2,580,641, or 72.47% of gross receipts, compared with £2,409,690, or 72.55%, an increase in amount of £170,951, but a decrease in proportion to gross receipts of 0.08%.

Following is a comparison of revenue expenditure, including taxes, for half-years ended June 30, 1911, and 1910:—

	1911	1910	Increase
	£	£	£
Maintenance of way and structures	395,713	365,487	30,226
Maintenance of equipment	600,415	638,696	....
Traffic expenses........	114,947	107,375	7,572
Conducting transportation	1,373,042	1,204,624	168,418
General expenses	96,524	93,508	3,016
Taxes	47,564	46,375	1,189
Total	2,628,205	2,456,065	172,140
Percentage of gross receipts............ ...	73.81	73.94	....
Expenditure per train mile	60.76*d.*	61.73*d.*	....

The train mileage compares with that for the half-year ended June 30, 1910, as follows:—

	1911	1910	Increase
Passenger........	4,233,413	4,133,538	99,875
Freight	5,870,692	5,141,909	728,783
Mixed trains	276,901	272,592	4,309
Total..........	10,381,006	9.548,039	832,967

The gross receipts show an increase of £239,546, or 7.21%; the working expenses, including taxes, an increase of £172,140, or 7.01%; and the train mileage an increase of 832,967, or 8.72%.

The total charges to capital account were £341.327 19s., of which £9,077 1s. 11d. was discount and commission on 4% consolidated debenture stock and 4% guaranteed stock issued during the half-year.

The expenditure on capital account in respect of new works, new rolling stock, double track and land purchased, was as follows:—

New works	£112,705 0 11
New rolling stock	205,682 19 7
Double track	2,828 12 9
Land purchased	11,034 3 10
	£332,250 17 1

During the half-year 18 Pacific type passenger locomotives, five first class cars, one steam motor car, and two road levellers have been built in the company's shops, and 12 freight locomotives and 840 box cars were purchased on revenue account. The equipment has also been increased during the half-year by the purchase of 1,000 steel coal cars, the cost of which. £205,682 19s. 7d., has been charged to capital account.

CANADA ATLANTIC RAILWAY.

The following summary shows the results of the half-year's working, compared with the corresponding period of 1910:—

1910.		1911.
£192 977	Gross receipts	£205,069
169,500	Working expenses	188,098
23.477	Net traffic receipts	16,971
4,586	Balance of income from rentals. outside operations, and car mileage	7.025
£ 28 063	Total net revenue	£ 23.996

The interest charges were £65,753. against £63.029. so that there was a net revenue deficiency of £41.757. compared with £34.966 in 1910. The number of passengers carried was 254.062, against 253.594, an increase of 468, or 0.18%, and the passenger receipts, including mails and express, were £44,185. against £42.560, an increase of £1,625, or 3.82%. The quantity of freight moved was 833,704 tons, against 749,476 in 1910, an increase of 11.24%, and the receipts from freight traffic were £144,928, against £133,583, an increase of 8.49%.

GRAND TRUNK WESTERN RAILWAY.

The following summary shows the results of the half-year's working, compared with the corresponding period of 1910:—

1910.		1911.
£643,457	Gross receipts	£661,759
509,571	Working expenses	549,482
133,886	Net traffic receipts	112,277
Dr.		Dr.
55,872	Balance of income from rentals, outside operations, and car mileage	53,263
£ 78,014	Total net revenue	£ 59,014

The net revenue charges were £92,187, so that there was a net revenue deficiency of £33,173, which with the deficiency of £3,225 for the half-year ended Dec. 31, 1910, makes a total deficiency for the year of £36,398, and deducting the credit balance at June 30, 1910, of £4,937, there remains a net revenue debit of £31,461 at June 30, which amount is carried forward to the current year. The number of passengers carried was 995,116, against 991,153, an increase of 0.40%, and the passenger train receipts, including mails and express, were £202,176, against £198,224, an increase of 1.99%. The quantity of freight moved was 1,941,374 tons, against 1,937,841, an increase of 0.18%, and the receipts from this traffic were £444,898, against £430,419 in 1910, an increase of 3.36%

DETROIT, GRAND HAVEN & MILWAUKEE RY.

The following summary shows the results of the half-year's working, compared with the corresponding period of 1910:—

1910.		1911.
£199,488	Gross receipts	£205,050
167,654	Working expenses	189,230
31,834	Net traffic receipts	15,820
Dr.		Dr.
29,401	Balance of income from rentals, outside operations, and car mileage	18,524
£ 2,433	Total net revenue	£ 2,704

The net revenue charges were £36,981, in 1910, so that there was a net revenue deficiency of £39,685, as compared with £34,548 for the corresponding period. The number of passengers carried was 373,757, against 371,303, an increase of 0.66%, and the passenger receipts, including mails and express, were £55,511, against £54,685, an increase of 1.51%. The quantity of freight moved was 1,192,105 tons, against 1,140,815 in 1910, an increase of 4.49%, and the receipts from freight traffic were £129,825, against £127,616 in 1910, an increase of 1.73%.

GRAND TRUNK PACIFIC RAILWAY.

Track has been laid to Fitzhugh, 111 miles from Wolf Creek, the end of the prairie section, 1,027 miles from Winnipeg and nearly 1,500 miles from Fort William. Fitzhugh is within 18 miles of the summit in Yellowhead Pass, and considerable grading beyond has been done as far as Tete Jaune Cache. From Prince Rupert on the Pacific coast, grading has been practically completed to Hazelton, 185 miles, and considerable work has been done between that point and Aldermere, a further 60 miles. Tracklaying east of Van Arsdol, the present end of track from Prince Rupert, has been delayed owing to difficulties in the construction of the tunnels and the proposed bridge 16 miles below Hazelton, across the Skeena River. It is expected the tunnel work will be completed by November, and there is every probability that the bridge will be finished before June, 1912. The contract for the remaining portion of the main line between Aldermere and Tete

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Jaune Cache, 410 miles, has been let. The whole of the main line has, therefore, now been contracted for. The branch lines, Melville to Yorkton and Canora, and Melville to Regina, have been practically completed, and satisfactory progress has been made with the branches from Regina to the U.S. boundary, Regina to Moose Jaw, Biggar to Calgary, Tofield to Calgary, and the Prince Albert and Battleford branches. In all, over 1,000 miles of branch lines are under construction in Manitoba, Saskatchewan and Alberta.

RECEIPTS.

	£ s. d.	£ s. d.	£ s. d.
Freight		2,445,735 7 6	
Less—			
Cartage, etc.	53,551 16 7		
International Bridge tolls	17,980 14 4		
St. Clair Tunnel tolls	26,245 17 10		
		97,781 8 9	
			2,347,953 18 9
Passenger		951,926 8 7	
Less—			
International Bridge tolls	866 10 8		
St. Clair Tunnel tolls	6,490 5 6		
		7,356 16 2	
			944,569 12 5
Mail and express			156,656 3 2
Other revenue from transportation			74,416 14 9
Revenue from operations, other than transportation			37,585 6 4
			3,561,181 15 5

EXPENDITURE.

On account of		£ s. d.
Maintenance of way and structures	11.11%	395,713 12 5
Maintenance of equipment	16 86%	600,414 16 9
Traffic expenses	3.23%	114,947 1 8
Conducting transportation	38.56%	1,373,041 15 11
General expenses	2.71%	96,524 1 4
Total operating expenses	72.47%	2,580,641 8 1
Taxes	1.34%	47,563 16 10
	73.81%	2,628,2(5 4 11
Net income from rentals	Cr.	75,812 15 4
		2,552,392 9 7
Dining car service balance	Dr.	414 19 11
		2,552,807 9 6
Hire of equipment balance	Dr.	52,966 12 8
		2,605,774 2 2
Balance to net income account		955,407 13 3
		3,561,181 15 5

Reports of Officials.

The Chief Engineer, H. G. Kelley, states that the expenditure for maintenance of property during the half-year was $147,100.71 less than during the corresponding period of 1910.

W. D. Robb, Superintendent of Motive Power, reports expenditure, mileage, etc., as follows:—

Half-year ended	Total expenditure	Train mileage	Rate of expense per mile		
			Train	Engine	Car
			Cents	Cents	Cents
June, 1911	$4,894,198	10,132,184	48 30	36.99	3.04
" 1910	4,941,322	9,548,039	51.78	39.68	3 25

A decrease in expenditure of 1.01%, compared with an increase in train mileage of 6.12%.

	Pass'ger trains.	Freight trains.	Mixed trains.
The average number of cars moved per train was	4.7	24.6	6.9
And for the corresponding period	4.6	25.5	7.0

During the half-year one locomotive was sold and nine were scrapped, leaving 11 old light capacity locomotives set aside to be scrapped. Eighteen Pacific type passenger locomotives were built at the company's works, Point St. Charles, and 12 compound consolidation freight locomotives were purchased, delivered and put into service.

The actual stock at June 30, 1911, was 958 locomotives, against the official figure of 803 locomotives.

The comparative cost of repairs per train, engine and car mile was:—

Cost per mile.	Repairs and renewals of locomotives		All repairing charges, including shop, machinery, tools and marine equipment, etc.	
	1911	1910	1911	1910
	Cents.	Cents.	Cents.	Cents.
Train	11 48	16.99	13.11	19.00
Engine	8.79	13.02	10.04	14.56
Car	0.72	1.07	0 83	1.19

J. Coleman, Superintendent, Car Department, reports expenditure, mileage, etc., as follows:

Half-year ended	Total cost of repairs and renewals.	Total miles run by cars			Cost per mile	
		Passenger	Freight	Total	Car	Train
					Cents.	Cents.
June, 1911	$1,632,423	20,447,399	140,523,639	160,971,038	1.014	16.11
" 1910	1,344,588	19,599,216	132,637.532	152,236,748	0.883	14.08

An increase in expenditure of 21.41%, with an increase in car miles of 5.74%

A. W. Smithers, Chairman, in moving the adoption of the report, went in detail through the various items, and also dealt with his annual inspection of the system in company with the President. The report was unanimously adopted, as was also a resolution to exercise the powers conferred by the Grand Trunk Act, 1911, as amended by the Grand Trunk Amendment Act, to guarantee the principal and interest of the first mortgage bonds of the G.T. Western Ry.

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Quebec Central Railway Co's. Annual Meeting.

Following are extracts from the report for the year ended June 30, 1911, presented at the annual meeting in London, Eng., Oct. 18:—

The following summary shows a comparison of the year's revenue with that of the previous year:—

	1910-1911.	1909-1910.
Gross Earnings	$1,208,949	$1,105,867
Working Expenses	820,803	759,556
Net Operating Revenue	388,146	346,311
Interest earned	7,911	5,675
Net Income	$ 396,057	$ 351,986
Brought forward from June 30, 1910	46,593	
Total Revenue	$ 442,650	

Amount as shown above		$442,650
Interest on 4% debenture stock	$117,742	
Interest on 3% debenture stock	49,348	167,090
Balance		$275,560
Interest on 7% income bonds (coupon 11)		115,145
Surplus		$160,415

Out of the surplus shown, the directors recommend the payment of a dividend on the share capital at the rate of 3% per annum (15s. per share) as follows:—

Surplus as shown above		$160,415
3% on share capital	$101,448	
Less proportion on shares held in the treasury, $601,277	18,038	83,410
Balance to carry forward		$ 77,005

The directors regret to report the death of the Vice President, Frank Grundy, which took place in November, 1910. The invaluable services he rendered to the company as General Manager, during the days of its adversity, and until the time that his health failed him, contributed in no small measure to its present satisfactory position.

Your directors, having been approached by the Canadian Pacific Ry. Co., entered, in August last, after protracted negotiations—into a provisional agreement to lease (subject to your approval) your railway and all its assets to that company for 999 years. Bills will be presented to the Dominion Parliament and Quebec Legislature, and if passed, special meetings of the various classes of security holders will be summoned to consider, and, if thought fit, sanction the lease. Matters may be sufficiently advanced to enable the special meetings to be summoned early next year, but the date of such meetings cannot, of course, be fixed until the necessary parliamentary sanction has been obtained in Canada.

RECEIPTS.

	1911.
Passenger	$ 361 957.27
Freight	788 439.98
Mails	19.721.12
Express	17.871.91
Miscellaneous	20.958.60
	$1,208,948.88

EXPENDITURE.

Maintenance of Way and Structures	$ 161 480.51
Maintenance of Equipment	123.372.57
Traffic Expenses	26.225.21
Transportation Expenses	444,128.65
General Expenses	65,596.18
*Total Working Expenses	$ 820,803.12
Balance carried to net revenue account	388,145.76
	$1,208,948.88
*Per cent of Gross Earnings	67.89

Maintenance of way and structures cost 13.36% of gross earnings; maintenance of equipment, 10.20%; traffic expenses, 2.17%; transportation expenses, 36.74%; general expenses, 5.42%.

The gross receipts per mile of road operated were $4,797, the expenses and taxes, $3,257 and the net from operation $1,540.

The classification of freight tonnage carried was: products of fruit, 56.92%; agricultural and dairy products, 4.24%; minerals, 14.90%; manufactured goods and merchandise, 23.94%.

The mileage owned, main line and branches, is 253.44, yard tracks, sidings and spur tracks, 46.85, total 300.29; and there are five miles of trackage rights on the Intercolonial Ry., Harlaka Jct. to Levis.

Number of passengers carried, 384,689½; average earnings per passenger $0.941; tons of freight handled, 780,798, average earnings per ton, $1.01; total train miles run, 874,003.

After the chairman, Edward Dent, had moved the adoption of the report, Langham Reed said he wished, on behalf of a large body of the security holders whom he represented, to state that he did not approve of the proposed leasing arrangement to the C.P.R. He thought the security holders ought to be paid more than 3%. The report was adopted and the directors were re-elected.

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A recent Ottawa report states that Mackenzie, Mann & Co. are likely to submit a proposition to the Dominion Government in regard to leasing the Intercolonial Ry.

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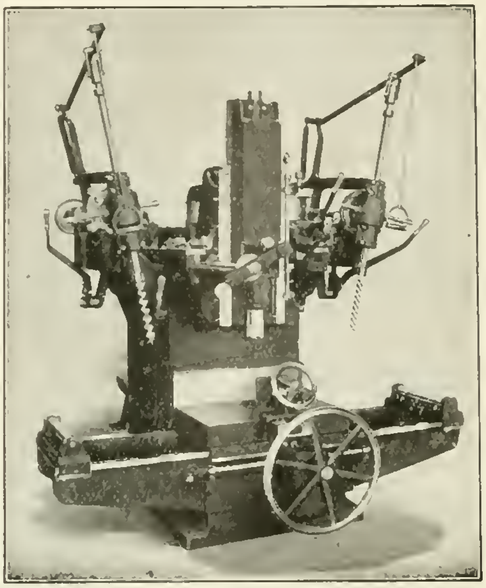

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The Piling of Treated Ties.

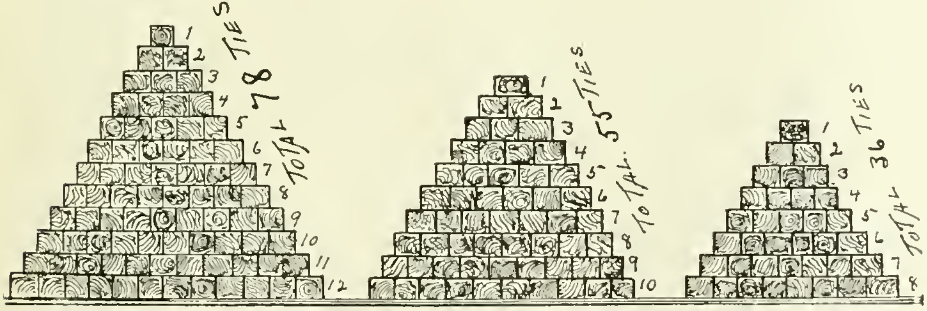
At the Roadmasters' and Maintenance of Way Associations annual meeting at St. Louis, Mo., recently, J. H. Lynch presented the report of the committee on this subject, from which the following is abstracted.

Ties treated with creosote are, as a rule, just in their infancy when received from the treating plant. Owing to the different kinds of lumber, and other causes, the amount of oil admitted into the tie varies considerably, and the amount of oil not absorbed when the tie is received from the treating plant is unquestionably noticeable.

We are of opinion that when creosoted ties are received from the plant, particularly for a road bed of gravel, rock ballast, burnt gumbo, of such nature that the track gets a box dressing and the tie is practically covered up and surrounded with material to prevent air and climatic conditions to any great extent, would be the most economical and opportune time to put them in the track and that the ties would then practically absorb all the creosote.

In many cases it is impossible to get ties in track immediately after receiving.

When ties are treated with creosote, the closer they are piled, to prevent air, rain, etc., getting between them, the better. As soon as they are unloaded they should be piled on suitable high ground, and on single track care should be used not to unload on the same side as telegraph wires, and if so, not closer than 50 ft. to telegraph poles or crossing or station signs, to eliminate danger in case of fire.



Proposed Way of Piling Creosoted Ties.

Unlike the untreated or zinc chloride treated tie, we do not consider it necessary to place old ties on the ground under creosoted ties. The sod should be removed from around the ties for at least 15 ft., to prevent fire. The number of ties unloaded along the section depends on the number of ties, per mile to be placed in the track, and that to some extent should govern the size of the piles. But most railroads have a standard of piling creosoted ties by placing two ties as sleepers and then piling them in close layers cross box style, with about 77 or 88 ties in each pile.

We wish to have considered the method of piling them all one way, either lengthwise or crosswise the track, first placing two ties for sleepers and then all other ties piled the opposite way in layers, each row one tie less, from the bottom, and tapering to the top, with one tie, as shown in the accompanying illustration. Put 78 ties in the pile with 12 ties on bottom, on the two sleepers, and if smaller piles are desired, place eleven, ten, nine or any number desired at the bottom, owing to the size of pile wanted.

Another consideration about piling them this way is that they are easier discovered if taken away or stolen; or if it is desired to protect them, all the outside ties can be bound with wire, fastened to the outside of pile with one strand.

Ties treated with zinc chloride, should be piled so as to be exposed as much as possible, to bring about rapid evaporation, and be practically free from moisture before being placed in the track. The drier the wood becomes after treating, the more securely it becomes impregnated with the zinc chloride, and the tie suffers less from climatic conditions, particularly if the ties are put in a soft roadbed, or in a wet season, or in a damp country. This has a tendency to wash away and cause the chemicals to evaporate very materially, and in a short time shows a general decay from

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Lake Superior Corporation's Annual Report.

Following are extracts from the report presented at the annual meeting at Camden, N.J., Ot. 4.

The steel plant has had its full share of orders for rails. The mill has been in steady operation with the exception of a shutdown for necessary repairs. The output as compared with the previous year is as follows:—

	1909-10	1910-11
Pig Iron	153,528	170,359
Steel rails	201,615	208,283

The production is the highest yet attained, and has been obtained in the face of difficulties consequent upon new construction work, particularly in bringing certain of the new operations into line with the old.

The Algoma Central and Hudson Bay Ry. Co.'s earnings for the year have increased and show a very satisfactory excess over those for the previous year. The operation of the railway has been conducted under similar conditions to those prevailing during the preceding year. Rapid progress is being made with the construction of the railway to a junction with the C.P.R., some 220 miles from Sault Ste. Marie, northwards. It is expected that the Hawke Lake section will be completed and in operation by October, and this will provide an immediate route from the C.P.R. to Lake Superior, via Michipicoten. The main line is being pushed on with. The viaduct at Montreal River will be completed next month, and it is hoped that the whole of this line will be finished early next year.

In view of the traffic possibilities and of your directors' desire that a complete proposition should be made of the railway, a contract has been let for its extension from the C.P.R. to a junction with the National Transcontinental Ry., 100 miles further north. The A.C. & H.B. Ry. will be, when completed to this point, the first great Canadian railway running to the north, and it will have the advantage of intersecting the three great transcontinental lines, the C.P.R., the C.N.R. and the N.T.R., from all of which satisfactory interchange of traffic is expected.

The Algoma Eastern Ry., (Formerly the Manitoulin and North Shore Ry.). As indicated in our last report, the entire construction of this railway to Manitoulin Island was contemplated. Satisfactory arrangements having been made with the Ontario Government, for extension of time for earning the land grant, and for financing the line, contracts were let in February last for its completion and the work is being rapidly pressed forward. It is hoped that the railway will be completed and in operation early next year. A valuable land grant will, on its completion, be secured. Satisfactory arrangements are being made with connecting railroads for interchange of traffic.

International Transit Co., Trans St. Mary's Traction Co. The International Transit Company has to report satisfactory progress. It commenced the year with a debit balance at profit and loss. This has been entirely wiped out, and a small profit carried forward. The Trans St. Mary's Traction Co., has maintained its earnings, and with extra service now given it is expected that increased earnings will be obtained. The ferry connecting both street railways shows very satisfactory results from its operation.

The following directors were elected for the current year: T. J. Drummond, D. C. Newton, Montreal; H. M. Price, Quebec.; T. Gibson, Toronto; J. F. Taylor, Sault Ste. Marie, Ont.; W. K. Whigham, London, Eng.; J. S. Dale, H. Coppell, J. T. Terry Jr., New York City; J. T. Lea, R. L. Austin and F. McOwen, Philadelphia, Pa.

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The Crossen Car Company, Ltd.

In connection with the refinancing of this company a prospectus has been issued of the 6% first mortgage gold bonds. The Crossen Car Co., Ltd., has taken over the properties and business of the Crossen Car Manufacturing Co., of Cobourg, Ont., the properties being free from debt and unincumbered. The capitalization is 6% first mortgage bonds authorized £200,000, issued £115,600; capital stock ordinary, authorized $1,000,000, issued $600,000. The Crossen Car Manufacturing Co., of Cobourg, was formed about 20 years ago by W. J. Crossen and his associates to continue the business founded by the late James Crossen. The arrangements for refinancing this year in connection with the new company were made by the Royal Securities Corporation.

The old company's net earnings for 1910 were $124,443 and the average net earnings for the last eight years were equal to over two and a half times the present interest charges. The reproductive value of the company's property is about $780,000. Against this there is the bond issue of £115,600 ($565,000), but the company's great strength lies in its earning power. The net earnings of the company over and above the amount required to pay bond interest and sinking fund, which will retire all the bonds by yearly drawings, commencing Jan., 1912, at 105 and accrued interest are to be used in the purchase of new property or in development and reconstruction of the present plant, until an amount equal to the present outstanding bond issue has been expended in this manner.

◆

W. Harrison, Agent, G.T.R., Sherbrooke, Que., writes: "With pleasure I enclose renewal subscription to The Railway and Marine World. I have had 32 years service in various capacities with the G.T.R. and consider your paper most accurate and instructive. I wonder how you can gather and compile such a volume of information and news for the price."

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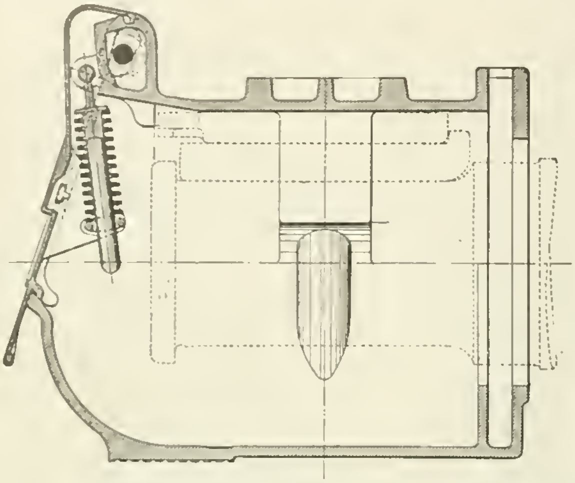

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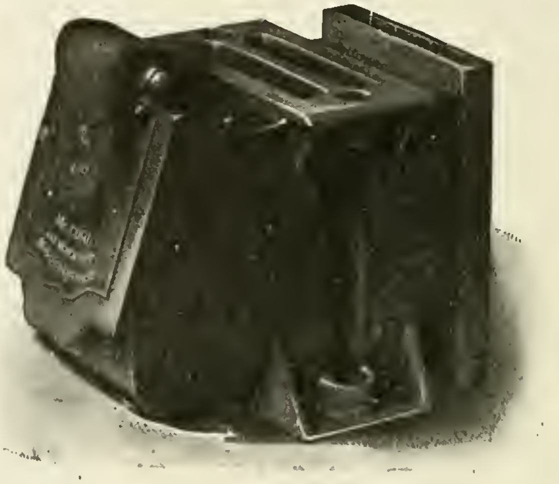

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G. T. BELL, Asst. Pass. Traffic Manager, MONTREAL.
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Alberta Railway and Irrigation Co's Annual Meeting.

For the first time the A.R. & I. Co.'s annual meeting was held at the C.P.R. general offices, Montreal, Nov. 1, previous meetings having been held in London, Eng. Following are extracts from the report of the year ended June 30, 1911:

Revenue:—		
Balance from July 1, 1910		$106,566.20
Revenue from colliery, railways, canals, profit on land sales, etc. (after providing for depreciation)		340,494.29
		$447,060.49
Deduct interest on prior lien debenture stock (now redeemed)	$ 2,243.09	
Deduct London expenses (including directors' fees, London and Canada)	18,807.79	
Deduct interim payment of 2% on the 5% debenture stock made July 1, 1911	65,000.00	
Deduct final payment of 3% on the 5% debenture stock made Oct. 20, 1911	97,500.00	
		183,550.88
Surplus		$263,509.61
The directors recommend a dividend of 5% upon the share capital, which will absorb		162,500.00
And leave		$101,009.61

to be carried forward to next account.

The coal sales for the year were 271,950 tons, compared with 239,623 for the previous year. The gross earnings of the railway were $346,573.48, compared with $378,128.02 for the previous year. The land sales aggregated 5,658 acres and realized $229,199.60, the average price being about $64.33 per acre for irrigable land, and $5.28 for non-irrigable land. These sales comprised 2,228 acres covered by the trust deed for the debenture stockholders and 3,430 acres free from the trust. The profit from sale of town lots was $45,046. The estimated net profit from all the above sales was $211,000. The profit received during the year in cash from lands free from the trust sold during that and previous years (after deducting the commissions and land expenses for the year) viz., a net sum of $217,300, is included in the present revenue account, the balance remaining in reserve pending the realization of the outstanding instalments and the lands still unsold. The total amount in reserve in connection with sales of the company's lands is now $1,705,372.15, and in connection with sales of C.P.R. lands $48,187.96, a total of $1,753,560.11. On June 30 last the company had 215,848 acres remaining unsold, in addition to many lots in Lethbridge, Raymond, Milk River, New Dayton and Chin. The receipts from water rentals were $31,002.05, compared with $48,018.84 for the previous year.

At a special general meeting of shareholders on Feb. 22 last, approval was given to the disposal of all the company's railways and other properties to the C.P.R. Co., partly by conveyance and partly by lease, which arrangement has been confirmed by the latter company. The lease is for 999 years, commencing from Jan. 1, 1912, and comprises this company's existing railways and any railways which the company is or may be authorized to construct, together with the stations, shops, rolling stock and equipment, and generally everything which has been or may be acquired in connection with the railways and the franchise. By the agreement this company sells to the C.P.R. Co. all the lands, irrigation works and generally all assets of this company, except the railway and property which is leased. As on and from Jan. 1, 1912, the C.P.R. Co. assumes liability for all outstanding obligations, including the debenture stock, both as to principle and interest. In view of the arrangements made with the C.P.R. Co. it was found convenient to transfer the head office of this company from London to Montreal.

Under the agreement with the C.P.R. Co., provision was made for the shareholders of this company receiving a dividend of 5% per annum from July, 1910, to Dec. 31, 1911. In accordance therewith, a dividend of 5% for the year ended June 30, 1911, will be payable after the annual general meeting, and notice will be given when the dividend of 2½% for the half year ending Dec. 31, 1911, will be payable. The share certificates will, on and after Jan. 1, 1912, be endorsed with the obligation of the C.P.R. Co. to pay 3% half-yearly, commencing with a payment on July 1, 1912, in respect of the preceding six months. By arrangement with the C.P.R. Co. notice has been given for the redemption on Jan. 1, 1912, of the outstanding 5% debenture stock of this company.

A bylaw was submitted for adoption decreasing the number of directors to five and, in accordance with the Railway Act of Canada, the directors retire from office. Following are the officers and directors for the current year:—President, E. T. Galt; Vice President, A. M. Nanton; other directors, Sir Edward Clouston, W. M. Ramsay, and John Galt.

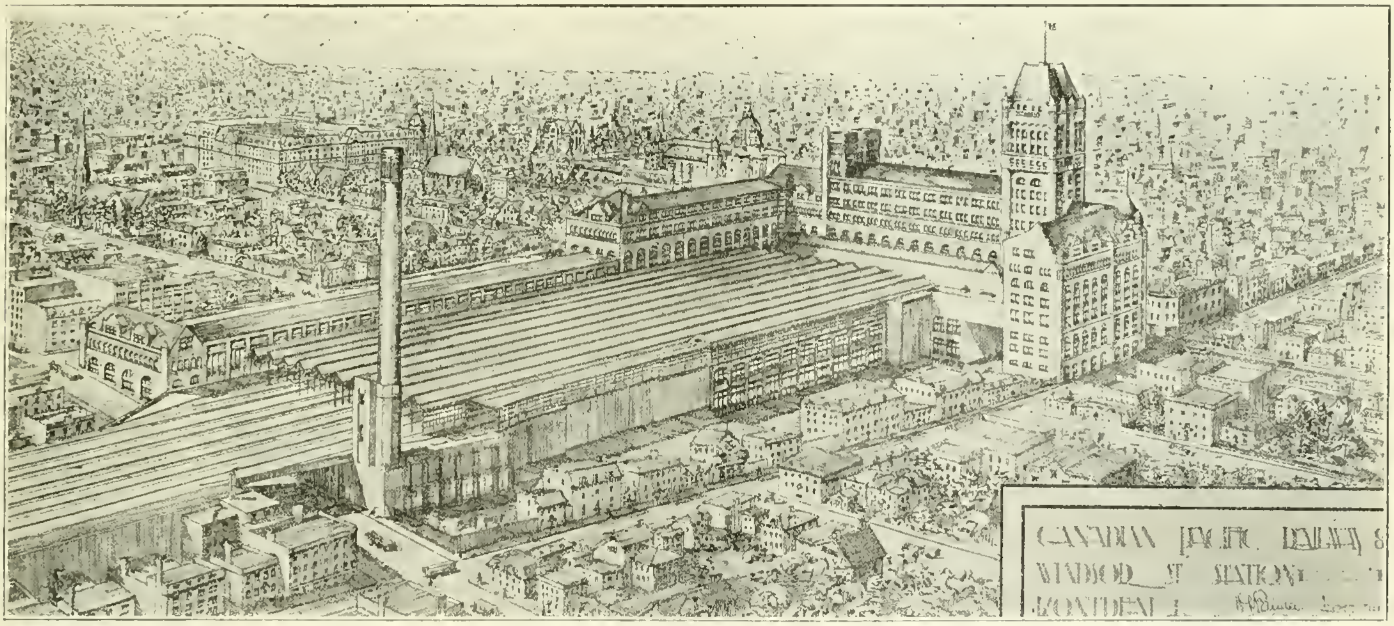
◆

C.P.R. Windsor St. Station, Montreal

Work on the extensive additions which the C.P.R. is building at the Windsor St. Station, Montreal, is progressing very favorably. It is expected that the new structure will be ready for occupancy by May next. Many changes will be made in the arrangement of the present departments, many of them contemplating removal to the newer portion. It is also stated that a number of officials in other parts of the city will be brought to these headquarters. The staffs that will be transferred first will be those located at the southern end of the present structure, which will permit the workmen to tear down the end wall and proceed with the extension of the new building to join the present structure.

The building is now entirely sheathed with its stone veneer, which covers the reinforced concrete shell. In the interior, the partitions are being rapidly put in place, and outside a start has been made in enclosing the part of the concourse not fronted by tracks. The boiler house is practically completed and the boilers installed. The big stack has reached a height of 200 ft. A large force of men is at work on the viaduct. On the top of the viaduct, a big steam shovel is levelling off the ground to the rear of the new station.

When completed, this building will be the largest and best equipped station in Canada. The accompanying illustration from a photograph of the architect's perspective drawing gives a comprehensive and realistic view of the station as it will finally appear. Nearly all the portion to the right of the two short towers in the centre of the building is the new section being built.



Perspective View of Canadian Pacific Railway Windsor St. Station, Montreal, as enlarged.

◆

The Anglo-Canadian Contractors (Limited) has been incorporated under the Dominion Companies Act, with a capital of $250,000 and offices at Toronto, to carry on general contracting and other businesses incidental thereto. The company has tendered for the construction of the tube railway system for Toronto.

ADDITIONAL SAFETY AND ECONOMY IN
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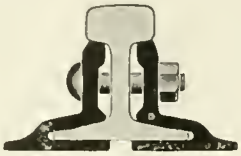

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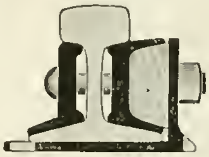

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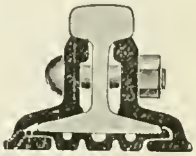

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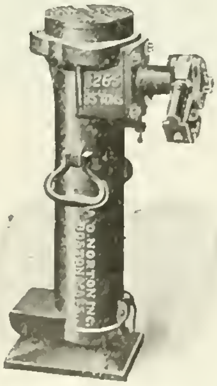

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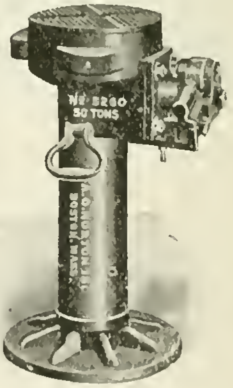

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Grand Trunk Railway Construction, Betterments, Etc.

Montreal Yards.—The Board of Railway Commissioners has authorized the company to expropriate certain lands in Ste. Ann's Ward, Montreal, in connection with the enlargement of its yards, and to maintain the ship fever monument. While this order was made in Jan. last, it has just been issued, as certain details had to be adjusted.

Kingston Freight Sheds.—Property owners on Place d'Armes St., Kingston, Ont., have been notified by the G.T.R. that possession is to be taken at once of their properties. The properties acquired by the company lie between Wellington and King streets, and from Place d'Armes to Anglin's lumber yards, and on the site of the present buildings a large new freight shed is to be built.

Granite for Ballast.—Application is being made to the Kingston, Ont., city council by the G.T.R. for the supply of 750 h.p. electrical energy, to be delivered at a quarry near Kingston Mills. It is stated that the quarry will be opened in the spring, and that a large crushing plant will be installed to provide crushed granite for ballast. It is said that this ballast will first be laid between Montreal and Toronto.

Tay Jct. to Birch Jct.—The Board of Railway Commissioners has authorized the opening for traffic of the line between Tay Jct., on the Orillia-Midland line, and Birch Jct., on the Penetanguishene line. This order rescinds the previous order under which the line was opened for traffic, as mentioned in our last issue.

Nipissing Jct., Ont.—The Board of Railway Commissioners has authorized the building of a branch line crossing the C.P.R. at Nipissing Jct., Ont., to the Temiskaming and Northern Ontario Ry., and the installation of an interlocking plant.

Toronto Belt Line.—While in Toronto recently C. M. Hays, President, went over the old Belt Line, and it is said that as a result of his inspection the remaining portion of the line will be put in order for traffic. The company is at present using the section from its West Toronto yards to Yonge St.

Hamilton, Ont.—C. M. Hays, President, and other officials met the Hamilton city council and representatives of the business interests of the city, Oct. 28, and discussed the railway situation. The claims of the city for a new passenger station and other improvements were presented, and Mr. Hays said that while a new station would be built, the company had to consider it in connection with the claims of other places, where improvements were necessary. The question of a site had to be settled, together with a number of other incidental matters, before any definite work could be undertaken. The company had expended a large amount of money upon improvements during the past 15 years; money was still being spent upon improvements, and there were demands from towns all along the line for equally large expenditures upon necessary improvements. While the company was desirous of doing all it could to meet these demands it could not go further than its financial resources, or other circumstances which had to be considered, would permit.

Guelph, Ont.—The old station building at Guelph, Ont., is to be demolished and the site is to be utilized for laying an additional siding for yard accommodation.

Chatham, Ont.—The Board of Railway Commissioners has authorized the building of a spur and interchange track connecting with the Lake Erie and Detroit River Ry. tracks (operated by the Pere Marquette Rd.), and an interchange track with the Chatham, Wallaceburg and Lake Erie Ry. in Chatham, Ont.

Detroit Station, etc.—On the occasion of a recent visit to Detroit, Mich., C. M. Hays, President, intimated that the G.T.R. might use the tunnel under the Detroit River, and the station which the Michigan Central Rd. proposes to build. Nothing, however, will be done for some time. If the arrangement cannot be made it is expected that the present station at Brush St. will be considerably enlarged. (Nov., pg. 1039.)

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Transportation Conventions in 1912.

Mar. 17.—American Association of Railroad Superintendents, Chicago, Ill.

Mar. 19-21.—American Railway Engineering Association, Chicago, Ill.

May 12.—Railway Industrial Association, Kansas City, Mo.

May 14-17.—Master Boiler Makers Association, Pittsburgh, Pa.

May 15.—Freight Claim Association, Buffalo, N.Y.

May 22.—Association of Railway Claim Agents, Los Angeles, Cal.

June 12-14.—American Railway Master Mechanics' Association, Atlantic City, N.J.

June 16-18.—Wood Preservers' Association, Chicago, Ill.

June 17-19.—Master Car Builders' Association, Atlantic City, N.J.

June 18.—Train Dispatchers Association of America, Louisville, Ky.

June 18-21.—American Association of Freight Agents, Chicago, Ill.

June 24.—Association of Railway Telegraph Superintendents, New York City.

June 26.—Association of American Railway Accounting Officers, Quebec, Que.

Aug.—Travelling Engineers Association.

Sept.—Master Car and Locomotive Painters' Association of United States and Canada.

Sept. 10.—Roadmasters' and Maintenance of Way Association, Buffalo, N.Y.

Oct.—American Railway Bridge and Building Association, Baltimore, Md.

Nov. 6-10.—Association of Railway Electrical Engineers, Chicago, Ill.

Nov. 15.—American Railway Association, Chicago, Ill.

Dec. 12-13.—Association of Transportation and Car Accounting Officers, Louisville, Ky.

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Grand Trunk Railway Subsidiary Companies.

Following are the officers for the current year:—

Bay City Terminal Ry.—President, C. M. Hays; Vice President, A. B. Atwater; Secretary and Treasurer, G. W. Alexander.

Canada Atlantic Ry.—President, C. M. Hays; Vice President, E. H. Fitzhugh; Secretary and Treasurer, Frank Scott; General Auditor, W. H. Ardley.

Chicago and Kalamazoo Terminal Rd.—President, A. B. Atwater; Vice President, F. M. Hodge; Secretary and Treasurer, G. W. Alexander.

Detroit and Toledo Shore Line Rd.—President, T. P. Shonts; Vice President, H. G. Kelley; Secretary and Treasurer, G. W. Alexander.

Chicago, Detroit and Canada Grand Trunk Jct. Rd.—President, C. M. Hays; Vice President, H. G. Kelley; Treasurer, Frank Scott; Secretary, G. W. Alexander.

Detroit, Grand Haven and Milwaukee Ry.—President, C. M. Hays; Vice President, H. G. Kelley; Secretary and Treasurer, G. W. Alexander.

Grand Rapids Terminal Rd.—President, A. B. Atwater; Secretary and Treasurer, G. W. Alexander.

Grand Trunk Jct. Ry.—President, C. M. Hays; Vice President, H. G. Kelley; Secretary and Treasurer, G. W. Alexander.

Grand Trunk Milwaukee Car Ferry Co.—President, C. M. Hays; Vice President, H. G. Kelley; Secretary and Treasurer, G. W. Alexander.

Grand Trunk Western Ry.—President, C. M. Hays; Vice President, H. G. Kelley; Secretary and Treasurer, G. W. Alexander.

International Bridge Co.—President, C. M. Hays; Vice President, H. G. Kelley; Treasurer, Frank Scott; Secretary, G. W. Alexander.

Michigan Air Line Ry.—President, C. M. Hays; Vice President, H. G. Kelley; Treasurer, Frank Scott; Secretary, G. W. Alexander.

Pontiac, Oxford and Northern Rd.—President, C. M. Hays; Vice President, H. G. Kelley; Secretary and Treasurer, G. W. Alexander.

St. Clair Tunnel Co.—President, C. M. Hays; Vice President, H. G. Kelley; Treasurer, Frank Scott; Secretary, G. W. Alexander.

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Minneapolis, St. Paul and Sault Ste Marie Ry. Co's Annual Report.

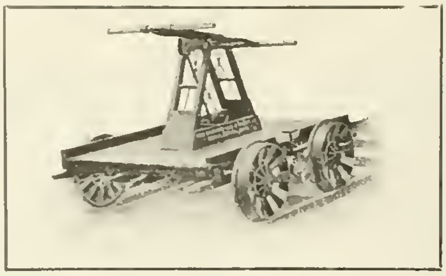
The report for the year ended June 30, of this subsidiary C.P.R. company, includes the Wisconsin Central Ry., now operated as the Chicago Division of the line. Following are the figures for the year:—

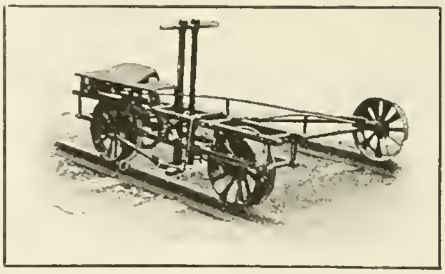
	Sault Line.	Chicago Division.	Entire System.
Gross earnings	$13,135,907.80	$8,836,669.98	$21,972,577.78
Operating expenses	8,375,995.03	6,622,343.25	14,998,333.28
Net earnings	$ 4,759,912.77	$2,214,326.73	$ 6,974,239.50
Income from other sources	913,204.23	50,878.34	964,082.57
Total income	$ 5,673,117.00	$2,265,205.07	$ 7,938,322.07
Fixed charges, taxes, etc.	3,841,690.35	2,496,484.10	6,338,174.45
Surplus	$ 1,831,426.65		$ 1,600,147.62
Deficit		$ 231,279.03	

Compared with the previous year, the Sault line gross earnings show a reduction of $2,271,271.60; this is accounted for by the fact that last season's grain crop in North Dakota and portions of Minnesota was almost a total failure and resulted not only in a large loss of grain tonnage but also, on account of the reduced purchasing power of rural districts in a considerable reduction in general business. Two thousand miles of the company's lines are located in what may be termed the grain district of the Northwest and crop conditions are naturally very promptly reflected in its districts, in a considerable reduction of earnings.

◆

The C.P.R. has awarded the grand prize for the best floral display at its stations to the station agent at Agassiz, B.C. Other prizes have been awarded to the station agents at Woodstock, N.B., Sherbrooke, Que., and Portage la Prairie, Man.





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Orders by the Board of Railway Commissioners.

Beginning with June, 1904, we have published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given or orders, immediately following the numbers, are those on which the hearing took place and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the dates assigned to them.

15044. Oct. 10.—Authorizing G.T.R. to open for traffic portion of its line from Tay Jct. between Orillia and Midland to Birch Jct., between Colwell and Penetanguishene, Ont., and rescinding order 14910, Oct. 3.

15045. Oct. 11.—Extending to Nov. 30, time for completion by G.T.R., of overhead bridge at Queen St., Palmerston, Ont., as authorized by order 14164, June 24.

15046. Oct. 10.—Authorizing G.T.R. to rebuild four bridges on its Northern Division and rescinding order 14896, Sept. 29.

15047. Oct. 10.—Authorizing Ottawa Electric Ry. to maintain wires across C.P.R. at Victoria St. Westboro, Ont.

15048. Oct. 11.—Authorizing Vancouver Victoria and Eastern Ry. to divert Yale Road, Yale District, B.C.

15049. Oct. 10.—Authorizing Point Anne Ry. to connect with C.N.R. siding on lot 20, near Pointe Anne.

15050 to 15052. Oct. 5.—Authorizing C.N.Q.R. to cross La Salle Ave., Desjardins St. and Piux IX Avenue, Maisonneuve.

15053. Oct. 11.—Authorizing C.N.R. to operate trains with C.P.R. over Soo Line crossing near Midale, Sask., without stopping, interlocker having been installed.

15054. Oct. 11.—Amending order 14047, June 23, by removing speed limit over portion of C.N.R. Maryfield to Luxton, Sask.

15055, 15056. Oct. 10.—Authorizing C.N.R. to open for traffic its line from Luxton to Radville, Sask., 72 miles, and for freight traffic from Radville to end of track on Moose Jaw extension, 83 miles.

15057. Oct. 11.—Authorizing C.N.R. to cross with its Deslisle extension, 33 highways in Saskatchewan.

15058. Oct. 14.—Substituting Maisonneuve for Montreal in order 14925, Oct. 5.

15059. Oct. 13.—Authorizing Ottawa Electric Ry. to erect wires across C.P.R. on Carling ave., Ottawa.

15060. Oct. 12.—Authorizing Alberta Central Ry. to build two bridges between Red Deer and Rocky Mountain House, over Flemings Creek, mileage 60.1, and over south branch of Horseguard River, at mileage 50.

15061. Oct. 13.—Authorizing T. H. & B. R. to build two spurs for Diamond Flint Glass Co., Hamilton, Ont.

15062. Oct. 14.—Authorizing C.P.R. to build bridge 85.1 on its Brandon subdivision, Manitoba Division.

15063 to 15065. Oct. 13.—Authorizing C.P.R. to build spurs for city of Regina, Sask., city of Medicine Hat, and O. Ludwig, near Dunmore, Alta.

15066. Oct. 13.—Authorizing C.P.R. to rebuild bridge 102.6 on its Cascade subdivision, B.C. Division.

15067, 15068. Oct. 10.—Approving location C.P.R. stations at Blackie and Brant, Alta.

15069, 15070. Oct. 12.—Authorizing C.N.R. to cross with its Rossburn line 22 highways, and with its Maryfield branch, 12 highways in Saskatchewan.

15071, 15072. Oct. 13.—Approving C.N.O.R. revised location through unsurveyed territory, Algoma District, mileage 124.2 to 127.32 and 92.37 to 93.27, from Sudbury Jct.

15073, 15074. Oct. 13, 11.—Authorizing C.N.R. to cross with its Maryfield branch one public road and 17 highways in Saskatchewan.

15075. Oct. 12.—Authorizing C.N.Q.R. to cross Main and Union Sts., Hawkesbury, Ont.

15076. Oct. 13.—Authorizing Saskatchewan Government to build Christopher St. across C.P.R., in Theodore.

15077. Oct. 14.—Amending order 14924, Oct. 5, by substituting town of Maisonneuve for city of Montreal.

15078. Oct. 13.—Authorizing C.N.R. to cross public road on its Maryfield branch, Sask.

15079. Oct. 13.—Dismissing Powell Door & Lumber Co.'s application re G.T.R. level crossing over Front St., Toronto.

15080. Oct. 12.—Postponing effective date of tariffs on hay and straw between eastern points and U.S. points until Jan. 1, 1912, matter to be heard at Board's sittings at Ottawa on Nov. 21, on application of Montreal Board of Trade Transportation Bureau. This order is given in full on another page.

15081. Oct. 11.—Ordering Grand Valley Ry. to maintain suitable fence in front of property in lot 9, con. 3, South Dumfries tp., Ont., within 30 days, under penalty $10 for every day in default.

15082, 15083. Sept. 8.—Naming express collection and delivery limits for Lethbridge and Medicine Hat, Alta.

15084. Sept. 11.—Dismissing Board of Trade's application, with leave to renew if railways fail to take care of traffic at transfer track between C.P.R. and C.N.R., near Stettler, Alta.

15085. Sept. 14.—Authorizing Qu'Appelle, Long Lake & Saskatchewan Rd. and Steamboat Co. to take possession of C.P.R. lands for building spur near Saskatoon, Sask.

15086, 15087. Oct. 11.—Authorizing T.H. & B.R. to build spurs into premises of Steel Co. of Canada and thence to J. W. Marsh's lands, near Sherman Inlet, to Standard Underground Cable Co., and E. C. Atkins and Co., Hamilton, Ont.

15088. Oct. 13.—Amending order 14686, Aug. 1, re interlocking plant between G.T.P. Branch Lines Co. and C.P.R., Langdon Branch, Alta.

15089. Oct. 12.—Amending order 14696, Sept. 5, re G.T.R. spur for Houedry & Sons, Peterboro, Ont.

15090. Oct. 11.—Authorizing city of Hamilton, Ont., to build subway under T.H. & B.R. spur at proposed intersection of Birch Ave., near Sherman Inlet.

15091. Sept. 14.—Authorizing C.P.R. to complete spurs for A. Bowerman, Saskatoon, Sask., as provided in order 14466, July 17, subject to council's approval.

15092. Oct. 13.—Amending order 13608, May 8, re G.T.R. Humber River Bridge compensation.

15093. Oct. 16.—Authorizing V.V. & E. Ry. and Navigation Co. to build dock and warehouse on Burrard Inlet, B.C.

15094. Oct. 17.—Authorizing Algoma Central and Hudson Bay Ry. to open for traffic its line from mileage 65 to 85 from Sault Ste Marie and from Hawk Lake Jct. mileage 164 to Josephine Jct., mileage 170. Michipicoten Branch.

15095. Oct. 17.—Authorizing C.N.R. to cross and divert public road and highway on its Prince Albert-Battleford line, Sask.

15096, 15097. Oct. 12.—Approving C.N.O.R. location through Trafalgar and Nelson tps., mileage 19.68 to 34.84 from Yonge St., Toronto; and through Toronto tp., mileage 10.97 to 19.68 from Yonge St., Toronto.

15098. Oct. 16.—Authorizing C.P.R. to build two spurs for city of Medicine Hat and Alberta Rolling Mills Co., Medicine Hat, Alta.

15099. Oct. 16.—Approving location of new C.P.R. station building at McKee, on its Waltham Subdivision, Eastern Division.

15100. Oct. 10.—Authorizing C.P.R. to cross and divert 16 highways on its Swift Current Southwesterly Branch in Swift Current. Sask.

15101. Oct. 11.—Ordering M.C.R. to protect crossing at Queen St., Tilbury, Ont., by gates within 90 days, bell at Queen St. to be moved to Tilbury St., 20% from railway grade crossing fund, 20%, not to exceed $100, by town of Tilbury

15102. Oct. 18.—Ordering C.P.R. and G.T.P.R. to build transfer track for interchange of traffic at Balcarres, Sask., by Nov. 15.

15103. Oct. 12.—Authorizing town of Berlin, Ont., to build Tuerk St. across G.T.R., watchman to be employed between 7 a.m. and 6 p.m.

15104. Oct. 12.—Authorizing G.T.R. to build spur for Steel Co. of Canada, Ltd., Toronto.

15105. Oct. 17.—Authorizing G.T.P. Branch Lines Co. to cross with its Calgary Branch, 10 highways in Alberta.

15106. July 4.—Dismissing application of town of Sudbury, Ont., to build highway across C.P.R. and Algoma Eastern Ry., to connect Pine and Beech Sts.

15107. Oct. 20.—Ordering G.T.R. to provide suitable crossing on Gagnon's farm, Alexandria, Ont.

15108. Oct. 20.—Authorizing C.P.R. to open for traffic its Kipp-Aldersyde Branch, mileage 28.2 to 84.2.

15109. Oct. 21.—Approving shift in C.P.R. main line of 21 ft. south at mileage 93.5, in vicinity of Stave River, B.C.

15110. Oct. 16.—Authorizing C.P.R. to build its Wilkie Northwesterly line across six highways in Saskatchewan.

15111. Oct. 17.—Authorizing C.P.R. to cross with its Moose Jaw Northwesterly Branch, 20 highways in Saskatchewan.

15112, 15113. Oct. 19, 16.—Authorizing C.P.R. to build spur for Adolph Lumber Co. at Baynes Lake, B.C., and re-arrange sidings and operate new ones for Superior Portland Cement Co., Orangeville, Ont.

15114. Oct. 19.—Rescinding order 13475, Apr. 19, re diversion of highways near Lindsay, Ont.

15115. Oct. 16.—Authorizing C.P.R. to build spurs for city of Moose Jaw, Sask.

15116. Oct. 11.—Authorizing C.P.R. to rebuild Bull River Bridge, Kootenay Central, Ry., B.C.

15117. Oct. 19.—Adding "work to be completed by Jan. 1, 1912" to order 14876, Sept. 2, re C.P.R. station at Mountain, B.C.

15118 to 15120. Oct. 20.—Approving C.P.R. station buildings to be built at Eldon, Bethany, and Orillia, Ont.

15121. Oct. 18.—Authorizing British Columbia Southern Ry. (C.P.R.) to build its Waldo Branch to Baynes Lake across two highways and road diversions, mileage 0 to 1.6.

15122. Oct. 18.—Authorizing C.P.R. to rebuild bridge 45.8 on its Pheasant Hills subdivision, Manitoba Division.

15123. Oct. 17.—Authorizing C.N.R. to open for traffic its Thunderhill extension from Pelly to Preeceville, mileage 36.6 to 72.6, 37 miles.

15124, 15125. Oct. 20.—Amending orders 14354, July 24, and 14221, July 15, by striking out word freight.

15126. Oct. 18.—Authorizing C.N.R. to cross with its Prince Albert-Battleford line, 23 highways in Saskatchewan.

15127. Oct. 20.—Amending order 14978, Oct. 3, re C.N.O.R. bridge over Rouge River, Que.

15128. Oct. 18.—Approving revised location of James Bay and Eastern Ry. (C.N.R.) mileage 18.2 to 19.6, Ashuapmouchouan tp., Que.

15129. Oct. 18.—Approving revised location of Algoma Central and Hudson Bay Ry. between mileage 30.08 and 53 from Hawk Lake Jct., Ont.

15130. Oct. 20.—Authorizing Dominion Atlantic Ry. to rebuild Bear River Bridge.

15131. Oct. 20.—Authorizing city of Windsor, Ont., to renew and build outlet of Parent Ave. sewer under G.T.R.

15132. Oct. 20. — Authorizing Springfield municipality, Man., to build highway over C.P.R. at Hazelridge, Man.

15133. Oct. 16.—Authorizing G.T.R. to rebuild bridge 44 at mileage 87.82, Lindsay, Ont.

15134, 15135. Oct. 18, 20.—Authorizing G.T.R. to build spur into premises of Rex Spray Co., Brighton tp., and Yale & Towne Mfg. Co., St. Catharines, Ont.

15136. Oct. 17.—Authorizing G.T.P.R. to cross highway at mileage 121.4, St. Francois Xavier parish, Man.

15137. Oct. 18.—Authorizing G.T.P.R. to build spur into premises of Edmonton Exhibition Association, Edmonton, Alta.

15138. Oct. 17.—Authorizing G.T.P.R. to cross highway at mileage 38.4, Saskatoon District, Sask.

15139. Sept. 15.—Dismissing application J. H. Ashdown Co. for revision to Canadian Car Service rules to permit additional time for unloading bar iron, steel and long pipe.

15140. Oct. 19.—Extending for two months, time for completion of C.P.R. spur for R. D. Lindsay, Vancouver, B.C.

15141. Sept. 15.—Dismissing application of Canadian Freight Claims Bureau of Winnipeg re delay of C.P.R. and C.N.R. in settling claims for overcharges caused by referring same to Montreal. This order is given in full on another page.

15124. Oct. 11.—Authorizing T.H. & B.R. to build spur for H. W. Farr, Hamilton, Ont.

15143. Oct. 19.—Authorizing Saskatchewan Government to build highway over C.P.R. at Nokomis, Sask.

15144. Oct. 18.—Approving V.V. & E. Ry. & Nav. Co.'s bylaw authorizing H. A. Noble, G.P.A., to prepare and issue tariffs of passenger tolls.

15145. Oct. 12.—Approving relocation of G.T.R. station at Bradford, Ont., and ordering road crossing to be provided by company.

15146.—Authorizing G.T.R. to build bridge at highway diversion in Esquesing tp., District 15, Middle Division, 20% from railway grade crossing fund, 15%, by Esquesing tp., and 65% by G.T.R., work to be completed by Dec. 31.

15147. Oct. 19.—Authorizing C.N.O.R. to cross public road in St. Benoit parish, Que.

15148. Oct. 15.—Ordering C.N.R. to fence its right of way on southeast of sec. 2, tp. 18, r. 20, w. 2 m., Sask., by June 15, 1912, subject to penalty of $10 a day.

15149. Sept. 8.—Naming express collection and delivery limits for Calgary, Alta.

15150. Sept. 12.—Ordering Edmonton, Yukon & Pacific Ry. (C.N.R.) to show cause why order should not issue authorizing

Electric Headlight Saves Train

(From Daily Papers)

"Wednesday night B——— forgot to deliver an order to hold Eastbound Passenger Train No. 6, and only the fact that the Electric Headlight of the oncoming Passenger train was seen at a great distance by the Engineer of the Westbound Freight prevented a head end collision in the ——— Canyon near ———. The warning light was seen in time to enable the freight to get back on to the siding at ———."

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building of subway at crossing of Edmonton Radial Ry., Edmonton, Alta.

15151, 15152. Oct. 12.—Ordering G.T.R. to erect gates at Royce Ave., Toronto, within 90 days, 20% from railway grade crossing fund, and authorizing it to build subway to carry Coxwell Ave. under tracks, Toronto.

15153. Oct. 21.—Ordering C.N.R. and C.P.R. to build transfer track at Carberry, Man., work to be completed by June 15, 1912.

15154 to 15158. Oct. 23.—Approving location of C.P.R. stations at Imperial, Holdfast, Renown, Brora and Liberty, Sask.

15159. Jan. 23.—Authorizing G.T.R. to expropriate certain land in St. Ann's Ward, Montreal, in connection with enlargement of yard, and to maintain Ship Fever Monument.

15160. Oct. 24.—Authorizing G.T.R. to build spur for city of Montreal filtration plant under construction.

15161. Oct., 23.—Authorizing C.P.R. to rebuild bridge 95.3 on its Cascade subdivision, B.C. Division.

15162. Oct. 24.—Authorizing C.P.R. to build spur for B. F. Ackerman, Winnipeg, Man.

15163. Oct. 24.—Authorizing C.P.R. to build St. Rose Bridge, at mileage 17.4, Ottawa subdivision, Eastern Division.

15164. Oct. 21.—Authorizing C.P.R. to build its Bulyea South Branch across highway at mileage 15.08, Sask.

15165. Oct. 20.—Approving location of Georgian Bay and Seaboard Ry. (C.P.R.) station at Brechin, mileage 40, Ont.

15166. Oct. 24.—Approving revised location of Dominion Atlantic Ry. North Mountain Branch from Centreville to Lakeville, 5.1 miles.

15167. Oct. 23.—Authorizing C.N.R. to build spur line to roundhouse in Atwood tp., Rainy River District, Ont.

15168, 15169. Oct. 21, 23. — Authorizing G.T.P. Branch Lines Co. to cross highway with its Regina-Boundary Branch, at mileage 26.8, and to divert highway on its Biggar-Calgary Branch, Sask., at mileage 99.7.

15170. Oct. 23.—Authorizing C.P.R. to rebuild bridge 95.2 on its Cascade subdivision, B.C. Division.

15171. Oct. 23.—Ordering C.P.R. to open original drain blocked by tracks built east of Vaudreuil, Que.

15172 15173. Oct. 23.—Approving location of C.P.R. stations at Young and Druid, Sask.

15174. Oct. 20.—Authorizing C.P.R. to build spur for Sandstone Brick & Sewer Pipe Co., at Sandstone, Alta.

15175. Oct. 23.—Authorizing G.T.R. to build branch and interchange track to a connection with Pere Marquette Rd., in Chatham, Ont.

15176. Oct. 21.—Authorizing Welland County Telephone Co. to erect wires across G.T.R. in Bertie tp., Ont.

15177. Oct. 20.—Authorizing C.P.R. to rebuild bridge 26.7 on its Shuswap Subdivision, B.C. Division.

15178. Oct. 17.—Authorizing C.P.R. to serve H. Brown with notice of application by advertisement, in connection with taking lands in West Toronto, Ont.

15179. Oct. 25.—Authorizing G.T.R. to build spurs for Firstbrook Box Co., Penetanguishene, Ont.

15180. Oct. 25.—Authorizing G.T.P.R. to cross highway in Coast District, B.C.

15181. Oct. 25.—Authorizing Cumberland tp., Ont., to cross G.T.R. with highway at lot 28, con. 4.

15182. Oct. 21.—Authorizing C.P.R. and G.T.P.R. to operate trains over interlocker at mileage 118 from Regina, without bringing trains to a stop.

15183, 15184. Oct. 25. 24. — Authorizing C.P.R. to rebuild bridge 25.7 on its Laggan subdivision, Alberta Division, and open for traffic its second track between Fort William and Port Arthur, Ont., 4.2 miles.

15185. Oct. 20.—Authorizing C.P.R. to build two spurs for Oliver & Webster, in Sydenham tp., Ont.

15186. Oct. 25.—Approving G.T.P.R. bylaw authorizing J. E. Dalrymple, Fourth Vice President, and C. E. Dewey, G.F.A., to prepare and issue tariffs of freight tolls.

15187. Oct. 20.—Authorizing C.N.O.R. to build bridge over Rideau river and canal at Smiths Falls.

15188. Oct. 21.—Authorizing G.T.P. Branch Lines Co. to cross with its Biggar-Calgary branch, four highways in Saskatchewan.

15189. Oct. 25.—Authorizing city of St. Boniface, Man., to lay main sewer under C.P.R.

15190 to 15192. Oct. 25.—Authorizing C.P.R. to build bridges 96.6, 90.2 and 60.0 over irrigation canal, on its Calgary subdivision, Alta.

15193, 15194. Oct. 26, 24. — Authorizing G.T.P.R. to divert highway in s.w. ¼ sec. 26, tp. 37, r. 18, w. 3 m., Sask., and on main line at mileage 69.6, Alta.

15195. Oct. 24.—Approving G.T.P. Branch Lines Co.'s revised location from sec. 33, tp. 23, r. 29, w. 4 m., to north line of sec. 1, tp. 24, r. 1, w. 5 m., mileage 196.81 to 198.44, South Alberta District.

15196, 15197. Oct. 25.—Approving location of Georgian Bay and Seaboard Ry. (C.P.R.) stations at Grasshill and Uhtoff, Ont.

15198. Oct. 26.—Authorizing Saskatchewan Government to build highway across C.N.R. along north of sec. 29 and 30, tp. 32, r. 8, w. 3 m.

15199. Oct. 25.—Authorizing Algoma Central and Hudson Bay Ry. to build bridge over Batchewana River at mileage 79.68.

15200. Oct. 24.—Authorizing G.T.P.R. and C.P.R. to operate crossing on east ½ sec. 23, tp. 17, r. 20, w. 2 m., Sask., trains to be flagged by watchmen, and amending order 11420, July 26, that G.T.P.R. be at expense of raising C.P.R. grade.

15201. Oct. 11.—Ordering that G.T.R. crossing at Queen St., Tilbury, Ont., be protected by gates within 90 days, 20% to be paid from railway grade crossing fund, electric bell at Queen St. to be moved to Tilbury St., and order 15101 rescinded.

15202. Oct. 12.—Amending order 14868, Sept. 23, re C.N.O.R. location through part of Toronto and York and Etobicoke tps., mileage 0, in line 4, to be changed to mileage 3.

15203, 15204. Oct. 27, 28. — Approving C.N.O.R. revised location in South Crosby tp., mileage 186.77 to 188.78, east from Toronto, and authorizing it to cross Russell Road, at Junction Gore.

15205. Oct. 26.—Authorizing G.T.P. Branch Lines Co. to divert highway on its Regina-Boundary branch at mileage 63.1, Sask.

15206. Oct. 27.—Approving G.T.R. plans for bridges over Mill, Peter, Ontario and Barrett Sts., Port Hope, Ont., the subway at Barrett St. to be 25 ft., and that at Ontario St. to be increased 5 ft.

15207. Oct. 26.—Authorizing G.T.R. to build bridges at mileage 13.07 from Montreal, St. Jacques River; at mileage 36.85, English River, and at mileage 43.82, Chateauguay River, Que.

15208. Oct. 26.—Authorizing G.T.R. to build interchange track with Chatham, Wallaceburg and Lake Erie Ry., in Chatham, Ont.

15209. Oct. 26.—Authorizing C.N.R. to cross with its Prince Albert-Battleford line highway between sec. 1, tp. 43, and sec. 35, tp. 42, r. 13, w. 3 m.

15210, 15211. Oct. 26, 28. — Authorizing C.N.O.R. to divert Bay St. to join Foster Ave. north of its right of way, Belleville, and authorizing it to open for freight traffic its line from Trenton to Belleville, 15.5 miles.

15212. Oct. 26.—Extending for six months from Nov. 1, time for filing revised Standard Tariffs of Maximum Freight Tolls by Esquimalt and Nanaimo Ry.

15213. Oct. 2.—Authorizing Essex Terminal Ry. to open for traffic its line in Walkerville to a point just east of Giles Ave., between Windsor Ave. and Macdougall St., Windsor, Ont.

15214, 15215. Oct. 27.—Approving revised location of C.N.O.R. (Toronto-Ottawa) at Perth Road, Loughborough tp., mileage 170.35 to 171.40 from Toronto, and authorizing it to cross public road between lots 3 and 4, con. 15, Bedford tp.

15216. Oct. 27.—Authorizing C.N.R. to cross with its Prince Albert-Battleford line. public road between sec. 32, tp. 42, and sec. 4, tp. 43, r. 13, w. 3 m., Sask.

15217. Oct. 26.—Ordering T.H. and B.R. to install new diamond at crossing on South Market St., Brantford, Ont., question of cost reserved for consideration at Board's next sittings in Toronto.

15218. Oct. 27.—Authorizing G.T.P. Branch Lines Co. to cross with its Biggar-Calgary branch five highways in Saskatchewan.

15219. Oct. 26.—Authorizing C.P.R. to operate trains under Queen St. bridge, Toronto, on condition that men shall not be allowed on top of cars when passing.

15220. Oct. 20.—Authorizing C.P.R. to build spur for city of Regina and Sawyer-Massey Co., Regina, Sask.

15221. Oct. 27.—Approving plan of proposed interlocking appliances to be installed at Pages, Ont., by C.P.R., where it crosses G.T.R., mileage 37.2.

15222. Oct. 26.—Relieving M.C.R. from further protection of highway crossing just north of Stamford, Ont., and removing speed limitation of 10 miles an hour.

15223. Oct. 27.—Approving C.N.R. revised location through south ½ sec. 1, tp. 11, r. 5, w. 3 m., mileage 77.28 to 78.288, Sask.

15224. Oct. 31.—Approving location of C.P.R. station at Kipp, Alta.

15225, 15226. Oct. 31.—Authorizing C.P.R. to rebuild bridges 3.7 and 3.9 on its Swift Current subdivision, Sask.

15227. Oct. 31.—Approving location of C.P.R. Boissevain to Lauder branch from sec. 22, tp. 3, r. 20, w. p.m. near Boissevain, on its Napinka subdivision, northwesterly for 35.29 miles to sec. 17, tp. 5, r. 24, w. p.m., on its Estevan subdivision, near Lauder, Man.

15228. Oct. 28.—Authorizing C.P.R. to build two spurs for Royal Collieries, Ltd., at Royal View, near Lethbridge, Alta.

15229 to 15231. Oct. 19, 28.—Authorizing C.N.O.R. to cross public road in South Elmsley and Storrington tps., and to cross and divert public road between lots 10 and 11, Cote St. Jean concession, St. Benoit parish, Que.

15232. Oct. 31.—Authorizing Niagara, St. Catharines and Toronto Ry. to open for traffic its revised lines across ponds 1, 2, and 3, opposite locks 12, 13 and 14, old Welland canal, Merritton, Ont.

15233. Oct. 24.—Enjoining Bell Telephone Co. from removing telephones from Union Stock Yards, Toronto, until further order.

15234. Oct. 21.—Authorizing G.T.P. Branch Lines Co. to cross and divert highways on its Prince Albert branch, Sask.

15235. Oct. 27.—Authorizing G.T.P.R. to build its main line across four highways in Manitoba.

15236. Oct. 27.—Approving Montreal and Southern Counties Ry. freight tariff applying between Montreal and Longueuil.

15237. Oct. 24.—Dismissing application of [illegible]. Bowman, Elmwood, Ont., re Bell Telephone connection.

15238. Oct. 11.—Authorizing T.H. and B.R. to build spur west of Sherman Ave. north, Hamilton, Ont.

15239, 15240. Oct. 11.—Authorizing city of Hamilton, Ont., to build Cumberland Ave. across T.H. and B.R. at grade, and to lay sewer under it on Main St.

15241. Oct. 11.—Ordering city of Hamilton, Ont., to build Birch Ave. extension from present terminus to Gilkinson St., and to fill in to a grade level portions of Sherman Inlet, for transfer of tracks to be relocated by T.H. and B.R., etc.

15242. Oct. 28.—Approving Quebec Ry., Light and Power Co.'s Standard Tariff of Maximum Passenger Tolls between Quebec and Montmorency Falls Park and intermediate points via Beauport Jct.

15243. Oct. 23.—Dismissing application of M. Doyle Fish Co., Toronto, re carload rate for fish from Vancouver to Toronto.

15244. Oct. 23.—Dismissing application to eliminate sec. D of Classification C.R.C. 2 (Express) by increasing weight to be carried from 5 lbs. to any weight shippers might choose to forward as under former section.

15245. Oct. 23.—Amending order 13381, Mar. 21, removing clause 3 and substituting "Charges must be prepaid unless an agreement has been made with the owner of empties whereby they may be returned with charges to collect," and dismissing application to rescind clause 4.

15246. Oct. 13.—Authorizing G.T.R. to build spur for Imperial Varnish and Color Co., A. R. Clarke and Co., and Canada Paint Co. near Leslie St., Toronto.

15247. Oct. 11.—Approving G.T.R. plans of overhead bridge carrying James St. and Hamilton St. Ry., Hamilton, Ont.

15248. Oct. 31.—Ordering G.T.R. to provide farm crossing at Alexandria, Ont., according to order 15107, Oct. 20, within 30 days.

15249. Oct. 21.—Relieving M.C.R. from further protection of crossing, one mile east of Shedden, Ont.

15250. Oct. 11.—Adding Hamilton, Grimsby and Beamsville Electric Ry. to G.T.R. application re protection of crossing just east of Grimsby Beach, Ont.

15251. Sept. 14.—Ordering C.P.R. to make Moosomin, Sask., a flag stop for through train no. 2.

15252. Sept. 11.—Dismissing application of Ribstone, Alta., farmers for order directing G.T.P.R. to install siding accommodation for two elevators.

15253. Oct. 31.—Authorizing V.V. and E.R. to build spur to B.C. Cement Co.'s works, Princeton, B.C.

15254. Oct. 11.—Authorizing G.T.R. to build spur into Waterous engine works, Brantford, Ont.

15255. Oct. 11.—Authorizing T.H. and B.R. to operate across G.T.R. on Newport St., Brantford, Ont.

15256. Oct. 12.—Authorizing G.T.R. to rearrange team tracks across Norwich St., Guelph, Ont., protection to be considered later.

15257. Oct. 31.—Authorizing Alberta Central Ry. to cross highways between Red Deer and 40 miles west.

15258. Nov. 2.—Authorizing C.P.R. to open for traffic its Moose Jaw northwesterly branch from mileage 221.28 to 128.21, between Kerrobert and Conquest, Sask.

15259 to 15261. Nov. 2.—Authorizing C.P.R. to build its Moose Jaw southwesterly branch across six highways, its Weyburn-

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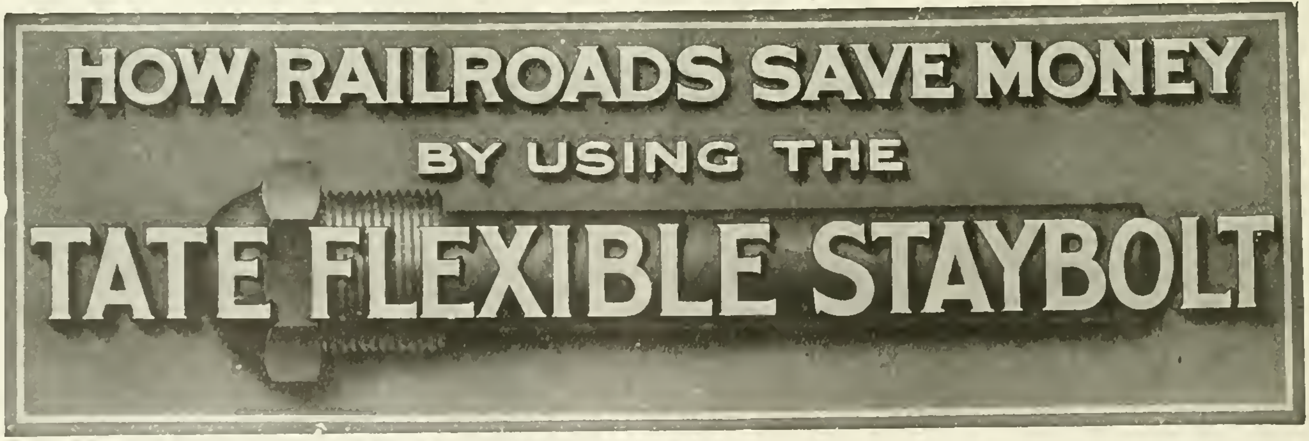

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15262. Nov. 2.—Authorizing C.P.R. to open for traffic its Swift Current northwesterly branch.

15263. Nov. 2.—Authorizing Dominion Atlantic Ry. to rebuild bridge over Little Joggins River, N.S.

15264. Nov. 2.—Ordering C.P.R. within seven months to install improved type of electric bell at crossing just south of Flesherton station, Ont.

15265. Nov. 2.—Authorizing city of Winnipeg to extend Inkster Ave. across C.P.R. Winnipeg Beach line.

15266, 15267. Oct. 31, Nov. 2.—Authorizing C.P.R. to build spurs for Metals, Ltd., Calgary, and Castor Coal Co., Castor, Alta.

15268. Oct. 23.—Adding Canadian Manufacturers Association, Montreal, Toronto, Winnipeg, Saskatoon, Calgary, Regina, Edmonton, Nelson and Vancouver Boards of Trade to application of Eureka Planter Co., Woodstock, Ont., re classification on agricultural implements west of Port Arthur, as compared with shipments east of Port Arthur.

15269. Nov. 2.—Approving Pere Marquette Rd. bylaw authorizing G. C. Conn, F.T.M., and H. F. Moeller, G.P.A., to prepare and issue tariffs of tolls.

15270. Nov. 3.—Ordering G.T.R. within two months to erect gates at John St., Toronto.

15271. Oct. 31.—Approving location of C.N.O.R. station grounds at Lombardy, South Elmsley tp.

15272. Nov. 2.—Ordering C.N.R. to fence its right of way from McCreary Jct., on main line from mileage 139 to 143, from crossing west of mileage 144 to 15 poles west of mileage 145, and from crossing west of mileage 147 to Laurier, mileage 148.6, to be completed by July, 1912, under penalty of $25 a day.

15273. Sept. 14.—Ordering C.P.R. to build sidewalk across its main line by June 15, 1912, to Belle Plaine station, Sask.

15274. Nov. 3.—Authorizing E. A. Murphy to prepare and issue tariffs of tolls for Klondyke Mines Ry.

15275. Nov. 2.—Authorizing C.P.R. to take for construction of proposed roundhouse, machine shops and tracks for extension of yards at certain lands at West Toronto, Ont.

15276. Nov. 4.—Authorizing C.N.O.R. to open for freight traffic its Sudbury-Port Arthur line from Gowganda Jct., at mileage 315, to one mile west of Ruel station, mileage 329, 14 miles.

15277. Oct. 31.—Authorizing C.P.R. to cross with its Weyburn-Lethbridge branch 15 highways, mileage 66.64 to 78.22.

15278. Nov. 3.—Approving revised location of G.T.R. crossover switch on Edward St., Berlin, Ont.

15279. Nov. 3.—Authorizing C.P.R. to open for traffic its Regina, Saskatoon and North Saskatchewan branch from mileage 0 to 83.00, between Regina and Imperial, Sask.

15280. Sept. 11.—Authorizing C.N.R. to build branch through block 4, of Hudson's Bay Co.'s reserve, Edmonton, Alta., crossing Mackenzie, Peace and Athabasca Aves.

15281. Nov. 3.—Approving G.T.R. amended plan showing 50 ft. span over Front St., St. Lambert, Que.

15282. Oct. 12.—Ordering E. and B. Baxter to notify Board, within two months, as to plan desired re G.T.R. spur to stone quarry.

15283. Nov. 7.—Authorizing G.T.P.R. to build spur for Great West Coal Co. in s.e. ¼ sec. 17, tp. 53, to s. ½ sec. 6, tp. 53, r. 23, w. 4 m., mileage 0 to 2.3.

15284, 15285. Nov. 7.—Authorizing C.P.R. to open for traffic its Bulyea South branch from mileage 0 to 18.31, between Bulyea and a junction with the Regina, Saskatoon and North Saskatchewan branch at mileage 24.38, and that portion of its Brandon subdivision between Carberry and Douglas, Man., 16 miles.

15286. Mar. 15.—Fixing rates on binder twine from Welland, Ont., to be charged by G.T.R., M.C.R. and Wabash Rd.

15287. Sept. 1.—Naming express delivery and collection limits for Nanaimo, B.C.

15288. Nov. 8.—Ordering express companies under Board's jurisdiction, pending disposition of question of joint tariffs, to make certain charges on shipments of express freight subject to graduate charges. This order is given in full on another page under heading of Among the Express Companies.

15289. Sept. 22.—Approving location of Campbellford, Lake Ontario and Western Ry. (C.P.R.) Cobourg to Glen Tay line from mileage 0 to westerly limit of Belleville, across city, at mileage 2.3.

15290. Nov. 7.—Approving location of G.T.R. station at Brule, Ont.

15291. Oct. 31.—Authorizing G.T.P. Branch Lines Co. to cross with its Melville-Regina branch five highways in Saskatchewan.

15292. Nov. 9.—Approving Kingston and Pembroke Ry. bylaw authorizing W. R. Baker, V.P. and G.M., and F. Conway, G.F. and P.A., to prepare and issue tariffs of tolls.

15293. Nov. 7.—Authorizing G.T.R. to build spur for J. R. Booth, west of Whitney station, Ont.

15294. Nov. 7.—Authorizing T.H. and B.R. to operate spur jointly with G.T.R. into lands of L. C. Gage and Grasselli Chemical Co., Hamilton, Ont.

15295. Nov. 9.—Ordering C.P.R. within 90 days to install improved type of electric bell at crossing 2½ miles east of St. Basile, Que., 20% to be paid from railway grade crossing fund.

15296. Nov. 9.—Authorizing C.P.R. to build spur for J. B. Bonhomme and Co. and Wm. Rutherford and Sons Co., Montreal.

15297. Nov. 9.—Authorizing C.P.R. to appeal to Supreme Court re application of British American Oil Co., concerning rates on crude oil from Stoy, Ill., to Toronto, Ont., on a question of law.

15298, 15299.—Nov. 8.—Authorizing city of Toronto to maintin relay telephone and 2,200 volt line in connection with its hydro-electric system across C.P.R. and G.T.R., and across C.P.R. and G.N.W. Telegraph Co.'s wires at Strachan Ave., and rescinding order 14918, Oct. 3.

15300. Nov. 10.—Authorizing C.N.O.R. to open for traffic its Sudbury-Port Arthur line from Gowganda Jct. at mileage 315, to 1 mile west of Ruel station, mileage 329, 14 miles, and rescinding order 15276, Nov. 4.

15301. Sept. 14.—Ordering G.T.P.R. to grant to E. A. Purcell equal privileges with any other cab or hack drivers or transportation agency at Saskatoon station, for receiving and delivery of traffic to platforms, and restraining it from discriminating in favor of Saskatoon Forwarding Co.

15302. Nov. 7.—Rescinding order 14120, June 30, in so far as it authorizes erection of G.T.P.R. station at Cana, Sask.

15303. Nov. 7.—Authorizing G.T.P.R. to cross two highways in secs. 17 and 5, tp. 53, r. 23, w. 4 m.

15304. Nov. 11.—Authorizing C.P.R. to open for traffic its double track from Smiths Falls to Glen Tay, Ont., 16 miles.

15305. Nov. 9.—Approving C.N.R. plans for crossing one mile south of Camrose, Alta.

15306. Nov. 10.—Authorizing C.N.R. to build spur for J. Harty and L. J. Marsh, Fort Frances, Ont.

15307. Nov. 10.—Ordering C.P.R. to carry out terms of order 14765, Sept. 11, re extension of crossing at Henderson St., Grayson, Sask., within 20 days, subject to a penalty of $25 each day in default.

15308. Nov. 10.—Authorizing city of Calgary, Alta., to cross with its municipal street railway the C.P.R. at Eleventh St., half-interlocking plant to be installed.

15309. Nov. 9.—Authorizing C.P.R. and G.T.R. to appeal to Supreme Court re application of Canadian Oil Co. on question of law.

15310. Nov. 10.—Authorizing C.P.R. to build bridge 9.6 on its Swift Current subdivision, Sask.

15311. Nov. 10.—Authorizing C.P.R. to cross C.N.R. with its second track near corner of Sixth Ave. and Algoma St., Port Arthur.

15312. Nov. 10.—Authorizing C.P.R. to cross G.T.P.R. with its Wilkie-Anglia branch, at mileage 6.1, Sask., interlocker to be installed.

15313. Nov. 9.—Authorizing C.P.R. to operate passing track across road allowance, and approving location of station building at Woods, Man.

15314. Nov. 9.—Authorizing C.P.R. to rebuild bridge 8.4 on its Swift Current subdivision. Sask.

15315. Nov. 9.—Approving slight deviation in C.P.R. main line at mileage 95.16, near Graham station, Ont.

15316. Nov. 10.—Authorizing G.T.P.R. to divert road at mileage 113, Winnipeg district, Man.

15317, 15318. Nov. 10.—Authorizing G.T.R. to build spurs for National Land, Fruit and Packing Co., Mimico, and Robson and Precious, Hamilton, Ont.

15319 to 15322. Nov. 10.—Authorizing C.P.R. to cross 17 highways and diversions with its Moose Jaw Southwesterly branch; 18 highways with its Swift Current Southeasterly branch; highway and diversion with its Moose Jaw Southwesterly branch, and highway with its Moose Jaw Northwesterly branch at mileage 167.93, Sask.

15323. Nov. 10.—Authorizing South Ontario Pacific Ry. (C.P.R.) to divert road between East Flamboro and West Flamboro tps. at mileage 14.43.

15324. Nov. 10.—Approving revised location of C.N.O.R. Sudbury-Port Arthur line, mileage 182.03 to 183.78 from Sudbury Jct.

15325. Nov. 10.—Amending order 15247, Oct. 11, re G.T.R. bridge carrying James St. and street railway, Hamilton, Ont., by striking out last part of order beginning with words "Subject to," in 7th line.

15326. Nov. 10.—Ordering C.N.R. within 30 days, under penalty of $25 in default, to remove stones from W. J. Elliott's land, Makaroff, Man.

15327. Nov. 10.—Authorizing British Columbia Public Works Department to build highway crossing over Shuswap and Okanagan Ry. at Okanagan Landing.

15328. Nov. 10.—Authorizing G.T.R. to operate trains under Queen St. bridge, Toronto until viaduct plans are finally settled, men not to be allowed on top of cars.

15329. Nov. 11.—Relieving Quebec Ry., Light and Power Co. from further protection of crossing at Limoilou, Que.

15330, 15331. Nov. 11.—Authorizing C.N.O.R. to build bridge on its Sudbury-Port Arthur line over Mackenzie River, mileage 14.67 from Port Arthur, and over Coldwater Creek, mileage 49 east of Port Arthur.

15332. Sept. 12.—Dismissing application of Interprovincial Coal Co., Strathcona, Alta., re rates on coal from Clover Bar to Strathcona, over G.T.P.R., C.P.R. and C.N.R.

15333. Nov. 11.—Authorizing Sarnia Gas and Electric Co. to maintain intake pipe under G.T.R., Sarnia, Ont.

15334. Nov. 10.—Ordering Bell Telephone Co. to install telephone for W. Ellins, on Scarboro Rd., outside of Toronto Jct., within 30 days.

15335. Sept. 15.—Dismissing application of Continental Oil Co., Prairie Oil Co. and Winnipeg Oil Co. for order requiring railways to reduce commodity rates on oil, coal fuel, gas, petroleum, etc., from points in western United States to Winnipeg, Calgary, Regina and Saskatoon.

15336. Nov. 10.—Amending order 14961, Oct. 4, re highway crossings by C.P.R. Manitou Lake Branch, Manitoba, by striking out crossing 6.

15337. Oct. 12.—Authorizing G.T.R. to rearrange existing team tracks across Norwich St., Guelph, Ont., question of protection to be provided at Elora Rd. and Norwich St. to be considered later, and rescinding order 15256.

15338, 15339. Nov. 13.—Authorizing Kettle Valley Ry. to build trestle over Voght Creek and at station 1523, Coldwater Division, south of Merritt, B.C.

15340. Nov. 13.—Authorizing Alberta Central Ry. to cross highways and road diversion between mileage 40 and 64.5, west of Red Deer.

15341. Nov. 11.—Authorizing C.N.R. to cross eight highways with its Maryfield line, Sask.

15342, 15343. Nov. 11.—Approving C.N.O.R. revised location, mileage 68.7 to 76.5, and 70 to 80.8 from Sudbury Jct.

15344. Oct. 31.—Approving plans of C.N.R. standard pile and frame trestles for eastern lines.

15345. Nov. 11.—Authorizing C.N.O.R. to build bridge on its Sudbury-Port Arthur line over Pearl River, mileage 36.04 east of Port Arthur.

15346. Nov. 11.—Authorizing C.N.R. to build spur to Hudson's Bay Co.'s warehouse, south of Union station, Winnipeg.

15347. Nov. 13.—Amending order 12818, Jan. 26, re C.N.O.R. providing crossing without diverting highway in lot 3, con. 2, Gloucester tp.

15348. Nov. 10.—Authorizing G.T.R. to rebuild bridge 83, at mileage 93.50, District 9, Northern Division.

15349, 15350. Nov. 11, 13. — Authorizing C.P.R. to build spurs for E. G. Hazell, at mileage 99.3, on its Crowsnest subdivision, and for A. T. and W. J. Stephenson, at Red Deer, Alta.

15351, 15352. Nov. 11.—Approving location of Esquimalt and Nanaimo Ry. branch line from Comox, via Cumberland to Alberni, for 11.1 miles, to Great Central Lake, on Vancouver Island, and authorizing it to cross and divert nine highways.

15353. Nov. 13.—Approving location of G.T.P. Branch Lines Co. station at Irricana, on its Tofield-Calgary branch, Alta.

15354. Nov. 11.—Authorizing C.N.O.R. to cross eight highways in Medora tp., Ont.

15355. Nov. 13.—Ordering Atlantic, Quebec and Western Ry. to build farm crossing for J. A. Chedore, Gascon, Que.

15356, 15357. Nov. 13.—Authorizing Kettle Valley Ry. to build pile trestles at stations 1517 and 1468.

15358. Nov. 10.—Authorizing Midland Ry. of Manitoba (G.N.R.) to use crossing over G.T.P.R., St. Boniface parish, for construction purposes only.

15359. Aug. 10.—Naming express collection and delivery limits for Kenora, Ont.

15360. Nov. 13.—Authorizing C.P.R. to cross seven streets, avenues and lanes in Strathcona, Alta.

15361. Nov. 13. — Authorizing Norfolk

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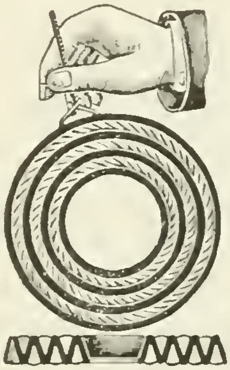

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with Asbestos Lining No. 2—is for flanged joints. It makes such joints tight when nothing else will—it makes them permanently tight and one in a joint is enough.

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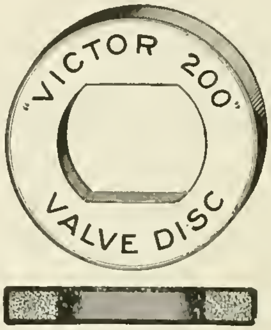

is for valves of Jenkins or similar types.

These Discs not only ensure longer life to *new* valves, but enable you to renew the life and usefulness of many an old valve—and besides they save a lot of time in renewals.

Being made of copper and asbestos they have just enough "give" to make an absolutely tight joint, without going to pieces like rubber or composition discs.

If you haven't received a copy of our Catalogue listing these Gaskets and Discs, we shall gladly send you one.

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The Hall Signal Company manufactures exclusively automatic signal apparatus, and its reputation is based on the quality of the apparatus produced. The Company is prepared to furnish plans and estimates for signaling any section of track, however simple or complicated, and takes this opportunity to offer the services of its engineers to the Railroads of Canada.

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County Telephone Co. to erect wires across M.C.R. at Main St., Waterford, Ont.

15362. Nov. 13.—Ordering Temiscouata Ry. to restore watercourse to original source or compensate J. A. Nadeau, Caron Brook, N.B., for damage to land.

15363. Nov. 7.—Rescinding order 14943, Oct. 6, re G.T.R. spur to St. Mary's Portland Cement Co.'s premises, Blanshard tp., Ont., and including Cement Co. as party to application.

15364. Nov. 13.—Authorizing C.P.R. to use bridges at mileages 61.64 and 63.33, Lac Du Bonnet subdivision, Man.

15365. Nov. 13.—Authorizing Niagara, St. Catharines and Toronto Ry. to build bridge over Welland canal feeder in lot 27, con. 6 and 7, Crowland tp., Ont.

15366. Nov. 14.—Authorizing G.T.P.R. to build spur for Hardstone Bros., St. Boniface parish, Man.

15367. Nov. 7.—Authorizing C.P.R. to build second track on west side of main line between Highlands, Que., and south switch, to cross Upper Lachine Road, G.T.R. main line, and G.T.R. old main line, by bridges, and to move station at Highlands 350 ft. south.

15368. Nov. 14.—Relieving C.P.R. from further protection of crossing at west end of Dorval station, Que.

15369. Nov. 14.—Rescinding order 11663, Sept. 15, 1910, re crossing Main St., Glencoe, Ont., G.T.R. to operate gates there day and night.

15370. Nov. 13.—Authorizing Algoma Central and Hudson Bay Ry. to cross under C.P.R. with its Bruce St. extension, Sault Ste. Marie, Ont.

15371. Nov. 14.—Approving C.N.R. revised location through tps. 26-25, r. 23-25, w. 4 m., Alta., from mileage 211.62 (old location) to 224.91 (revised location).

15372. Nov. 13.—Authorizing C.N.Q.R. to cross Montreal St. Ry. at Ontario St., additions to be made to interlocking plant.

15373. Oct. 11.—Approving plans of subway to be built by city of Hamilton, Ont., under G.T.R., near Sherman Inlet, subject to G.T.R. approval of plans.

15374. Nov. 14.—Authorizing Montreal and Southern Counties Ry. Express Department to use certain form of merchandise receipt. This order is given in full on another page, under "Among the Express Companies."

15375. Oct. 27.—Authorizing G.T.P.R. to cross and divert highway in s.w. ¼ sec. 23, tp. 14, r. 27, w. p.m., Man.

15376. Nov. 14.—Approving location of G.T.P. Branch Lines Co. station at Edgeley, Sask.

15377. Nov. 7.—Ordering G.T.R. to erect gates by May 1, 1912, at crossing 300 yds. west of Cornwall station, Ont., 20% from railway grade crossing fund, 20% by Cornwall tp., 25% by town of Cornwall, 55% by company; pending completion, crossings to be protected by day and night watchmen.

15378. Nov. 7.—Adding Government Railways Managing Board as party to proceedings, without prejudice to any contention it may wish to advance, in connection with doing away with level crossings in Montreal.

15379. Nov. 14.—Authorizing C.N.R. to build bridge over Fairford River, Fairford Settlement, Man.

15380. Nov. 13.—Authorizing C.N.R. to open for traffic its Moose Jaw extension from Radville to end of track, 83 miles, and rescinding order 15056.

15381. Nov. 15.—Rescinding orders 13971 and 14536 re C.P.R. bridge in Ops tp., Ont.

15382. Nov. 14.—Authorizing C.N.R. to cross with its Vegreville-Calgary branch the C.P.R. Didsbury-Kininvie branch in s.e. and s.w. ¼ sec. 28, tp. 25, r. 24, w. 4 m., Alta., interlocking plant to be installed.

15383. Nov. 14.—Authorizing G.T.P. Branch Lines Co. to cross highways on its Calgary branch at mileage 98.4 and 98.7, Alta.

15384. Nov. 14.—Ordering G.T.P. to operate gates day and night at John St., Aylmer, Ont.

15385. Nov. 15.—Authorizing Moose Jaw Electric Ry. to cross C.P.R. spur at Seventh Ave., Moose Jaw, Sask.

15386. Nov. 14.—Amending order 15286, Mar. 15, 1910, re rates on binder twine, by adding words "Plymouth Cordage Co." before "Welland," etc.

15387. Nov. 15.—Ordering that crossing of Norfolk St., Simcoe, Ont., by G.T.R., be protected by watchman between 7 a.m. and 7 p.m. daily.

15388. Nov. 16.—Approving location of G.T.P. Branch Lines Co. station at Cudworth, Sask.

15389. Nov. 14.—Authorizing C.P.R. to extend spur into Martin Senour Co.'s premises, St. Boniface, Man.

Great Northern Railway Lines in Canada.

In the annual report for the year ended June 30, the following references are made to construction on lines owned and controlled by the company in Canada and to those approaching the International boundary:

The expenditure on construction of new lines and purchase of property charged to cost of road amounted to $2,407,367, but it is not shown how much of this was expended in Canada. Of the lines under construction tracklaying has been started on the line from Stanley to Wildrose, N.D., and the work is expected to be completed by the end of the year. This branch will be 51 miles, its present terminus being on the North Dakota-Montana boundary, about 25 miles south of the International boundary. The branch line from Bainville to Plentywood, Mont., 53.19 miles, has been in operation since March. Plentywood is about 20 miles south of the International boundary. Grading has been completed from Oroville, on the Washington section of what is in British Columbia, the Vancouver, Victoria and Eastern Ry., southerly to Pateros, 70 miles. Work has been continued during the year on the V.V. and E.R. and N. Co.'s lines. On the line between Princeton and Tulameen, B.C., the grade has been completed for 14 miles and track will be laid this fall from Princeton to Coalmount. (Since the date of the report this track has been laid). About 14 miles of grading is being proceeded with between Abbotsford and Chilliwack, at the east end of the line. There has been added during the year 1.02 miles of side tracks on the Canadian lines. The work of reducing the line grade at Vancouver, mentioned in previous reports, has been completed, the grade having been reduced from a maximum of 2.54 to 1% for 8,200 ft. A portion of the material removed has been used in filling in a part of the bed of False Creek and so enlarging the company's terminal property in Vancouver. Particulars of the cost of lines in Canada, etc., are given on another page under "Great Northern Ry. Co.'s Annual Report."

The following is our own compilation of current construction news:

Fort William, Ont.—A party of engineers, said to be in the G.N.R. employ, has been at work for some time west of Fort William, and was at the beginning of Nov. working in Blake tp.

The city council had under discussion Oct. 26, the question of building a bridge across Mission River in the vicinity of Island No. 2. In the course of the discussion, Alderman Hamilton stated that if the bridge did not materialize it might result in the acquisition of the island by another railway company. In a subsequent interview, he declined to say anything further about the matter.

Midland Great Northern Ry.—Midland Ry. of Manitoba.—The Board of Railway Commissioners has authorized the M.R. of M. to connect with the Canadian Northern Ry., and to cross the Grand Trunk Pacific Ry. in parish lot 55, St. Boniface, Man., the interlocking plant there to be enlarged.

Grading for the line from Oak Point Jct. to the freight yards on Isabel St., Winnipeg, has been completed, and the laying of the track and the finishing of the line is expected to be completed early in Dec. The steelwork for the viaducts crossing several streets is practically finished. The freight yard has been laid out, and the building of the freight shed is well forward. This building is 600 by 50 ft. At Oak Point Jct. are located a four-stall locomotive house, section foreman's house, yard office, coaling platform and some other small buildings. The contractor for the building of the line was A. Guthrie, St. Paul, Minn., and the buildings are being put up by the J. McDiarmid Co., Winnipeg.

A number of G.N.R. traffic officers were in Winnipeg, Nov. 10, inspecting the work in progress. W. P. Kenny, General Traffic Manager, is reported as stating that the company would be running its own freight trains into Winnipeg, over its own line, and into its own terminals by Jan. 1, 1912.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—Tracklaying is reported to have been completed as far as the fourth crossing of the Tulameen River, B.C. From near this point a branch line has been surveyed to Ashnola, where the B.C. Copper Co. is carrying on operations, and it is reported that the line will be built at an early date. Plans of the revised location of the line from Hope to the western boundary of Yale district, 24.17 miles, have been approved by the Board of Railway Commissioners.

The company is acquiring some additional lands in the vicinity of False Creek, Vancouver, in connection with its development there, and arbitration proceedings in connection therewith are in progress. A start has been made in laying out the site south of False Creek, where the freight yards are to be situated. For this four tracks are being laid east, and two west, from Main St. The piling and filling in of the area to be levelled up is in progress. The filling is being done from the head of False Creek westward to where the union station will be located at the foot of Park Lane. The material for this filling in is being brought from Sapperton, about 13 miles, and additional material will be secured when the present cut through Grandview is deepened, as projected.

The Board of Railway Commissioners has authorized the company to build a dock and warehouse on Burrard Inlet. (Nov., pg. 1053.)

A Railway to Hudson Bay.

In a recent interview J. D. McArthur, of J. D. McArthur & Co., who have the contract for building the first section of 143 miles of the projected Dominion Government railway to Hudson Bay, stated that all preliminary work was well started and would be continued. The starting point of construction will be the north bank of the Saskatchewan River at Pas Mission, at which point the supply camp has been located and where has been concentrated the construction plant, and the necessary supplies for distribution along the route, as soon as construction gangs go in. It is intended to establish camps and distribute supplies during the winter. Construction will be proceeded with at several points, particularly where there is any rock work. The greater part of the work is light. It is anticipated that the grading for the 143 miles from Pas Mission to Split Lake will be completed by the end of 1912.

The construction of the bridge across the Saskatchewan River at Pas Mission is reported to be well advanced and it is expected to be completed during 1912. (Nov., pg. 1053.)

John A. Tait, District Freight Agent, Canadian Northern Ry., Regina, Sask., writes:—"I enclose money order to pay my subscription, which is just expiring, to your valuable publication, The Railway and Marine World, and also another year's subscription in advance. It is needless to say that I enjoy reading the many interesting and instructive matters contained in your paper from month to month."

Mrs. G. C. Royce, wife of Major Royce, Manager of the Toronto Suburban Ry., has been elected a member of the executive of the Toronto Women's Rifle Club.

110,600 Pounds Tensile Strength in Vanadium Steel Castings

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Certain parts cannot be forged without prohibitive waste and expense. Vanadium Crucible Steel Castings have the qualities of Carbon Steel Forgings and are easily made at a comparatively low cost.

Vanadium Crucible Steel Castings are now being used in sizes up to 200 pounds weight.

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CANADIAN NORTHERN

TORONTO AND TRENTON NEW LINE--NOW OPEN

Effective Monday, Oct. 9, 1911

CONDENSED TIME TABLE

Eastbound—Read down.			Westbound—Read up.	
No. 10	No. 8		No. 7	No. 9
P.M.	A.M.	STATIONS.	P.M.	P.M.
6.30	9.30	.. TORONTO ..	1.00	9.30
9.00	12.00	.... Port Hope	10.30	7.00
9.15	12.15	..... Cobourg	10.15	6.45
9.43	12.43	..... Colborne	9.47	6.17
10.00	1.00	..... Brighton	9.30	6.00
10.20	1.20	.... TRENTON	9.10	5.40
P.M.	P.M.		A.M.	P.M.

For Time at Intermediate Points, See Time Tables

Trains run daily, Sunday excepted. Solid, Wide, Vestibuled Trains.

Dining Car Service

Toronto to Trenton, on Train No. 8. Trenton to Toronto, on Train No. 9.

Parlor Cars On All Trains

Trains run from and to Union Station, Toronto. Union Station with Central Ontario Railway is located in centre of Town of Trenton. All Central Ontario Railway Trains make close connections at Trenton Union Station with above trains.

GEO. H. SHAW,
General Traffic Manager,
Toronto, Ont.

R. L. FAIRBAIRN,
Asst. Genl. Pass. Agent,
Toronto, Ont.

THE ROYAL LINE

MONTREAL-QUEBEC TO BRISTOL
(Summer Service)

HALIFAX TO BRISTOL
(Winter Service)

ROYAL GEORGE AND ROYAL EDWARD

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GEO. H. SHAW,
Gen. Traffic Manager,
Toronto, Ont.

WM. PHILLIPS,
Gen. Freight and Pass. Agent,
Toronto, Ont.

Canadian Pacific Railway Construction, Betterments, Etc.

St. John, N.B.—The filling up of the old lumber pond at the head of St. John harbor has been completed, and work was started, Nov. 9, on the erection of a warehouse on the site reclaimed. The building will be 400 by 40 ft.

Aroostook Jct.—The Board of Railway Commissioners is being asked for authority to take possession of certain lands at Aroostook Jct., N.B., for additional tracks.

Quebec Station, etc.—The mayor, in an interview Nov. 4, stated that on the recent visit of D. McNicoll, Vice President, C.P.R., to the city, he said that the company was desirous of facilitating communication between the wharves and the railway yards, and showed plans which it had under consideration for the extension of its facilities there. They showed yards at St. Malo, where property has been acquired, with tracks along the St. Charles River to near the General Hospital, where they would be connected with the existing line into the city. Other property would be acquired, and a new station would be built. When details have been worked out the plans would be submitted to the city for approval.

Western Junction, Montreal.—Considerable progress has been made towards the completion of the new yards. The object in building this terminal yard was to relieve the Outremont yard, where practically all the through freight is now sorted. Western Junction will be the make-up point for all southbound trains. A 24-stall roundhouse is under construction. The yard is to be a plain poling one, and the present small capacity is being augmented by the addition of eight new tracks with necessary roundhouse tracks, ashpits, etc. These new sidings are of sufficient length to handle 85 car trains. As a part of the improvement scheme at this place, it is reported a boarding house for the men may be erected. The work now being carried out only represents about a third of the scheme mapped out for the future.

Ottawa Entrance, etc.—The matter of the entrance of the railway into the city, which has been under consideration for some time, was down for hearing before the Board of Railway Commissioners Nov. 7, but was postponed. The plans showing what it is proposed to do are, it is said, being prepared at Montreal under the direction of N. Cauchon, consulting engineer, but it was found impossible to complete them before Nov. 7.

D. McNicol, Vice President, had an interview with representatives of the city council Oct. 24, when he stated that the objections made to the tunnel project would be met by the amended plans which were being prepared, and that as soon as the necessary authority was obtained, work would be started. A new station would also be built on Canal St., to the south of Tupper's Bridge. A local report states that there will be a 0.4% gradient in the tunnel, and that electricity will be used as a motive power.

Montreal-Toronto Second Track.—The Board of Railway Commissioners has authorized the opening for traffic of the second track recently completed from Smiths Falls to Glen Tay, Ont., 16 miles. Glen Tay is the point from which the new line is projected under the charter of the Campbellford, Lake Ontario and Western Ry. to and along the Lake shore to the Montreal-Toronto line between Locust Hill and Leaside Jct.

Location plans have also been approved by the Board for the section from Cobourg to the westerly limit of Belleville, across the city, to mileage 2.3.

Campbellford, Lake Ontario and Western Ry.—The Board of Railway Commissioners has approved location plans from mileage 0, at Glen Tay, on the C.P.R. Montreal-Toronto line, to the western boundary of South Sherbrooke tp., 15.1 miles.

Georgian Bay and Seaboard Ry.—Ballasting the last portion of this line to be completed to Bethany Jct., on the C.P.R. Montreal-Toronto line is being proceeded with rapidly. It is expected that everything will be ready for opening for traffic by Dec. 15. The line extends from Bethany Jct. to Victoria Harbor, Georgian Bay.

West Toronto Yard Extensions, etc.—The application of the C.P.R. as exercising the franchises of the Ontario and Quebec Ry. for the right to expropriate certain lands in West Toronto in connection with its yard extension and other improvements came before the Board of Railway Commissioners at Ottawa, Nov. 14. This application is in addition to the lands authorized, Nov. 2, to be taken for the proposed roundhouse, machine shops, etc.

South Ontario Pacific Ry.—The Board of Railway Commissioners has authorized the connecting of this line from Guelph Jct. to Hamilton, Ont., with the Toronto, Hamilton and Buffalo Ry. at Hamilton, mileage 16.17 from Guelph Jct.

Application is being made for final sanction of a lease of the company's line from Guelph Jct. to Hamilton, now being completed, to the C.P.R. for 999 years from Jan. 1, 1912.

Application is being made to the Dominion Parliament to authorize the building of a railway from Hamilton southerly and easterly to the Niagara River.

Spur Line at Guelph.—An extension of time has been granted by the Board of Railway Commissioners for the building of the spur to the Provincial Reformatory farm, Guelph, Ont.

Entrance to Stratford.—H. W. Killaly, Engineers of Surveys, Montreal, is in charge of the surveys being made to secure a route through Stratford, Ont., for the projected branch of the Guelph and Goderich Ry., from near Millbank, and for the extension of the Tillsonburg, Lake Erie and Pacific Ry., or the St. Marys and Western Ontario Ry., which are to meet there.

London Roundhouse, etc.—Work has been completed on the new roundhouse on Quebec St., and it is expected the coaling plant and watering tank will be completed by Dec. 31. The yard round the new roundhouse is being laid out, but will not be finished until early in the new year.

Bridge at Sault Ste. Marie.—We are advised that designs for a 336 ft. double leaf, single track bridge over the new U.S. ship canal at Sault Ste. Marie, Mich., have been accepted. This bridge will form part of the connection between the C.P.R. at Sault Ste. Marie, Ont., and the Minneapolis, St. Paul and Sault Ste. Marie Ry. at Sault Ste. Marie, Mich.

Port Arthur-Fort William Second Track.—The Board of Railway Commissioners has authorized the opening for traffic of the second track between Port Arthur and Fort William, Ont., 4.2 miles.

Fort William Sidings.—The Fort William city council notified Superintendent Armstrong, Nov. 2, that it could not grant the use of any streets for sidings except on condition that the city could take them over at any time. This and some other questions affecting the interpretation of the agreement with the company were discussed by George Bury, Vice President and General Manager, and the mayor, Nov. 11.

Graham, Ont.—The Board of Railway Commissioners has approved location plans for a slight deviation of the main line near Graham station, Ont., at mileage 95.16.

Winnipeg Terminals.—A press report Nov. 14 states that the company is preparing plans for increasing the accommodation at the Winnipeg terminals. It is stated that new yards will be built outside the city.

Express Building for Winnipeg.—The C.P.R. has started work on a building on Main St., Winnipeg, opposite the station, to be used by the Dominion Express Co. It is to have a frontage of 50 ft., beside the subway, and will extend to King St., 300 ft., where it will have a frontage of 80 ft. The building will be four stories high, over a basement. The contractors are John Gunn and Co., Winnipeg.

Carberry to Douglas.—The Board of Railway Commissioners has authorized the opening for traffic of the portion of the Brandon subdivision between Carberry and Douglas, Man., 16 miles, this being a portion of the second track now under construction between Portage la Prairie and Brandon.

Brandon Yards.—The company is laying out a yard on Rosser Ave., just south of the industrial spur for city freight. Local reports stated Nov. 11 that it is intended to build a new freight shed early in the new year.

Boissevain to Lauder.—The Board of Railway Commissioners has approved location plans for the branch from Boissevain to Lauder, Man., between sec. 22, tp. 3, r. 20, northwesterly to sec. 17, tp. 5, r. 24, west principal meridian.

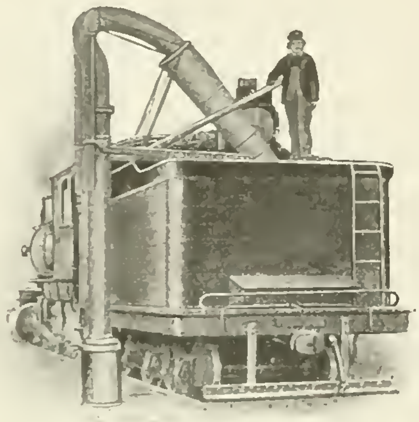
Manitoba and North Western Ry.—Application is being made to the Dominion Parliament to authorize the building of a branch from Theodore westerly to the C.P.R. Pheasant Hills branch between Govan and Lanigan, Sask.

Proposed Extensions of Western Lines.—Application is being made to the Dominion Parliament for power to build the following branch lines: from Hawarden on the Moose Jaw Northwesterly branch, to near Floral or Cheviot, on the Pheasant Hills branch, Sask.; from the Estevan-Forward branch to the Weyburn-Lethbridge branch, Sask.; from Sedgewick, on the Hardisty subdivision, southerly to tp. 39 or 40, range 10, 12 or 13, west 4th meridian, Alta.; from near Wilkie, on the line authorized by sec. 3 (c), chap. 74, statutes of 1907, northwesterly and northerly to the North Saskatchewan River in tps. 51 to 56, ranges one to eight, west 4th meridian, Sask. or Alta.; from near Kipp, on the Crowsnest branch, easterly and northeasterly to tp. 12 or 13, range 12 or 13, west 4th meridian, Alta.; from the authorized terminus of the line from Asquith, authorized by sec. 3 (c), of the C.P.R. Act of 1910, northwesterly to Battleford, Sask.; from Irricana easterly and southeasterly to tp. 20 or 21, ranges 11 to 14, west 4th meridian, Alta.; from Osborne to Cartwright and Boissevain, Man.; from Otterburn to Stuartburn, Man.; from the Icelandic River northerly and northeasterly for 100 miles, and from Killam to near Strathcona, Alta., and also to make the terminus of the line from Lauder westerly near Stoughton, on the Arcola branch.

Second Track Work on Western Lines.—In a recent interview the President, Sir Thomas Shaughnessy, is reported to have stated that the company would have to continue second track construction in the west. We are advised that the second track through from Winnipeg to Brandon, Man., will be fully completed this year, and that when the appropriations are being considered in the near future a decision will be

RAILROAD STANDPIPES

Sheffield-Johnson, the Ideal Combination of Valve and Spout



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IRON AND STEEL WIRE ROPES

reached as to what work will be done next year.

Grading for about 20 miles of second track east and west of Moose Jaw, Sask., between Pasqua and Caron, has been in progress during the past season.

Transfer Track at Balcarres.—The Board of Railway Commissioners has directed the C.P.R. and the Grand Trunk Pacific Ry. to build a transfer track for the interchange of traffic at Balcarres, Sask.

Regina-Colonsay-Bulyea Branch. — The company opened for traffic Nov. 5 its completed line out of Regina, extending via Craven to Colonsay, on the extension of the Manitoba and North Western Ry., from Yorkton into Saskatoon. The total length of the branch, part of which was in operation in 1910, is 133 miles. At Valeport, at the southern end of Lost Mountain Lake, a branch of 19 miles extends to Bulyea, on the Pheasant Hills branch. This branch was also opened for traffic Nov. 5.

Regina Southeasterly.—Local press reports state that arrangements are being made for starting construction early in 1912 on a line from Regina towards the International boundary, near Portal. It is stated that the right of way as far as Griffin, Sask., was purchased a year or so ago, and that right-of-way agents are now working beyond Griffin.

Saskatoon Improvements.—The Saskatoon city council is applying to the Saskatchewan Legislature for confirmation of an agreement with the C.P.R. for the purpose of effecting certain improvements in the city.

Cutknife Branch.—Tracklaying was started Oct. 27, on the branch running northerly from Wilkie, Sask., into the Cutknife district, on which grading has been completed for about 30 miles.

Wilkie-Anglia Branch.—The Board of Railway Commissioners has approved the location of this branch between mileage 7.46 and 24.90. This branch will form another connection between the Pheasant Hills branch and the Manitoba and North Western Ry. extension, which effects a junction at Macklin, Sask.

Asquith to Conquest, Sask.—The branch which it is proposed to build will be practically a straight line of 42 miles, crossing the G.T. Pacific Ry. and the Canadian Northern Ry. Goose Lake branch. It will connect at additional points the extension of the Manitoba and North Western Ry. from Yorkton to the Calgary and Edmonton Ry. Wetaskiwin branch with the Moose Jaw northwesterly branch, which now joins it at Macklin.

Moose Jaw Northwesterly. — The Board of Railway Commissioners has authorized the opening for traffic of the extension of this branch from Kerrobert to Conquest, Sask., 93.07 miles.

Moose Jaw Southwesterly.—The route map has been approved for this projected branch southerly from near the starting point of the Outlook branch to south of Lake Johnston, 35 miles. This is a revised location of the route approved in 1910. The plan then approved showed the line to near the same points, but continuing the Weyburn-Lethbridge line now under construction.

Swift Current Northwesterly. — The Board of Railway Commissioners granted permission Nov. 2 for the operation of a train service over the completed branch line northwesterly from Swift Current, Sask.

Medicine Hat to Shepherd, Alta.—The route plan of a projected line from Medicine Hat to Shepherd is before the Minister of Railways at Ottawa for approval. The projected line runs north of Grassy Lake, crosses the Bow River, west and north through the Sundial country, and then northwesterly by Lake McGregor and Queenstown, crossing the Bow River south of Cheadle, and running into Shepherd, where it will connect with the main line.

Bassano to Irricana.—The Board of Railway Commissioners has approved location plans of a branch from Bassano, on the main line, to the branch from Irricana easterly, 22 miles.

Calgary Hotel.—A contract has been let to P. Lyall and Sons, Montreal, for the erection of a C.P.R. hotel at Calgary, Alta. The contractors were reported, Nov. 14, to be making arrangements for starting on the building, which is to be ready for opening in the spring of 1913. The foundation contract, which was let some months ago, is nearly completed.

Calgary Shops.—A survey party has been at work since Nov. 1 laying out the site of the proposed shops, etc., at Calgary. It is expected that a considerable number will be employed during the winter preparing the foundations, etc.

Strathcona - Edmonton High Level Bridge.—A large quantity of steel for the superstructure of the bridge to connect these two points has been delivered. The contractors have got most of the falsework in place, and expect to get on with the erection at an early date.

Royal Collieries Co.—Permission has been granted by the Board of Railway Commissioners for the building by the C.P.R. of two spurs for the Royal Collieries Co. at Royal View, near Lethbridge, Alta.

Macleod to Frank, Alta.—The Board of Railway Commissioners has approved location plans for a branch from Macleod to Frank, Alta., 54.52 miles.

Kipp-Aldersyde Branch.—The Board of Railway Commissioners has authorized the opening for traffic of a further section of this branch from Carmangay, mileage 28.2, to Aldersyde, mileage 84.2, from Lethbridge, Alta.; the extension was opened Nov. 5.

Fort Steele to Skookumchuck, B.C.—Press reports state that a contract has been let to Foley, Welch and Stewart to build a line from Fort Steele to Skookumchuck, about 50 miles.

Kootenay Central Ry.—Application is being made to the Dominion Parliament for an extension of time for the building of the lines already authorized and for power to build a branch from the C.P.R. Crowsnest branch near Galloway, B.C., southerly to the International boundary.

Improvements at Coquitlam, B.C.—A bylaw approving the agreement between the council and the C.P.R. with reference to the laying out of yards, etc., at Coquitlam was voted on by the taxpayers Nov. 18, and passed by a majority of 136, only six voting against it.

Victoria Hotel.—A contract has been let to Skene and Christie, Victoria, B.C., for the erection of a six story addition to the Hotel Empress, Victoria. Work was started Nov. 1, under the charge of J. L. Skene.

Esquimalt and Nanaimo Ry.—The steel bridge, replacing the wooden trestle across Niagara Canyon, has been completed and will be opened for traffic as soon as it has been accepted from the contractors.

The Board of Railway Commissioners has approved location plans for a branch line from Comox, via Cumberland, to Alberni, 11.1 miles, and to Great Central Lake.

A contract has been let, we are officially advised, to the Westholme Lumber Co. for clearing the right of way for the extension of the E. and N. Ry. between McBride Jct. and Union Bay. This extension is about 40 miles, and starts from the main line, where the line to Alberni branches off. The contractors are reported to have started work, and will push it forward rapidly, as it is intended to start grading as soon as possible.

The extension into Port Alberni will, it is expected, be put in operation early in Dec.

Application is being made to the Dominion Parliament to increase the company's bonding powers and give it power to build the following additional lines: from near the north fork on the Oyster River, on the line authorized by par. a, sec. 2, chap. 92 of the statutes of 1906, northerly and northwesterly to Hardy Bay, on the west coast of Vancouver Island. (Nov., pg. 1060a.)

Canadian Pacific Railway Hotel Extensions.

Travel on the C.P.R., particularly through the west, has grown so enormously that extensive additions to many of the hotels on the system are being planned. The hotels at Banff, Lake Louise, Field and Glacier were forced almost daily during the past season, to turn away tourists.

At St. Andrews, N.B., the accommodation of the Algonquin Hotel has been increased, bringing the number of rooms up to nearly 250. The McAdam Hotel at McAdam Jct., N.B., has been recently added to.

While it was expected when the Royal Alexandra at Winnipeg was being built that sufficient accommodation had been provided for at least 20 years, its extension has already become necessary.

The new Calgary hotel, to contain 350 rooms, is being fitted up with the most modern conveniences, the work being rushed with the idea of early completion.

The Banff Springs hotel is also having extensive additions built in, the main part consisting of a centre wing to contain 100 rooms. New employes' quarters are also being built. The new sulphur water swimming pool will be completed for the 1912 season. These pools are tiled throughout. A considerable number of artisans will be retained on these improvements all winter.

At the Lake Louise hotel there is to be an immediate addition of at least 125 rooms, making a total of nearly 250. There will also be added more kitchen space, and a new boiler plant and laundry. A detached employes' quarter, as at Banff, is being built.

At Balfour, B.C., the new Kootenay Lake hotel, situated on the lake of the same name, was opened last August.

At Glacier, B.C., the Glacier House is having another 100 rooms added, making a total of 190 in all.

The Fraser Canyon House at North Bend, B.C., was recently re-opened after thorough renovation. It has 16 bedrooms.

Extensive additions and improvements are being carried out at the Hotel Vancouver, which when completed, will bring the rooming capacity up to 600. The improvements include a new centre part, kitchen, dining room and grill room. This year, in spite of the two new additions recently put up containing 58 and 72 rooms, respectively, the management was heavily handicapped for room.

At Victoria, B.C., the Empress is having another 70 rooms added to its original number of 220, which at the time of construction was deemed sufficient for the next five years.

◆

The C.P.R. has now 2,000 men enrolled in classes for first aid to the injured, at about 100 points on its lines.

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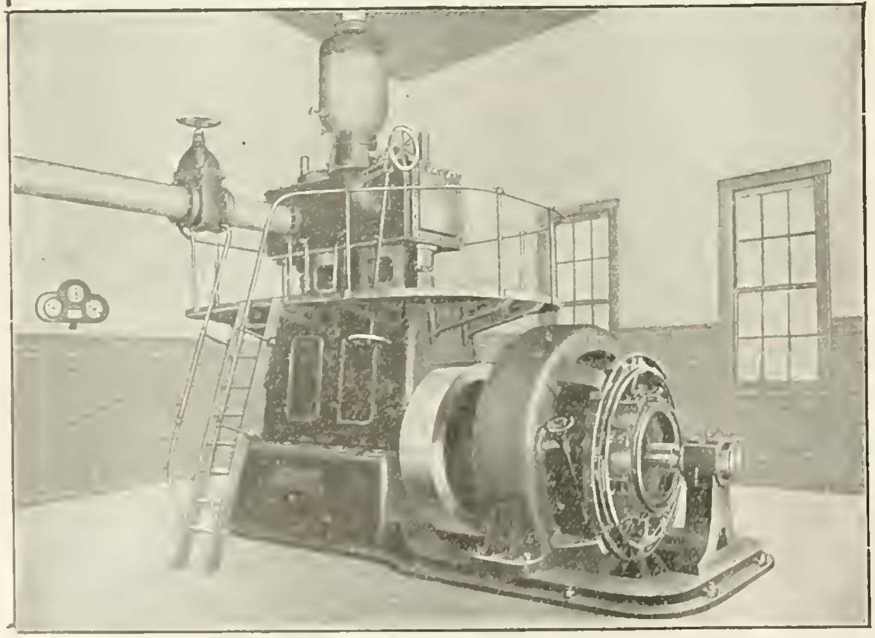

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39-6

Traffic Orders by the Board of Railway Commissioners.

Summaries of other orders are given on another page, under "Orders by the Board of Railway Commissioners."

EXPORT LUMBER RATES TO MONTREAL.

14964. Sept. 19.—Re application of Robert Cox and Co. complaining that the rate charged by the C.P.R. on lumber from Routhier, Que., to Montreal, for export, was excessive and discriminatory, it is ordered that the company reduce its export rate on lumber from Loranger, Hebert and Campeau to 5c. per 100 lbs., and from Routhier and Mont Laurier to 6c. per 100 lbs., and that the company file a tariff making the said rates effective not later than Oct. 18.

RATES ON HAY TO EASTERN U.S. POINTS.

15080. Oct. 12.—Re application of Montreal Board of Trade Transportation Bureau, on behalf of the shippers of hay of the city of Montreal, under sec. 323 of the Railway Act, for an order disallowing the increased rates on hay from Ontario and Quebec to eastern United States points, which otherwise will become effective on Oct. 16, and reinstating the present rates of the Grand Trunk, Canadian Pacific, Canadian Northern, and Quebec, Montreal & Southern railway companies: Upon representations made to the Board by the Freight Traffic Manager of the G.T.R. on behalf of the carriers which have published and filed tariffs of advanced rates on hay and stray from points in Canada to points in the U.S., to become effective Oct. 16, that the carriers desire to postpone the effective date of the said tariffs until Jan. 1, 1912: It is ordered that the effective date of the said tariffs published and filed by the Grand Trunk, Canadian Pacific, Canadian Northern Ontario, Canadian Northern Quebec, Quebec, Montreal & Southern, Central Vermont, Ottawa & New York, Central Ontario, Thousand Islands, and Lotbiniere & Megantic railway companies, and the New York Central & Hudson River and Rutland railroad companies, be postponed until Jan. 1, 1912, until which date the tariffs on hay and straw, lawfully in force from and to the said points at the date of this order, shall not be increased. And it is also ordered that the said companies be required to justify the said advanced rates at a sittings of the Board to be held at Ottawa on Nov. 21, 1911.

ADJUSTMENT OF FREIGHT CLAIMS.

15141. Sept. 15.—Re application of Canadian Freight Claims Bureau of Winnipeg, complaining of delay by Canadian Pacific and Canadian Northern railway companies in payment of claims for overcharges caused by referring complaints to Montreal for adjustment, and applying for an order requiring that the same be investigated and disposed of at Winnipeg. It appearing that the Board has no jurisdiction to afford the relief asked for, the application is hereby dismissed.

Commissioner McLean gave the following judgment: The complaint as launched was directed against both the C.N.R. and the C.P.R. At the hearing, the complaint as to the C.N.R. was withdrawn by the applicants. The complaint in brief is that when a claim for an overcharge is filed, it has to be sent to the head offices of the company at Montreal; thence it is returned to Winnipeg to be examined into; then it is returned to Montreal with the report of the railway official who has looked into it; and that, thereafter, the settlement, if any, is made from the Montreal office. It is alleged that this involves an unnecessary delay. The applicants desire that the claims should be investigated and settled at the Winnipeg office. It appears that the C.P.R. has its Freight Claims Auditor at Montreal, to whom all claims are sent either by the claimant or the local representative of the company with whom the claim may have been lodged. The central claims office is a recognized institution with all large railways. It [illegible] appears that the more extensive the company's operations, the greater necessity for centralization in the matter of disbursements. There was at one time a branch claims office at Winnipeg, but I understand that when this was in existence it was none the less necessary to have the vouchers signed in Montreal. A. J. Beatty, who appeared for applicants, stated at the hearing that he was unable to find anything in the Railway Act which empowered the Board to order claims to be paid at Winnipeg, and that whatever might be urged by him in this matter was a matter of inference from the Board's powers as to rates. Under sec. 78 of the Railway Act, the tolls and tariffs legally in force are conclusive against the railway in case of prosecution under the Act. Sec. 398 sets out the penalties attaching to the disregard of the provisions of the Act in respect of tolls. It is established that the Board has no power, under the Railway Act, to order the refund of such portion of a rate as is in excess of the legal rate. If, on determination by the Board that there is such excess, the railways refuse to refund, then the remedy is by action in the courts. The powers of the Board being so limited as to a matter in which it makes a formal adjudication, it follows with greater force that in the matter of an alleged overcharge, as to the conditions of which the Board is not cognizant, it has no jurisdiction to determine when and where such refund shall be made. Parliament not having spoken in the matter, the Board has no jurisdiction, and the application fails.

UNPREPAID JOINT FREIGHT TRAFFIC.

The Board on Nov. 11 notified railway companies that it would require them on Nov. 21 to show cause why a regulation should not be made that in transferring to a second carrier unprepaid joint freight traffic, they should show that carrier how their charges are made up; the second, or delivering, carrier to show the information in its advice note to the consignee.. A second circular, issued Nov. 14, postponed the hearing to Dec. 19.

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Oil Fuel For C. P. R. Locomotives in British Columbia.

As announced in our issue of June last, the C.P.R. has decided to use crude oil for fuel for the locomotives on a portion of its British Columbia Division. We are now further officially advised that circular tanks of rivetted steel boiler plate, with a capacity of 200,000 gallons, will be built on the Shuswap and Mountain subdivisions of the first district of the B.C. division, at Field, Golden, Roger's Pass, Revelstoke, Sicamous Jct., Notch Hill and Kamloops.

We are also advised that the only change necessary in the locomotives will be the insertion of jet burners in the fire boxes. The tenders will be changed to hold oil instead of coal.

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The Master Boiler Makers Association will hold its next convention at Pittsburgh, Pa., May 14-17, 1912. J. Rogers Flannery, of the Flannery Bolt Co., is secretary of arrangements.

P. A. Freeman, General Superintendent and Chief Engineer, Halifax Electric Tramway Co., read a paper on "Development of Electric Power at the Pit Mouth" at the annual meeting of the Nova Scotia Society of Engineers recently.

Canadian Northern Railway Earnings' Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases, compared with those for 1910-11, from July 1, 1911:—

	Earnings.	Expenses.	Net Earnings.	Net Increase
July	$1,475,900	$1,114,300	$361,600	$13,400
Aug.	1,420,600	1,105,900	314,700	51,700
Sept.	1,576,400	1,157,000	419,400	38,200
	$4,472,900	$3,377,200	$1,095,700	$103,300
Inc.	874,900	771,600	103,300	....

Approximate earnings for October, $2,028,900, and for two weeks ended November 14, $1,030,000 against $1,627,800 and $737,100, for same periods 1910.

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Canadian Pacific Railway Earnings, Expenses, Etc.

Gross earnings, working expenses, net profits, increases or decreases, compared with those for 1910-11, from July 1, 1911:

	Earnings.	Expenses.	Net. Profits	Net Increase.
July	$ 9,661,818.14	$5,958,789.81	$3,703,028.33	$218,408.74
Aug.	10,421,904.42	6,346,333.41	4,075,571.01	383,898.68
Sept.	10,049,084.97	6,131,638.17	3,917,446.80	5,847.16
	$30,132,807.53	$18,436,761.39	$11,696,046.14	$608,154.58
Inc.	2,693,047.87	2,034,893.29	609,154.58	....

Approximate earnings for October, $11,113,000, and for two weeks ended November 14, $4,979,000, against $10,150,000 and $4,375,000 for same periods 1910.

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Grand Trunk Railway Earnings, Expenses, Etc.

The following figures show the earnings and expenses of the G.T.R., C.A.R., G.T. Western Ry. and D.G.H. & M.R. for Sept., as compared with those for Sept., 1910:—

GRAND TRUNK RAILWAY.

	1911.	1910.
Earnings	$3,458,600	$3,217,700
Expenses	2,476,200	2,269,200
Net earnings	$ 982,400	$ 948,500

CANADA ATLANTIC RAILWAY.

	1911.	1910.
Earnings	$ 184,400	$ 175,800
Expenses	156,700	158,700
Net earnings	$ 27,700	$ 17,100

GRAND TRUNK WESTERN RAILWAY.

	1911.	1910.
Earnings	$ 560,000	$ 529,600
Expenses	431,600	402,100
Net earnings	$ 128,400	$ 127,500

DETROIT, GRAND HAVEN AND MILWAUKEE RY.

	1911.	1910.
Earnings	$ 206,500	$ 184,900
Expenses	149,500	147,700
Net earnings	$ 57,000	$ 37,200

Approximate earnings for Oct., $4,468,718, and for two weeks ended Nov. 14, $1,916,798, against $4,180,039 and $1,802,180 for same periods, 1910.

TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate from July 1 to Oct. 31:—

	1911.	1910.
Grand Trunk Railway	£2,834,963	£2,481,267
Canada Atlantic Railway	155,660	137,289
Grand Trunk Western Ry	465,435	403,703
Detroit Grand Haven and Milwaukee Ry.	164,179	136,562
Totals	£3,620,257	£3,158,821

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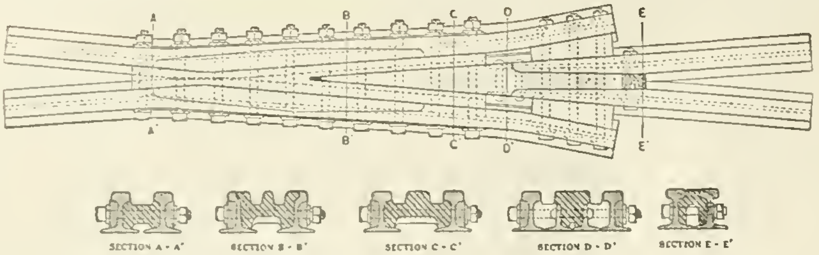
Quebec Public Utilities Commission.

The Commission has passed the following orders recently:—

Authorizing the Shawinigan Water and Power Co. to cross the Shawinigan Terminal Ry. Co.'s line and divert a roadway.

Approving the C.P.R.'s plans for a bridge over the branch of the St. Maurice River at Cap de la Madeleine, to connect with Belle River Island.

Authorizing the Quebec County Ry. to operate the extension of its upper town line from St. Louis St. to St. George St., and along St. George St. to St. Edward St., two-thirds of a mile.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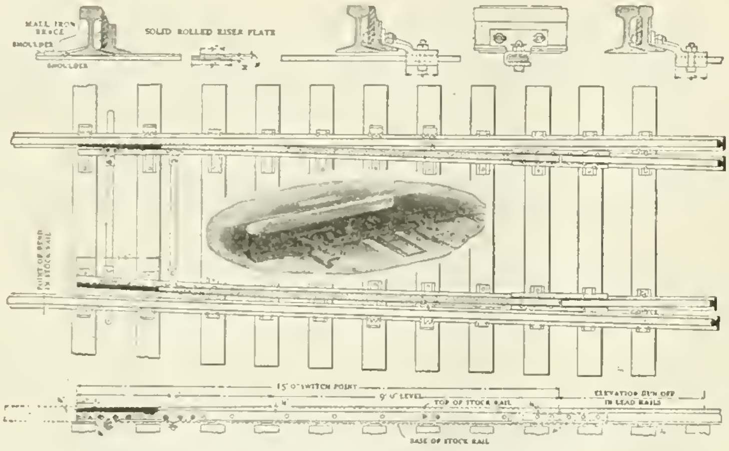
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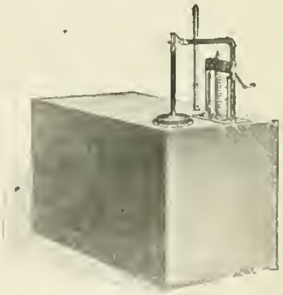

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RAILWAY DEVELOPMENT.

Projected Lines, Surveys, Construction, Betterments, Etc.

Alberta Central Ry.—The Board of Railway Commissioners has approved the deviation of location for the line between mileage 0 and 64.5 west of Red Deer, Alta.; and plans of bridges over Medicine River, Horseguard River, mileage 50, and Fleming's Creek, mileage 60.1, all west of Red Deer. (Nov., pg. 1035.)

Alberta Ry. and Irrigation Co.—The town council of Pincher Creek, Alta., decided at a meeting, Nov. 3, to protest against the approval by the Dominion Government of plans filed for the entrance of one of the company's branch lines into the town. (Oct., pg. 935.)

Algoma Central and Hudson Bay Ry.—The section of the line from mileage 65 to 79 has been taken over by the company from the contractors, and a regular train service was put in operation Oct. 28. The Board of Railway Commissioners has authorized the operation of regular trains on the extension as far as mileage 85 from Sault Ste Marie, Ont. Track has been laid to mileage 91, at the crossing of the Montreal River, where a large bridge has been completed. Three trestles at mileage 93 are nearing completion; two other trestles at mileage 99 are well advanced, and three trestles between mileage 104 and 106 are also under construction. Grading has been completed to Agawa, at mileage 126, and it is expected that track will be laid to that point this season. The remainder of the grading to Hawk Lake Jct. has been completed, and the line is being operated from that point to Josephine Jct., the point of connection with the Michipicoten branch. This junction is at mileage 170 from Sault Ste Marie. The grading between Hawk Lake Jct. and Hobon, on the C.P.R. transcontinental line is well advanced, a late report stating that there is only about nine miles to be completed. The Board of Railway Commissioners has approved a revised location on this section between mileage 30.08 and 53 from Hawk Lake Jct., and ordered an interlocking plant at the crossing at grade of the C.P.R. at Hobon. It is expected that the line will be completed to Hobon early in 1912. Grading is also in progress from Hobon towards the National Transcontinental Ry.

A contract has been entered into with the Dominion Government under the act granting aid to certain railways for a line from Sault Ste. Marie to the C.P.R. between White River and Dalton stations, about 200 miles, and for a line from Michipicoten harbor towards the C.P.R., about 25 miles. Both lines are under construction, and trains have been operated over nearly 100 miles for several years, but until the present time the Dominion subsidies have not been granted. The Michipicoten line joins the main line at Hawk Lake Jct., and the junction with the C.P.R. is at Hobon.

Atlantic, Quebec and Western Ry.—Local reports state that although track has been laid into Gaspe, Que., on the extension of this line, it is not intended to have it fully ballasted and completed for the regular operation of trains until next year. (Nov., pg. 1035.)

Burrard Inlet Tunnel and Bridge Co.—E. Cruttwell, London, Eng., representing Sir J. W. Barry, the special engineer engaged by the municipalities in connection with the planning of the bridge proposed to be built over the second narrows of Burrard Inlet, arrived in Vancouver, B.C., Nov. 2. After consultation with the local engineers, and an inspection of the site, he took charge of the plans, etc., that had been prepared, and stated that he would remain in the city until he had completed the work of examining them and advising the municipalities. (Nov., pg. 1035.)

Calgary and Fernie Ry.—The Dominion Parliament is being asked to extend the time for the building of this line and to increase the company's bonding powers. Pringle and Guthrie, Ottawa, are solicitors for applicants. (May, 1910, pg. 349.)

Canadian Collieries (Dunsmuir), Ltd.—Press reports state that $1,000,000 has been appropriated for improvements at the company's collieries, and railways in the vicinity of Wellington, Vancouver Island, B.C.

Central Ry. of Canada.—Application is being made to the Dominion Parliament to confirm certain transfers and agreements between the company and the Ottawa River Ry., the Central Counties Ry., the Great Eastern Ry., the Ottawa Valley Ry., the Carillon and Grenville Ry., and the Ottawa River Navigation Co., and to amalgamate these companies with the Central Ry. Co. of Canada. An extension of time for the construction of the several authorized lines is asked, and also power to build the following additional lines of railway:—from a point in Laval county to St. Jerome, Terrebonne county, from the main line in Two Mountains county to St. Scholastique, Que.; from the main line in Hochelaga county passing through Chambly, Vercheres and St. Hyacinthe counties to Ste. Rosalie, on the Intercolonial Ry.; from a point in Chambly county on the last named line through Laprairie and Napierville counties to the Intercolonial boundary in St. John's county. The company also asks power to enter into agreements for various purposes with the Pontiac Central Ry., Western Central Ry., Quebec, Montreal and Southern Ry., Montreal and Southern Counties Ry., Joliette and Lake Manuan Colonization Ry., and the Imperial Traction Companies. The notice of application is signed by J. D. Wells, Secretary.

A meeting of the shareholders of the Great Eastern Ry. has been called to be held in Montreal, Dec. 18. Among other things to consider is an agreement of the sale of part of the company's assets.

We are officially advised that L. B. Howland represents the C. Ry. Co. of Canada as Superintendent of Construction for the entire line from Montreal to Georgian Bay, together with the projected branches. It is proposed to carry on survey work east and west of Hawkesbury, Ont., during the winter, and to make arrangements for starting construction in the spring. The contractors, C. J. Willis and Sons, of London, Eng., have a branch office in Montreal, and also have a temporary construction office at Hawkesbury. (Nov., pg. 1035.)

Dominion Atlantic Ry.—The Board of Railway Commissioners has approved revised location plans of the projected North Mountain branch from Centreville to Lakeville, N.S., 5.1 miles. (Nov., pg. 1035.)

Dominion Pacific Ry.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from the International boundary in range 23 west of 4th meridian, Alberta, northeasterly to Cardston, and on via Pincher Creek to Lundcreek on the C.P.R. Crowsnest branch, thence northerly and west of the Porcupine Hills to Calgary; thence northerly, and west of Snake, Gull and Pigeon Lakes to Edmonton, and on northwesterly to Fort St. John, B.C., with a branch from Pincher Creek southwesterly and along the south fork of the Old Man River to the boundary between Alberta and British Columbia. O. E. Culbert, Ottawa, is solicitor for applicants. (July, pg. 645.)

Duluth and Northern Minnesota Ry.—During the hearing of an application of the company for power to increase rates on logs and forest products, before the Minnesota State Railroad and Warehouse Commission, Nov. 9. J. Mullen, Vice President and General Manager, said it was planned to extend the line through Lake and Cook counties about 60 miles to a junction with the Canadian Northern Ry. The company's line now extends from Knife River to Cramer, Minn., 62 miles. At Knife River connection is made with the Duluth and Iron Range Rd., and the apparent junction with the C.N.R. would be at or near Gunflint Lake, at the International boundary, where the C.N.R. Gunflint branch—the Old Port Arthur, Duluth and Western Ry. ends.

Essex Terminal Ry.—The Board of Railway Commissioners has authorized the opening for traffic of the company's line in Walkerville to east of Giles Ave., between Windsor Ave. and Macdougall St., Windsor, Ont. (Sept., pg. 853.)

Fredericton and Grand Lake Coal and Ry. Co.—Application is being made to the Dominion Parliament to declare the line proposed to be built from Gibson to Minto, N.B., to be a work for the general advantage of Canada, and to authorize the company to enter into any agreement with the C.P.R. under sec. 361 of the Railway Act. The notice of application is signed by H. P. Timmerman, President, who is Industrial Commissioner, C.P.R. Eastern Lines.

The C.P.R. is applying to the Dominion Parliament for power to enter into an agreement with the Province of New Brunswick for any of the purposes specified under sec. 361 of the Railway Act in respect of a line extending from near Norton to Minto, N.B. This is the New Brunswick Coal and Ry. Co.'s line of which the proposed F. and G.L.C. and R. Co.'s line would be a connection. The N.B. Legislature last session passed an Act guaranteeing bonds for the construction of the Gibson-Minto line, on certain conditions, one of which had to do with the taking over of the N.B.C. and R. Co.'s line.

Sir Thomas Tait is taking an active interest in the proposition, and it is said that proposals have been submitted to the New Brunswick Government which will be embodied in an act amending that passed last session. If the rearrangement of the conditions as to a guarantee of bonds is carried through it is expected that construction will be proceeded with early in 1912. (Nov., pg. 1035.)

Gatineau and Ungava Ry.—Application is being made to the Dominion Parliament to change the name of the company to the Ottawa and Ungava Ry. Co., and to extend the time within which it may build the lines authorized by sec. 7, chap 102, of the statutes of 1909-10. A. T. Genest, Ottawa, is solicitor for applicants. (Jan., 1910, pg. 19.)

Hudson Bay, Peace River and Pacific Ry.—See Winnipeg City Power Line.

Intercolonial Ry.—On the branch line to Sydney Mines, N.S., a four span steel bridge across Georges River has been completed.

The overhead bridge on St. George St., Moncton, carrying the street over the railway is nearing completion. The substructure is of concrete, and the superstructure of steel. It has a span of 180 ft., and is 36 ft. wide.

The proposed cut-off at Moncton leaves the main line, Moncton to Halifax, at Sunny Brae station, 1.22 miles east of Moncton station, and extends 1.14 miles westerly through the northern part of the city to the east of the proposed freight terminal yard. This cut-off will be a double track line laid with 80-lb. rails: it will cross Hall's Creek on a steel superstructure of three

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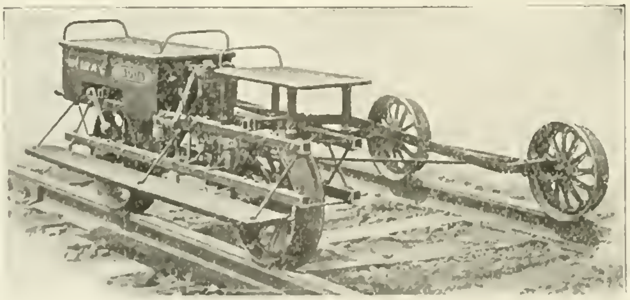

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spans—70, 125, and 60 ft. respectively—carried by concrete substructures on pile foundations, and will be carried over Church and Archibald Sts. by steel spans on concrete abutments, crossing three other streets at grade. The yard will extend from the west end of the cut-off, westerly 1.97 miles to an intersection with both the I.R.C. main line, Moncton to Montreal, and the National Transcontinental Ry., 2.6 miles northwest of Moncton station. This yard will be a gravity switching system, with receiving, classification, and dispatching yards, from and to Moncton, Halifax, and St. John, and two humps; it will have two locomotive houses, coal chutes, ash pits, water supply, etc., and about 35 miles of track. Tenders for the graduation, sub-structures, track-laying, ballasting, etc., have been advertised for, and it is expected that work will be commenced this year. (Nov., pg. 1035.)

Interprovincial and James Bay Ry.—Application is being made to the Dominion Parliament to revive the act of incorporation, extend the time for construction, and increase the bonding powers. An alternative notice asks for the incorporation of a company with this title to build a railway from near Lumsden's Mills, on the Lake Temiskaming Colonization Ry., to or towards the Des Quinze River, Que. Pringle, Thompson and Guthrie, Ottawa, are solicitors for applicants. (July, 1909, pg. 477.)

Joliette and Lake Manuan Colonization Ry.—A press report states that a contract has been let to the British Canadian Construction Co., Ottawa, to build a line from Montreal, through Joliette, Que., to the National Transcontinental Ry., about 217 miles, the work to be completed by Dec., 1913. Further reports state that work has been started between Joliette and Ste. Emelie de L'Energie, and that some miles of grading has been completed. It is proposed to continue work all winter on the rock sections. J. A. Patten, St. Felix de Valois, Que., is Chief Engineer.

The B. C. C. Co. was incorporated under the Dominion Companies Act, Nov. 4, with $500,000 capital and office at Ottawa, to carry on a railway and general contracting business, the incorporators being: A. M. Laredo, London, Eng.; H. S. Ross, P. O'Reilley, R. M. Bobier and A. Gay, Montreal. (Oct., pg. 935.)

Kelowna, B.C.—Survey parties are reported to be going over a section of the route projected for the abandoned Midway and Vernon Ry., in the vicinity of Kelowna, but with what object has not been made public. One report states that an extension of the Shuswap and Okanagan Ry. from Vernon to Kelowna is proposed, and another states that the surveys are in connection with the projected construction of electric railways in the Okanagan Valley.

Kettle Valley Lines.—About 57 miles of track has been laid, and an additional 84 miles of grading is in various stages of construction. At the Midway end, track has been laid to the third crossing of the third fork of the Kettle River, 27 miles, and it is expected that track will be laid to Carmi, 18 miles further, by the end of the year. At the other end track has been laid from Merritt to Otter Summit, 30 miles, and it is expected that a train service will be put in operation over it at an early date. Construction work on another section between Penticton and Osprey Lake, 40 miles, has been started, and L. M. Rice, one of the contracting firm, stated Nov. 2, that he expected to have it completed by the summer of 1913. (Nov., pg. 1035.)

Kootenay and Alberta Ry.—The Board of Railway Commissioners has authorized the company to take for railway purposes, land at the junction of its line with the C.P.R. main line, on the Crowsnest Division, Alta.

L. B. Merriam, Chief Engineer, was in Pincher Creek, Alta., Nov. 3, looking over routes for a possible entrance. (Nov., pg. 1035.)

London and Port Stanley Ry.—The directors, who represent the city of London, have under consideration a proposition for the purchase of a considerable area in the eastern section of London, to provide for an extension of the line, and for factory sites. (Oct., pg. 937.)

Michigan Central Rd.—A good deal of work has been done in the laying out of the site for a new terminal station in Detroit, Mich. A number of directors visited the site Nov. 10, when the complete plans were explained by G. H. Webb, Chief Engineer. It is said that the building of the station will be pushed forward as fast as possible. (Nov., pg. 1035.)

Minneapolis and St. Louis Rd.—The company's engineers were reported, Nov. 16, to be engaged in preliminary surveys south of the International boundary for a line to connect with one of the Canadian lines. Three routes are under examination: one from Bagley to Clearwater county, N.D., northwesterly; a second easterly, and the third towards Thief River Falls, through Rosseau and north to the International boundary. (Nov., pg. 1035.)

Minneapolis, St. Paul and Sault Ste. Marie Ry.—The Central Terminal Ry. has given a mortgage, filed Nov. 18, to the Guaranty Trust Co. of New York to secure an issue of $20,000,000 first Chicago Terminal 4 per cent. 30-year sinking fund gold bonds. The C.T.R. Company was organized in connection with the M.. St. P. and S.S.M. Ry., and has taken title to 105 parcels of land in Chicago, on which it is proposed to lay out freight terminals.

Montreal Central Terminal Ry.—Application is being made to the Dominion Parliament to extend the time within which the company may build the authorized lines, tunnel and bridge, and to permit the issue of an increased amount of common stock and bonds. The notice is signed by F. E. Carne, Secretary. (July, pg. 647.)

Naas and Skeena River Ry.—Vancouver press reports state that arrangements are being made to open up some extensive deposits of anthracite in the Nasoga Gulf and Naas River districts of British Columbia, and that a railway will be built from the mines to the mouth of the Naas River, Nasogo Gulf, to bring out the product. R. C. Campbell-Johnson, mining engineer, Vancouver, who is interested in the project, is one of the provisional directors of the N. and S.R. Ry., incorporated last session of the B.C. Legislature. (April, pg. 321.)

North Arm Bridge and Ry. Co.—The incorporators of this projected railway and bridge include —. Loewen, Vancouver, and —. McCartney, Victoria, and the company was stated, by Vancouver press reports, Nov. 8, to be entirely independent of affiliations with existing railway companies. The route, as outlined by the promoters, is from the end of the C.P.R. spur which runs around the head of the south arm of Burrard Inlet, across the Admiralty reserve, over a bridge to be built to the north shore and thence northwesterly along the shore line of Burrard Inlet to North Vancouver. (Nov., pg. 1037.)

North Shore Colonization Co.—A company with a capital of $200,000 and office at Newcastle, N.B., has taken over the development of what is known as the Legan settlement on the North Shore of the Mirimichi Bay. W. L. Allen is Secretary of the company, which held its organization meeting at Newcastle, recently. The question of the extension of the company's operations was discussed and it was considered advisable that steps should be taken with the view of securing a railway connection. This may be done either by building an independent line, or by getting the Government to build the line as a branch of the Intercolonial Ry.

Point Anne Ry.—The Board of Railway Commissioners has authorized the company to connect its line with the Canadian Northern Ontario Ry. on lot 20 near Point Anne, Ont. (See Belleville and Point Anne Ry., July, 1903, pg. 233.)

Quebec and Saguenay Ry.—The grading of this line is reported to be progressing at a rapid rate, and it is expected that a portion of the mileage under contract will be in operation early next year. It is hoped to have the line to Murray Bay completed by the end of the year, and then the question of the extension to Tadousac, Que., will be considered.

We are officially advised that the construction work during the season now drawing to a close has been very satisfactory. The part under contract to the Bishop Construction Co., from Pointe au Pic wharf to the new pulp mills at Nairne Falls, 7½ miles, is completed, with the exception of ballasting, which will be done next spring. The rest of the road from Cape Tourmente to Pointe au Pic wharf, 56.5 miles, is well advanced. Thirty-three miles of grading has been completed; the work will be continued during the winter, and it is expected that the contractors, O'Brien and Doheny, will complete the grading in good time next season, to get the rails laid for the entire distance early next fall, and mostly, if not all, ballasted. The amount of solid rock moved on the O'Brien and Doheny contract this season from June to Oct. 31, was 450,000 cubic yards. The rock is completely covered by sub-contractors, thus ensuring rapid construction.

It is said that surveys for the continuance of the road to Cape St. Charles, on the Labrador coast, will be started in the near future.

Quebec Central Ry.—Application is being made to the Quebec Legislature to authorize the company to build a branch line through Megantic, Lotbiniere and Levis counties. In an interview, Nov. 18, J. H. Walsh, General Manager, is reported to have said the proposed branch would start from the main line between Thetford Mines and Broughton, and would connect with the proposed branch from Scotts to Quebec. The building of the branch had always been contemplated, as it would shorten the distance between Sherbrooke and Quebec, and avoid the heavy gradients in the Chaudiere Valley and the summit near Broughton for through traffic from Quebec. Preliminary surveys show that very favorable alignments and gradients can be secured. (Nov., pg. 1035.)

Quebec Eastern Ry.—We are officially advised that trial and location surveys are now being made through Sherbrooke, Richmond, Wolfe, Megantic, Lotbiniere and Levis to Quebec, about 125 miles. Three parties are in the field working under the direction of E. H. Drury, Chief Engineer. The character of the country is rough and broken, and eight bridges will be necessary. Maximum gradient, 1 per cent. compensated; maximum curvature, five degrees spiralized. (Nov., pg. 1037.)

Quebec Harbor Railway Bridge.—The new steel bascule railway bridge at Louise basin, Quebec, which is being built by the Harbor Commission, is approaching completion. Tracks have been laid on both sides of the abutments, and everything is ready for the passage of trains as soon as the bridge work is completed.

Reid Newfoundland Ry.—The Bonavista branch, the first of the new branch lines to be built, was opened for traffic

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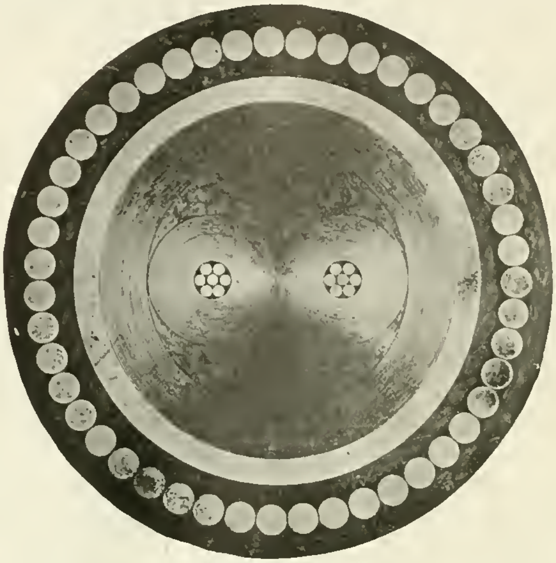

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Nov. 8. About one-third of the Trepassey branch has been completed, and work has been started on the branch from Broad Cove to Heart's Content. The other lines proposed to be built are the Bonne Bay and Fortune Bay branches. (Nov., pg. 1037.)

Royal Canadian Ry. System.—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Ste Anne du Bout de l'Isle, westerly through Vaudreuil and Soulanges counties, Que., to the St. Lawrence River in Glengarry county, Ont., with a bridge over the branch of the Ottawa River separating Montreal Island from Ile Perrot, and another bridge over the branch of the Ottawa River separating Ile Perrot from the mainland in Vaudreuil county. It is desired that these bridges be built so as to provide for general as well as railway traffic. The company also desires power to build dams, to develop electricity and dispose of the same. Gouin, Lemieux, Murphy and Berard, Montreal, are solicitors for applicants.

St. John Valley Ry.—An early start on construction of this projected railway is anticipated. The New Brunswick Premier states that a satisfactory agreement has been reached with the Dominion Government in regard to its operation. The details in so far as they differ from those laid down in the provincial legislation, and the resolutions of the Dominion Parliament, will be submitted to these bodies for their approval. (Nov., pg. 1037.)

The St. John Valley Construction Co. has been incorporated under the New Brunswick Companies Act with a capital of $49,000 and office at Woodstock, N.B., to carry on a general contracting business, and to enter into contracts with the Dominion and provincial governments for the construction of railways and other public works. The provisional directors are:—H. F. Smith, Peel, N.B.; C. Smith, H. G. Smith, St. John; J. N. Winslow, Woodstock, N.B.; G. McPhail, railway contractor, Woodstock, N.B.

Salisbury and Albert Ry.—The renovation of this line is reported to have been practically completed. The bridges have been rebuilt, and several miles of track has been relaid with heavier steel. It was expected that the line to Albert would be ready for re-opening early in Dec. (Sept., pg. 855.)

Saskatchewan Central Ry.—The Dominion Parliament is being asked to grant an extension of time within which the company may build the lines authorized by chap. 160 of the statutes of 1910. (May, 1910, pg. 353.)

Temiskaming and Northern Ontario Ry.—Speaking at Ottawa, recently, J. L. Englehart, Chairman, T. and N.O.R. Commission, said the Commission had been slow to build into Elk Lake and Gowganda because such a branch would not tap any agricultural country and also because there already existed facilities which could be utilized for water transportation. The Porcupine branch was already paying well, and a branch might be built from South Porcupine to Elk Lake. The Commission intended in the very near future to build about 100 miles beyond Cochrane towards Moose Factory. Ultimately the line would reach James Bay. Speaking at Sault Ste Marie, Ont., a few days later, Mr. Englehart said just as soon as work in hand would permit, a survey would be started for a line to connect Sault Ste Marie with the T. and N.O.R. The junction with the main line had not been determined, but it would be south of the Porcupine district. He could not make any definite statement as to when construction would be proceeded with on the line northerly from Cochrane, as there was a good deal of preliminary work to be done, but it would be at as early a date as possible.

The Premier of Ontario was quoted as having stated, Nov. 16, that application had been made to the Dominion Government for a subsidy not exceeding $6,400 a mile for this railway, and that there was every possibility it would be successful.

Owing to a slide at Pearl Lake on the Porcupine branch 500 ft. of the line disappeared. A temporary bridge is being put in pending a decision as to what will have to be done in the way of permanent reconstruction. (Nov., pg. 1037.)

Vancouver Island and Eastern Ry.—The Dominion Parliament is being asked to extend the time for building the lines authorized by the company's acts of 1908 and 1910. Smith and Johnston, Ottawa, are solicitors for applicants. (Mar., 1910, pg. 187.)

Vancouver-Nanaimo Coal Mines Co.—We are advised that this company is operating a coal mine west of the Esquimalt and Nanaimo Ry., about 2.5 miles from Nanaimo, B.C., and is delivering its output to the E. and N.R. over a logging railway. It is reported that the company proposes to extend this line to tide water, but we are advised that nothing has been done, except to secure an order from the Board of Railway Commissioners to cross the E. and N.R. overhead. A. von Alvensleben, Vancouver, B.C., is President of the company.

Winnipeg City Power Line.—With the completion of the Winnipeg city power plant the usefulness of the line built from Lac du Bonnet to Pointe du Bois, 27 miles, has ceased, and the Winnipeg city council is considering what will be done with it. One proposition which has been made is that the city should endeavor to make a bargain with the Hudson Bay, Peace River, and Pacific Ry., by which the line would form part of that company's projected line from Winnipeg to Hudson Bay, with a branch to the Peace River. While this has been suggested and may be developed, the board of control has under consideration applications from the J. D. McArthur Co., and John Gunn and Sons, who wish to secure rights over the line for the transportation of freight for industries in which they are interested.

Canadian Freight Association (Western Lines).—At the recent annual meeting at Winnipeg, the following officers were elected for the ensuing year: President, J. P. Driscoll, C.N.R.; Vice President, C. E. Dewey, G.T.P.R.; Executive Committee, W. C. Bowles, C. E. Dewey and G. Stephen; Inspection Committee, W. G. Manders, G. H. Smith, W. J. Hunter and H. H. Brown; Car Service Committee, D. C. Coleman, J. P. Driscoll, W. H. Harris and W. C. Watrous; Classification Committee, W. B. Lanigan, C. Stephen, C. E. Dewey, W. C. Bowles, W. G. Manders, R. J. Foreman and H. H. Brown; Secretary-Treasurer, W. E. Campbell.

Dominion Railway Subsidy Contracts.—Contracts have been entered into with the Algoma Central and Hudson Bay Ry., under the act granting aid to certain railways for the building of the following lines: from Sault Ste. Marie, Ont., to a point on the C.P.R. between White River and Dorion, Ont., 200 miles; and from Michipicoten Harbor, Lake Superior, towards the main C.P.R. line, 25 miles.

C. Morrow, formerly freight clerk, Quebec Central Ry., Thetford Mines, who was recently arrested on two charges of embezzlement, was acquitted at Arthabaska, Nov. 9, on the ground of irregularities in the preliminary hearing. It is stated that the terms of the acquittal do not preclude further action.

Great Northern Railway Co's Annual Report.

The annual report for the year ended June 30, shows that the authorized capital stock is $210,000,000, of which $209,981,875 is outstanding. The unissued stock is being retained for acquiring 145 shares of the stock of the St. Paul, Minneapolis and Manitoba Ry. which are still outstanding. The mortgage securing an issue of $600,000,000 first and refunding mortgage gold bonds, dated May 1, is a first lien on the company's lines, which include 533.74 miles in Canada, with all their equipment. There has been reserved $100,000,000 of this issue for the construction of additional lines, the purchase of additional property, the betterment and improvement of existing lines, and additions to rolling stock and equipment.

In 1899 the company purchased a majority of the stock of the four companies forming the Spokane Falls and Northern Ry., among them being the entire capital stock and mortgage bonds of the Nelson and Fort Sheppard Ry., and the Red Mountain Ry. in Canada. No bonds have ever been issued against any of the lines which the company has caused to be built in Canada and, during the year, the company cancelled and surrendered $1,293,000, face value, of Nelson and Fort Sheppard Ry. first mortgage bonds and $217,000, face value, Red Mountain Ry. first mortgage bonds, in each case the entire issue outstanding, receiving in lieu thereof, the full paid capital stock of each company, at par, to the same amount.

The company's investment in controlled Canadian companies, on account of advances made to pay for property, construction, additions and betterments, has been increased during the year, as follows:

Brandon, Saskatchewan and Hudson's Bay Ry.	$ 13,192.99
Crow's Nest Southern Ry.	1,686.34
Nelson and Fort Sheppard Ry.	7,236.70
Red Mountain Ry.	684.17
Vancouver, Victoria and Eastern Ry. and Navigation Co.	1,794,093.32
New Westminster Southern Ry. ..*Cr.*	558.91
Total	$1,816,334.61

To apply on the above advances and those previously made, the company has received during the year and credited at its par value, 88 shares ($8,800) of the fully paid capital stock of the Nelson and Fort Sheppard Ry. Co. and 68,000 shares ($6,800,000) of the Vancouver, Victoria and Eastern Ry. and Nav. Co. Shares of their capital stock will be duly issued by the above companies to cover the balances remaining due from them.

In 1900 the G.N.R. Co. guaranteed the payment, principal and interest, of £480,000 5% debenture stock of the Kootenay Ry. and Navigation Co., nearly half of which debenture stock and a large amount of its common stock were owned by the G.N.R. Shortly thereafter the G.N.R. purchased the balance of the common stock. During the year the K.R. and N. Co. redeemed its outstanding debentures, cancelled the entire amount, including those owned by the G.N.R., and went into liquidation. In due season the securities that were pledged to secure this debenture stock will be returned to the G.N.R. and at least a portion will be disposed of. The cancellation of the K.R. and N. Co.'s debenture stock at once terminated the G.N.R.'s guaranty.

The financial report showed gross operating revenue $61,257,632.93, a decrease of $3,207,736.94, against the figures for 1909-10; while the net income from operation was $20,562,461.37, a decrease of $1,294,519. The decrease was almost entirely in freight. The revenues of the company's Canadian lines are not given separately.

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Advertising Copy must reach the publishers by the 10th of the month preceding the date of publication, if proof is required, or by the 15th if proof is not required.

Toronto, Canada, December, 1911.

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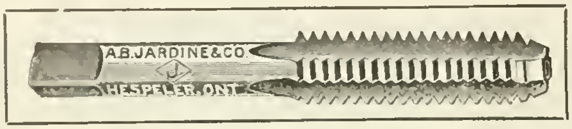

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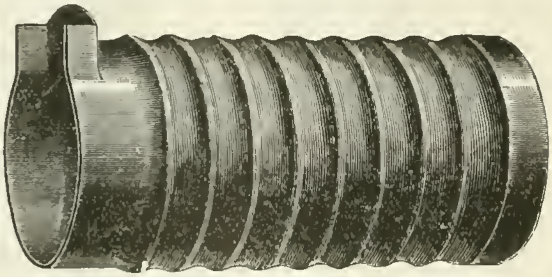

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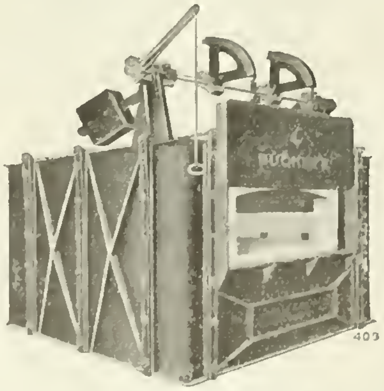

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Canadian Northern Railway Construction, Betterments, Etc.

James Bay and Eastern Ry.—The Board of Railway Commissioners has approved revised location for this projected railway from mileage 18.2 to 19.6, in Ashuapmouchouan tp., Que.

Quebec and Lake St. John Ry.—In addition to the sections relating to finance in the act which the Quebec Legislature is being asked to pass, the company is applying for power to build branch lines from any point on its existing lines, and for an extension of time within which already authorized branch lines may be built.

Canadian Northern Quebec Ry.—The Dominion Parliament is being asked to extend the time within which the lines described in pars. c, e and f, sec. 3, chap. 73 of the statutes of 1907 may be completed. These lines are, from Quebec to Moncton, N.B., and Pugwash, N.S.; from St. Jerome towards the Ottawa, Northern and Western Ry. in Wright county, Que.; and the branches and extensions of the Chateauguay and Northern Ry. mentioned in sec. 2, chap. 75 of the Quebec statutes for 1899.

The action brought by the Quebec city council to recover from the company $200,000 cash subsidy paid, owing to its alleged failure to comply with the condition that shops should be built in the city, was set down for hearing Nov. 6. The agreement was made with, and the subsidy paid to the old Great Northern Ry., which is now part of the C.N.Q.R. Before the action came on for hearing, an agreement was reached between the city and the company. A plan showing the layout of the company's yards at Limoilou was placed before the committee on Nov. 6, and a letter, signed by D. B. Hanna, President, was read. In this letter Mr. Hanna said while the company's plan of reorganization had not yet been ratified by Parliament, but with a desire to meet the city the company was willing to make a start on the new shops at Limoilou. The building of the roundhouse, machine shop and car shop would be proceeded with at once. It was desired, however, to have an assurance that the council would not directly or indirectly assist in the expropriation for a highway through the company's property, and would also agree to the closing of certain streets within the area acquired or sought to be acquired for yards, etc.; and that the property of the C.N.Q.R. and Quebec and Lake St. John Ry. in the city be subject to a fixed assessment of $6,000 a year for 20 years. The company had already acquired 85 per cent. of the property proposed to be secured for yard purposes. In explaining the matter to the committee, Mr. Hanna said the buildings would be completed by Nov., 1912; as a result of the discussion it was agreed to allow the action to remain in abeyance; to approve the company's proposals as to terms, upon a report of the city engineer that a serious start had been made upon the erection of the buildings, and to deal with the question of a fixed assessment later.

A plan for the construction of a bridge over the St. Charles River was also considered. After some discussion it was agreed that further plans be submitted, the bridge to provide accommodation for two steam railway tracks, two electric railway tracks, a road for ordinary traffic and one for foot passengers. This bridge will replace an existing one, connecting with Limoilou.

The Board of Railway Commissioners has authorized the company to build a double track across Orleans and Ste. Jean d'Arc streets, Montreal.

Montreal Terminal Plans.—It was stated unofficially in Montreal, Nov. 17, that all the plans in connection with the tunnel and central terminal plans had been completed, and would be laid before the city council within a few days. The plans, it is said, show that the company's tracks will enter a tunnel at the back of the mountain near the east end of St. Genevieve opposite to St. Eustache, which will lead to a terminal station, bounded by Cathcart, St. Monique, Lagauchetiere, and Mansfield streets. The section between Dorchester and Lagauchetiere street, it is stated, will be used for the station building, while a hotel may be built on the remaining portion of the site. The transfer of the whole of the property within the area named was reported to have been completed Nov. 9.

Canadian Northern Ontario Ry.—The Dominion Parliament is being asked to authorize the sale of a portion of the constructed right of way of the Carillon and Grenville Ry., between Grenville and Carillon, Que., by the Carillon and Grenville Ry., to the C.N.O.R., and to confirm a notarial deed of sale thereof dated July 25.

Montreal city officials were notified, Nov. 6, that application had been made to the Board of Railway Commissioners for making the necessary connections at Montreal for the new direct line to Hawkesbury. This line will join the existing line near Maisonneuve, and trains will run into the present station on Moreau st., pending the construction of the new central terminal station. This line is a part of the main line to Sudbury, Ont., for which a subsidy was granted last session of the Dominion Parliament. Nothing has been done in the way of constructing the Ottawa-Sudbury section of the line, but the usual preparatory work is being gone on with. Beyond the junction with the existing Toronto-Sudbury line, a further section has been opened for traffic, from Gowganda Jct. to one mile west of Ruel, 14 miles, the order permitting this being dated Nov. 10. The line through to Port Arthur from this point is under contract, and construction gangs are at work from both ends. The Board of Railway Commissioners has approved revised location plans for the following sections: mileage 68.7 to 80.8; 92.37 to 93.27; 124.27 to 127.32, and 182.03 to 183.79, all from Sudbury Jct., Ont.

The first section of the Toronto-Ottawa line was opened recently to Trenton, where a roundhouse, machine shop, etc., are being erected. The buildings with the necessary yard space and tracks will cover about five acres. Permission has been granted for the opening for freight traffic of a further section, from Trenton to Belleville, 15.5 miles, and for its connection with the Thurlow Ry. on lot 25, con. 1, Thurlow tp.; and with the Belleville and Point Anne Ry. The grading of the line between Belleville and Deseronto has been completed and track is being laid. From Deseronto to Sydenham the Bay of Quinte Ry. line will be used. The location of this line is being revised at two places in order to give better gradients. Work is also in progress between Sydenham and Smiths Falls, and from the Ottawa end to Smiths Falls. The Board of Railway Commissioners has approved revised locations at Perth Road, Loughborough tp., mileage 170.35 to 171.4 from Toronto; in South Crosby tp., mileage 186.77 to 188.78 from Toronto, and has authorized the operation of construction trains across the C.P.R. and the G.T.R. near Ottawa.

The land which has recently been bought near Rideau Jct., Ottawa, is, we are advised, for yards, etc., for a divisional point.

No official announcement has been made in regard to the construction of the portion of the main line between Rideau Jct., Ont., near Ottawa and the junction with the Toronto-Gowganda line in Capreol tp., Ont., but we have reason to believe that contracts will be let in the near future to J. P. Mullarkey for the work between Rideau Jct. and Pembroke, Ont., and to Angus Sinclair, C.E., for the work between Pembroke and Capreol tp.

The Board of Railway Commissioners as a result of the hearing of the company's application for a right of way adjacent to the C.P.R. tracks in the north part of Toronto, has made an order, to the effect that the C.P.R. give the company running rights over a sufficient number of tracks east of Yonge St. to Summerhill Ave., to enable it to have access to its proposed terminal yards west of Yonge St. There is to be a subway at Yonge St., where each company will have three tracks. Plans for this subway were ordered to be made in conformity with this decision.

Sir Wm. Mackenzie, President, is reported to have stated in an interview, Nov. 14, that the company is now in a position to undertake construction on the line west from Toronto, and that it is proposed to start work in the spring. It is also expected that construction will be started between Niagara and Hamilton, so that the entire line from Toronto to the Niagara frontier will be under construction by the summer. The route follows the right of way of the Electric Development Co.'s power transmission line for the greater part of the distance, and presents no engineering difficulties. There are, however a considerable number of bridges to be built. The Board of Railway Commissioners has approved revised location plans from mileage three (instead of mileage 0 as mentioned in our Nov. issue) to mileage 10.97, west from Yonge St., and from that point to mileage 34.84; thus covering the distance from just outside Toronto, through York, Etobicoke, Toronto, Trafalgar and Nelson tps. The question of the position of the Hamilton terminals, and the route by which access will be had to them is under consideration.

T. Foley, of Foley, Welch and Stewart which firm is interested in the contract for building the line from the junction with the Sudbury-Toronto line to Port Arthur, was in Toronto, Nov. 20, and is reported to have stated that there are 4,500 men engaged on the line and that in a short time there will be 400 teams at work. Construction will be gone on with during the winter as labor is plentiful, and the work is of such a character that there is no necessity to stop.

Canadian Northern Ry.—The Board of Railway Commissioners has authorized the company to build a new line across Rainy River, in the Rainy Lake District, Ont., and has approved revised location plans for the same, subject to making suitable provision for tying up logs and for the passage of steamboats and logs.

Plans have been filed for the proposed new viaduct at the south end of Main St., Winnipeg. The city council is considering the plans, particularly in reference to the lowering of the bridge three feet at the north end, in order to secure a suitable gradient from the Winnipeg side.

The Premier of Manitoba, in a recent speech, said that with the enlargement of the boundaries of the province, the building of a direct line under provincial guarantee from Winnipeg to Hudson Bay would be undertaken. Such a line could be secured by the building of about 175 miles. There is already a Canadian Northern Ry. line in operation from Winnipeg to Gypsumville tp. 31, range 9, west of 1st meridian, and a line from that point due north to intersect the line now under construction from Pas Mission, would be less than

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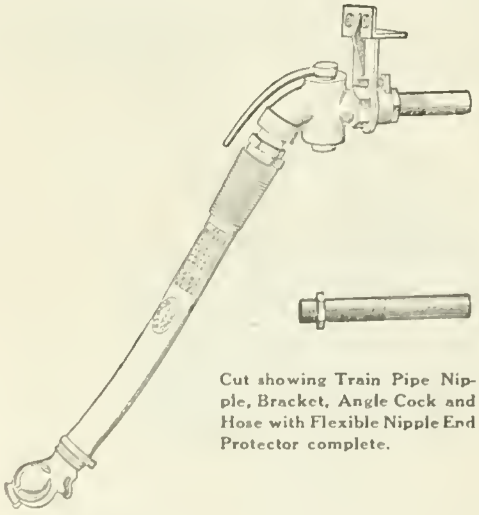

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175 miles in length. It is proposed that this line will be built by the C.N.R. under contract with the province. Another report states that a route along the east shore of Lake Winnipeg is also under consideration. At Ottawa, Nov. 21, Premier Roblin, after settling the boundary question with the Dominion Government, said the Manitoba Government would take immediate steps to provide transportation to the Hudson Bay hinterland.

The new station at Brandon, Man., has been completed and business was transferred there Nov. 11.

The Board of Railway Commissioners has authorized the building of a transfer track with the C.P.R. at Carberry, Man., and has authorized the opening for traffic of the following lines:—Thunderhill extension from Pelly to Preeceville, Sask., mileage 35.6 to 72.6; the branch from Delisle to MacRorie, Sask., 46 miles: from Luxton to Radville, 72 miles: and for freight traffic only from Radville to the end of its Moose Jaw extension, 83 miles. Further authority was given, Nov. 14, for the operation of trains over this latter section. Other branch lines opened for traffic in Saskatchewan are:—the Jackfish Lake branch from North Battleford to Edam, 39 miles; the Big River branch from Shellbrook to Big River; from Shellbrook southwesterly to Marcelin, about 30 miles, and the extension of the line from Saskatoon towards Calgary, between Kindersley and Alaska, 43 miles.

The old Qu'Appelle Long Lake and Saskatchewan Ry. has been considerably improved. The relaying with 85 lb. steel on new ties has been completed and the line has been reballasted.

Considerable betterments have been made on the line between Kamsack and Edmonton, Alta., and it is said that this work will be continued during 1912.

The Board of Railway Commissioners has authorized the opening for traffic of the branch line from Vegreville, southerly to Warden, 109 miles. This line is practically completed into Calgary.

The Board of Railway Commissioners has authorized the building of a spur line across block four of the Hudson's Bay Co.'s reserve in Edmonton, Alta.

Westward from Edmonton grading has been completed to the Pembina River, to which point it is expected that track will be laid by Dec. 31. The line to Athabasca Landing is also expected to be completed by the end of the year. On the line to Peace River it is expected that grading will be done to the crossing of the Athabasca, 30 miles from the confluence with the Macleod River, early in January.

The C.N.R. Co. is applying to the Dominion Parliament to extend the time within which the 11 branch lines, described in paragraphs a to k, inclusive, of sec. 2, chap. 80, of the statutes of 1910; and the lines authorized by paragraphs e, g, i, k and l of sec. 2, chap. 92, of the statutes of 1908, may be built; and also the lines authorized by the provincial legislatures to be built by the Alberta Midland Ry., and the Saskatchewan Midland Ry., and the Saskatchewan Northwestern Ry., now amalgamated with the C.N.R., may be built.

Canadian Northern Pacific Ry.—T. G. Holt, Executive Agent in British Columbia, in an interview at Ottawa, Nov. 9, is reported to have stated that rapid progress is being made with the building of the company's lines in British Columbia. Eighty miles have been graded from Port Mann to Hope, and a further stretch of 160 miles is covered with teams and men. From this point to the boundary near the Yellowhead Pass, is under contract, and work is going ahead. There does not appear to be any reason why the line cannot be completed within two years.

In connection with the work along the Fraser River Canyon the C.P.R. has secured an order from the courts regulating the blasting operations. It was stated that traffic had been tied up owing to large pieces of rock being thrown on the C.P.R. tracks.

Between Cisco and Kamloops, there are a number of large bridges to be built, and a contract has been arranged with Waddell and Harrington, Kansas City, Mo., for the supervision and inspection of construction of these and other bridges on the line in the province.

A sub-contract has been let to Twohey Bros., Portland, Ore., for the grading of 100 miles of the line along the Thompson River valley from mileage 62 to 162.

Vancouver Island Lines.—Tenders were received to Nov. 20 for the building of a further section of the line on Vancouver Island, from mileage 60 to 100. This 40 mile section extends from about six miles west of Duncan, to about five miles north of Cowichan Lake. Two tenders were asked for, one being on the basis of "solid rock, loose rock, hard pan and earth," and the other for "solid rock and all other material." (Nov., pg. 1055.)

Railway Finance, Meetings, Etc.

Alberta Ry. & Irrigation Co.—There has been filed with the Secretary of State at Ottawa a duplicate original of the lease of the lines, etc., of the Alberta Ry. and Irrigation Co. to the C.P.R. for 999 years from Jan. 1, 1912.

The Dominion Parliament is being asked to authorize the issue of mortgage bonds secured upon the company's railways for retiring previous mandatory securities, improving the railway and for other purposes.

Algoma Central and Hudson Bay Ry.—Following are directors for the current year,—T. J. Drummond, J. F. Taylor, W. K. Whigham, W. C. Franz, H. M. Price, H. Coppell, J. S. Dale, John T. Terry, Jr., J. T. Lea, R. L. Austin, T. Gibson and D. C. Newton.

Algoma Eastern Ry.—Following are the directors for the current year,—T. J. Drummond, W. K. Whigham, J. F. Taylor, T. Gibson, H. M. Price, W. C. Franz and D. C. Newton.

Canadian Northern Pacific Ry.—An issue of £1,400,000 of 4% debenture stock, guaranteed by the Province of British Columbia, was placed on the London, Eng., market, Nov. 13.

Canadian Northern Ry.—There has been filed with the Provincial Secretary at Toronto a mortgage dated Oct. 20, made by the company to the Imperial Rolling Stock Co., securing notes on rolling stock, which is subject to a conditional sale or bailment. The National Trust Co., Toronto, is also a party.

Cap de la Madeleine Ry.—The Dominion Parliament is being asked to declare this railway to be an undertaking for the general advantage of Canada, to change the location of its head office to Montreal, and to authorize it to enter into agreements with the C.P.R. for any purpose under sec. 361 of the Railway Act.

Dominion Atlantic Ry.—Application is being made to the Board of Railway Commissioners for a recommendation to the Governor in Council to sanction a lease of the company's railway to the C.P.R. for 999 years from Jan. 1, 1912.

Estimated passenger earnings for Oct., $76,200: freight, $93,400: total, $169,600.

The Grand Trunk Ry. Co. issued a prospectus in London, Eng., Nov. 7, of £1,250,000 four per cent. guaranteed stock, at 92, the proceeds to be applied to the company's general purposes. This stock ranks for dividend out of the profits of each year in priority of all the preference stocks. On Jan. 1, 1912, Midland 5% 1st mortgage bonds for £856,800, the balance of an original issue of £1,571,600 will mature and be paid off, reducing the company's preference charges by £42,840 a year.

Ontario, Hudson Bay and Western Ry.—Following are directors for the current year,—T. J. Drummond, J. F. Taylor, W. K. Whigham, W. C. Franz, H. M. Price, H. Coppell, J. S. Dale, John T. Terry, Jr., J. T. Lea, R. L. Austin, T. Gibson, D. C. Newton.

Quebec and Lake St. John Ry.—Application is being made to the Quebec Legislature to confirm an agreement with the Railway Share Trust and Agency Co., London, Eng., and the Canadian Northern Ry. Co., to provide that such agreement, having been sanctioned by resolutions of the company's prior lien and other bondholders, shall be binding on all holders of stock whether present at the meeting or not; to authorize the issue of the new debenture stock as provided for the winding up of the Lake St. Joseph Hotel Co., and the transfer of its properties to the Q. and L. St. J. R. Co. the discharge of the existing trust-deed, and the exchange of the securities issued thereunder for the new debenture stock.

Quebec Central Ry.—In settling up matters in connection with the lease of the Q.C.R. to the C.P.R., it was found that certificates for 1,760 shares of £25 each, originally issued to E. C. Bower, one of the original contractors for the line, were missing. The certificates were transferred some time ago to the Railway Finance and Construction Co., but it appears they have gone astray. As the result of an action, June 28, the courts decided that the R. F. and C. Co. was the owner of the certificates: that duplicates must be issued; and that the shares should not be sold for the space of a year unless with the consent of the court, the Q.C. Ry. to be indemnified for that period, and the R.F. and C. Co. to make every endeavor to locate the certificates by advertising in England and Canada.

Quebec Southern Ry.—Quebec and South Shore Ry.—The action before the U.S. Circuit Court in New York, in which $2,500,000 is claimed by H. A. Hodge and F. D. White, from A. L. Meyer, in connection with the amalgamation of these companies, prior to the receivership and the subsequent sale to the Quebec, Montreal and Southern Ry. Co., terminated in a mis-trial, Nov. 8. The plaintiffs, who represent the old Q.S.R. interests, were given time to file an amended complaint. The defendants represent the interests which brought about the amalgamation.

Temiscouata Ry.—Gross earnings for Sept., $20,269.68; expenses $14,610.17; net earnings $5,659.51, against $3,736 net earnings for Sept., 1910.

Temiskaming and Northern Ontario Ry.—Revenue for Sept., $200,177.29; expenditure, $119,112.56; balance, $81,204.73; less hire of equipment, $5,389.80; net result, $75,814.93; expenses per cent. of earnings, 59.4.

Victoria and Sidney Ry.—The Victoria city council has been informed by the Great Northern Ry., which owns the line through a subsidiary company, that while the company is prepared to hand over to the city and the province all surplus earnings to meet the interest on the bonds guaranteed by the city and the province, and to relieve them from future obligations under the guarantees, it cannot do anything in the way of recouping the city for the amounts it has already paid out on account of the line having failed to earn sufficient to meet the interest on bonds guaranteed.

White Pass and Yukon Route.—Gross earnings for six months ended Sept. 30, $969,080, against $1,089,427 for same period 1910.

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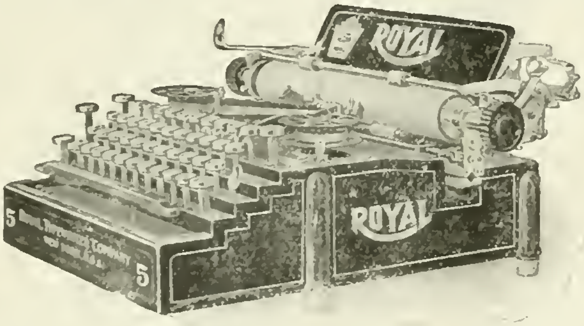

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Malniy About Transportation People.

Lord Strathcona has subscribed $2,500 to the King Edward Memorial Fund in Montreal.

R. B. Bennett, M.P., Calgary, has resigned his position as counsel for the C.P.R. in Alberta.

C. R. Hosmer, director, C.P.R., has been elected a director of the Montreal Citizens' Association.

T. P. Mooney, G.T.R. baggage agent, Bonaventure station, Montreal, was married Nov. 14 to Miss White.

Lord Strathcona has been gazetted as Honorary Colonel of the Royal Canadian cavalry corps, the Strathcona Horse.

Lady Mackenzie and Miss Mackenzie left Toronto, Nov. 6, for New York, whence they sailed for England.

Sir William Mackenzie has subscribed £1,000 to the habitation fund of the Society of Knights Bachelor, London, Eng.

W. H. Jordan, of the Canadian Northern Ry. freight tariff bureau, Toronto, died there, after a brief illness, Oct. 29.

C. E. E. Ussher, Passenger Traffic Manager, C.P.R., left Montreal, Nov. 6, on a tour of inspection to the Pacific coast.

H. N. Ruttan, M. Can. Soc. C.E., City Engineer, Winnipeg, has been granted six months leave of absence on account of ill health.

Sir William Whyte has been elected a director of the Imperial Guarantee and Accident Insurance Co., in place of the late J. J. Kenny.

J. P. Mullarkey, railway contractor, has been appointed a commissioner of the school of higher commercial education for Quebec.

W. G. Webster, on retiring from the G.T.R. ticket agency at Stuart St. station, Hamilton, Oct. 30, was presented with a purse of gold.

J. C. Weir, President and Managing Director of J. and R. Weir, shipbuilders and marine engineers, Montreal, died there Nov. 9, aged 76.

Miss Hebert, daughter of E. J. Hebert, First Assistant General Passenger Agent, C.P.R., Montreal, was married there, Nov. 14, to Dr. Bemers.

C. E. Morgan, G.T.R. ticket agent at Hamilton, Ont., who died there recently, left an estate valued at $49,665 to his son and daughters.

A. E. Chamberlain, who was recently appointed Development Commissioner, Great Northern Ry., St. Paul, Minn., was born in Ontario in 1860, and has lived in the U.S. since 1886.

F. P. Gutelius, General Superintendent, Eastern Division, C.P.R., after being absent from duty for some little time owing to ill health, returned to his office in Montreal, Nov. 14.

W. J. Shaughnessy, eldest son of Sir Thos. G. Shaughnessy, President, C.P.R., was married, Nov. 16, at Montreal, to Miss L. M. Graham, niece of Sir Hugh Graham, proprietor Montreal Star.

S. O. Greening, President, B. Greening Wire Co., Ltd., Hamilton, Ont., who died there recently, left an estate valued at $470,155 to his widow and children.

W. C. Matthews, General Manager in Canada for R. G. Dun and Co., who died at Toronto, Nov. 1, was a director of the Great North Western Telegraph Co.

W. Tout, who died in Hamilton, Ont., Nov. 2, aged 79, was foreman engineer of the old Great Western Ry. He had retired from active service many years ago.

J. L. Englehart, Chairman, Temiskaming and Northern Ontario Ry. Commission, Toronto, addressed the Canadian Club, Ottawa, recently, on the future of Northern Ontario.

D. A. McDonald, who was associated with the firm of Ironsides, Rennie and Campbell in its railway contracting work, died in Victoria, B.C., recently, after a lengthened illness.

G. R. Joughins, Superintendent Motive Power and Rolling Stock, Intercolonial Ry., Moncton, N.B., is spending a holiday in Europe, during which he will visit his old home in Dublin.

Lord Mount Stephen has given £10,000 towards the establishment of a fund for providing pensions of £100 a year to Scotch Presbyterian ministers of 70 years of age and upwards.

H. B. Darnell, at one time in the C.P.R. service in Japan, and now General Agent of the International Sleeping Car Co., at Yokohama, was in Canada in November on a holiday trip.

Arthur Hawkes, formerly Superintendent of Publicity, Canadian Northern Ry., has been appointed Special Commissioner of Immigration in connection with the Dominion Department of the Interior.

O. L. Dickeson, Vice President and General Manager, White Pass and Yukon Ry., after spending some time in Ottawa, went to his old home in Ottumwa, Iowa, Nov. 10, for a holiday, accompanied by Mrs. Dickeson.

A recount of the ballots applied for by Conservatives has been refused in Queens-Sunbury, N.B., where Col. McLean (Liberal), Vice President, St. John Ry., was elected at the recent Dominion elections.

The marriage of Miss M. Jaques, youngest daughter of C. A. Jaques, Montreal, of G. E. Jaques and Co., shipping agents, Montreal, to L. P. Thompson, of Wallaceburg, Ont., is announced to take place at Montreal early in Dec.

H. Campbell Oswald, who has been appointed Assistant Secretary, C.P.R., Montreal, was born there, Sept. 6, 1871, and has been in the company's service for 25 years. He is also Secretary of several C.P.R. subsidiary companies.

W. H. Flynn, railway contractor, who died at South Berwick, Me., recently, was a native of St. Andrews, N.B. He carried out contracts on the New York, New Haven and Hartford Rd., the Pennsylvania Rd., and the Central Rd. of New Jersey.

E. W. Smith, Superintendent, Dining Cars, G.T.R., Toronto, was elected a member of the executive committee of the American Association of Dining Car Superintendents at the annual meeting held at Cincinnati, Ohio, recently.

John Brown, C.P.R. ticket agent, Stratford, Ont., who is mayor of the city and a former member of the Ontario Legislature, has been nominated by the liberals in North Perth as their candidate in the pending Ontario general election.

H. H. Tatum, a retired English surgeon, for some years connected with the G.T.R. motive power office, Montreal, died suddenly in the street while on his way home on Nov. 6. One of his daughters was married Oct. 18, to F. Jaques, of G. E. Jaques and Co.

W. H. Hill, Assistant General Freight Agent, Chicago, Burlington and Quincy Ry., Kansas City, Mo., son of A. S. D. Hill, of Eramosa, Ont., and nephew of J. J. Hill, Chairman of the Board, Great Northern Ry., died recently and was buried at Guelph, Ont.

E. Pennington, President, Minneapolis, St. Paul and Sault Ste. Marie Ry., accompanied by Mrs. and Miss Pennington, returned to Minneapolis, Minn., Nov. 5 from a pleasure tour along the Pacific coast, the return trip being over the C.P.R. from Vancouver, B.C.

J. S. Wood, who has been appointed Assistant General Freight Agent, Lehigh Valley Rd., New York, commenced his railway career in 1888 in the division freight office, G.T.R., Hamilton, Ont., and was later transferred to Montreal, where he remained to Dec., 1892.

W. E. Allinson, who has been appointed General Travelling Baggage Agent, C.P.R., Winnipeg, commenced service with the C.P.R. Baggage Department, Montreal, as office boy, Feb., 1905, and was subsequently stenographer, clerk, and since Jan. 1, 1911, chief clerk there.

W. S. Painter, who recently resigned his position as Architect, C.P.R., at Montreal, has entered into partnership with F. H. Swales as Painter and Swales, with offices at Montreal and Vancouver. Mr. Painter is still looking after the C.P.R.'s architectural work west of Calgary.

J. B. Elliott, Master Mechanic, Eastern Division, C.P.R., Ottawa, was presented with a purse of gold, Nov. 14, on his retirement from the company's service. He entered the service of one of the companies now amalgamated with the C.P.R. as fireman in 1865, and was appointed Master Mechanic in 1887.

Sir H. Montagu Allan has been elected President of the St. Andrew's Society of Montreal, and the other officers include: D. Seath, of the Montreal Harbor Board, as Recording Secretary; Lord Strathcona, R. B. Angus, and D. McNicoll, of the C.P.R. directorate, as members of the finance committee.

W. G. Ross, ex-Managing Director, Montreal Street Ry., and H. J. Fuller, President, Canadian Fairbanks-Morse Co., have been elected members of an advisory committee to represent the Canadian bondholders of the Amalgamated Asbestos Co., a re-organization of the finances of which is necessary.

Sir William H. White, director, Grand Trunk Ry., who has been touring the G.T.R. system, prior to sailing from New York, for England, recently, was presented with the John Fritz medal for long and honorable service in the engineering profession. He was for several years Chief Architect of the British navy.

Robt. Hobson, Vice President and Managing Director, Steel Company of Canada, Hamilton, Ont., has been elected a director of the American Iron and Steel Institute for three years. The other Canadian director is T. J. Drummond, of Drummond McCall and Co., Montreal, and President, Lake Superior Corporation.

C. R. Stovel, who was engaged on survey work on the C.P.R. in its early stages and for some years latterly was Claims and Right of Way Agent for the Canadian Northern Railway, died Nov. 10 at St. Paul, Minn., where he has resided for the past year. He married a step sister of Sir William Mackenzie, President, C.N.R.

Probate of the will of the late Robt. Meighen, director, C.P.R., and President, Lake of the Woods Milling Co., has been granted in Ontario, on an estimated value of $2,483,783, of which $1,974,612 is represented by stock holdings. Subject to some minor bequests, the income of the entire estate is bequeathed to his widow.

A. MacDougall, who died at Montreal recently, aged 86, was at one time in G.T.R. service, and subsequently was chiefly interested in the organization and operation of the Montreal Grain Elevating Co., which he joined in 1860, eventually becoming Manager and later Managing Director, which latter position he held when the company went out of business in 1910.

A provincial branch of the St. John's Ambulance Association has been formed

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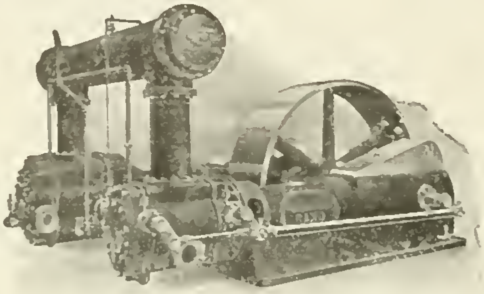

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for Quebec, with Montreal as headquarters. Lieut.-Col. L. R. Johnson, Assistant Superintendent Motive Power, C.P.R., is a member of the local committee. The Honorary President of the Association in Canada is Sir Thos. G. Shaughnessy, K.C.V.O., Knight of Grace of the Order of St. John of Jerusalem.

Sir William Whyte was the principal guest at a dinner in Winnipeg recently, at which there were present practically all the principal officials of the C.P.R. Western lines, and a number of former officials. George Bury, who has succeeded Sir William as Vice President, presided, and the presentation of a silver tray, silver tea set, and silver punch bowl was made by F. W. Peters, assistant to the Vice President.

Scott Griffin, Manager, Canadian Northern Steamships, London, Eng., and Mrs. Griffin returned to London from the country recently, and have taken a house at 22 Cumberland Place for the winter.

W. H. Flynn, railway contractor, who recently died at South Berwick, Me., was born at St. Andrews, N.B. He carried out considerable construction work on the Boston and Maine Rd., Pennsylvania Rd., and the Central Rd. of New Jersey.

J. H. Forrest, in charge of the Toronto Railway Co.'s accident department, was seriously injured, Nov. 11, owing to a ladder slipping and throwing him to the granolithic pavement while he was putting up a storm window on his house. His left heel and ankle were broken, and he was severely bruised. He was taken to the General Hospital, and after five days there, was removed to his house. He will probably be laid up for several weeks.

S. H. Graves, of Chicago, Ill., President, White Pass and Yukon Ry., was found dead in bed at the Aylmer Apartments, Ottawa, Nov. 13. He was in the city on business with the Board of Railway Commissioners, arising out of the recent valuation of the line by the Commissioners' staff, made in order to enable a decision to be reached as to freight rates on the line. Heart failure was certified as the cause of death, and the body was taken to Chicago for burial.

The fund of $1,000,000 which has been raised recently for McGill University, Montreal, includes the following contributions:—Robt. Reford, of the Robt. Reford Co., Ltd., $100,000; R. B. Angus, Director, C.P.R., $50,000; E. A. Robert, President, Montreal Street Ry., $30,000; M. L. Hersey, Consulting Chemist, C.P.R., $30,000; N. Curry, President, Canadian Car & Foundry Co., $25,000; G. E. Drummond, of Drummond McCall & Co., $25,000; Reid Bros., of the Newfoundland Ry., $10,000.

The body of R. S. Lewis, Canadian Passenger Agent, Lehigh Valley Rd., Toronto, was found in Lake Ontario, at Wilson, N.Y., a few miles east of the mouth of the Niagara River, Nov. 25. The deceased, who was about 70 years old, had represented the L.V.R. in Toronto for many years. He had been staying at the Niagara House, Niagara-on-the-Lake, under an assumed name for a week or so before his death, and probably committed suicide, as he had been despondent for some time owing to ill health.

James Waugh, whose appointment as Commercial Agent, G.T.R., Omaha, Neb., was announced in our last issue, entered G.T.R. service in 1891 as clerk in the Commercial Express Line office at Milwaukee, Wisc., since when he has been, from 1894 to 1900, Soliciting Freight Agent, same line, Chicago, Ill.; 1900 to July 1, 1905, Travelling Freight Agent, same line, Detroit, Mich.; July 1, 1905, to July, 1908, Michigan State Agent, Reading Despatch Line, Detroit, Mich.; July, 1908, to Oct. 31, 1911, Travelling Freight Agent, G.T.R., Philadelphia, Pa.

R. J. S. Weatherston, whose appointment as Division Freight Agent, G.T.R., Stratford, Ont., was announced in our last issue, entered G.T.R. service, July 4, 1893, since when he has been, to Jan. 1, 1902, in Transportation Department; Jan. 1, 1902, to July 18, 1906, in various positions in the Traffic Department, Toronto; July 18, 1906, to Jan. 10, 1907, chief clerk, Division Freight Agent's office, Ottawa, Ont.; Jan. 10, 1907, to Oct., 1911, chief clerk, Division Freight Agent's office, Hamilton, Ont.

H. H. Hamill, who has been appointed Travelling Freight Agent, G.T.R., New York City, was born at Somerville, Mass., Apr. 6, 1874, and entered transportation service with the Johnson Steamship Line, Boston, Mass., in 1893, and from Feb. 1, 1900, to June 1, 1906, was city solicitor, National Despatch Line, Boston, Mass.; June 1, 1906, to Apr. 1, 1910, Travelling Agent, National Despatch-Great Eastern Line, Boston, Mass.; Apr. 1, 1910 to Nov. 1, 1911, Soliciting Freight Agent, G.T.R., New York City.

G. T. Pettigrew, whose appointment as Division Freight Agent, G.T.R., Montreal, was announced in our last issue, entered G.T.R. service, May 1, 1888, since when he has been, to Oct. 1, 1895, apprentice and clerk in General Freight Agent's office; Oct. 1, 1895, to Jan. 1, 1898, clerk in Foreign Freight Department; Jan. 1, 1898, to Jan. 1, 1899, clerk in General Freight Agent's office; Jan. 1, 1899, to Jan. 1, 1903, clerk in Foreign Freight Department; Jan. 1, 1903, to July 22, 1907, chief clerk, same department; July 22, 1907, to Oct., 1911, Division Freight Agent, Stratford, Ont.

R. W. Leonard, M.Can.Soc.C.E.,
Chairman, National Transcontinental Railway Commission.

G. A. Balfour, who has been appointed Assistant to the General Superintendent, Eastern Division, C.P.R., Montreal, was born in Elderslie tp., Ont., Dec. 5, 1867, and entered C.P.R. service July 21, 1889, since when he has been, to Oct., 1889, stenographer to Accountant, Montreal; Oct., 1889, to Dec., 1893, private secretary to General Superintendent, Montreal; Dec., 1893, to Nov. 30, 1897, in charge of Timekeeping Department, Montreal; Dec. 1, 1897, to June 17, 1900, assistant chief clerk, General Superintendent's Office, Montreal; June 18, 1900, to Oct. 1, 1911, chief clerk, General Superintendent's office, Montreal.

H. A. Pepler, whose appointment as District Master Mechanic, C.P.R., Montreal, was announced in our last issue, was born at Richmond, Que., June 25, 1873, and entered railway service Aug. 28, 1888, since when he has been, to Oct. 1, 1889, call boy, G.T.R., Richmond, Que.; Oct. 1, 1889, to Apr., 1893, apprentice, G.T.R., Richmond, Que.; Apr., 1893, to Oct., 1898, in erecting shops, G.T.R., Point St. Charles, Montreal, as apprentice and machinist; Oct., 1898, to Feb., 1903, charge hand, Windsor St. roundhouse, C.P.R., Montreal; Feb., 1903, to Aug., 1904, Locomotive Foreman, C.P.R., Megantic, Que.; Aug., 1904, to Oct. 16, 1911, Locomotive Foreman, C.P.R., Farnham, Que.

F. J. Watson, whose appointment as Assistant General Freight Agent, G.T.R., Montreal, was announced in our last issue, was born at Toronto, Jan. 12, 1866, and entered railway service, Mar. 1, 1884, since when he has been, to 1885, secretary to Assistant General Freight Agent, Northern and Northwestern Ry.; 1885 to 1888, secretary to General Freight Agent, same road; 1889 to 1891, waybill inspector, G.T.R.; 1891 to May 1, 1892, Travelling Freight Agent, Western Division, G.T.R.; May 1, 1892, to July 1, 1896, Travelling Freight Agent, Eastern Division, G.T.R., Montreal; July 1, 1896, to Aug. 1, 1897, chief clerk, Freight Department, Southern Division, G.T.R., Hamilton, Ont.; Aug. 1 to Dec. 6, 1897, Division Freight Agent, G.T.R., Stratford, Ont.; Dec. 6, 1897, to Oct., 1911, Division Freight Agent, G.T.R., Montreal.

S. S. Russell, who has been appointed Superintendent of Car Service, Central Vermont Ry., St. Albans, Vt., was born at Rednersville, Ont., Oct. 18, 1874, and entered railway service in 1891, since when he has been, to 1892, in office of Assistant Superintendent, G.T.R., Belleville, Ont.; 1892 to Aug., 1896, in Superintendent's office, G.T.R., Toronto; Aug., 1896, to Mar., 1898, secretary to Superintendent, G.T.R., Toronto; Mar., 1898, to June, 1902, chief clerk to Joint Superintendent, G.T.R. and Wabash Rd., St. Thomas, Ont.; June to Dec., 1902, private secretary to General Manager, Central Vermont Ry., St. Albans, Vt.; Jan., 1903, to Dec., 1904, chief clerk to Superintendent of Transportation, Central Vermont Ry., St. Albans, Vt.; Dec., 1904, to Nov., 1911, secretary to General Manager, Central Vermont Ry., St. Albans, Vt.

Sir Donald D. Mann, Vice President, Canadian Northern Ry., while travelling from Montreal to Toronto in his private car, Oct. 26, was taken ill suddenly, suffering severe pain similar to several attacks which he had had on previous occasions, and which were attributed to acute indigestion. Physicians who were called in consultation after his arrival in Toronto diagnosed the cause as gall stones, and he was operated on at his house, Fallingbrook, Toronto, on Oct. 30 by Dr. Starr, Drs. A. McPhedran and W. Goldie assisting. Lady Mann and her son were in Europe, where they had been for several months, and Sir Wm. Mackenzie was in Winnipeg. D. B. Hanna, Third Vice President, C.N.R., was at Fallingbrook during the operation. Lady Mann returned to Toronto Nov. 10. Sir Donald is convalescing satisfactorily and is expected to be out early in December.

J. R. Cameron, who has been appointed Assistant General Manager, Canadian Northern Ry., Winnipeg, was born at Truro, N.S., Nov. 5, 1865, and entered railway service, May, 1882, since when he has been, to Apr., 1883, brakeman and baggage man, C.P.R., Winnipeg; Apr., 1883, to Mar., 1886, conductor, C.P.R., Winnipeg; Apr., 1886, to Apr.,

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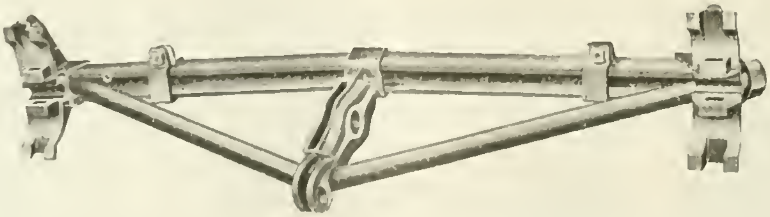

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1887, conductor, Manitoba and North Western Ry., Winnipeg; Apr., 1887, to Oct., 1898, conductor, Northern Pacific Ry. in Montana; Oct., 1898, to June, 1901, Trainmaster, Northern Pacific Ry., Grand Forks, E.C., with jurisdiction over the company's lines in Manitoba; June, 1901, to Aug., 1904, conductor, Canadian Northern Ry., Winnipeg; Aug., 1904, to Dec., 1905, Superintendent, Canadian Northern Ry., Kamsack, Sask.; Dec., 1905, to Jan., 1908, Superintendent, District 1, C.N.R., Port Arthur, Ont.; Jan., 1908, to Nov., 1911, General Superintendant, C.N.R., Winnipeg.

C. W. Spencer, who died at Montreal, Nov. 23, following a stroke of paralysis on Nov. 20, was born at Kemptville, Ont., Oct. 31, 1857, and entered railway service, May 7, 1871, since when he was, to 1874, operator and clerk, Canada Central Ry., and Brockville and Ottawa Ry., Ottawa, Ont.; 1874 to May, 1880, assistant agent, same road, Ottawa; May, 1880, to Jan., 1881, assistant train dispatcher, same road, Jan. to Apr. 12, 1881, when the Canada Central Ry. was taken over by the C.P.R., Chief Dispatcher, same road; Apr. 12 to May 11, 1881, Chief Dispatcher, C.P.R.; May 11 to June 29, 1881, Traffic Superintendent, same road; June 29, 1881, to Aug. 1, 1884, Assistant Superintendent, C.P.R.; Aug. 1, 1884, to Sept. 25, 1887, Assistant General Superintendent, CP.R.; Sept. 25, 1887, to Apr. 30, 1903, General Superintendent, Eastern Division, C.P.R., Montreal; Apr. 30, 1903, to Aug. 31, 1905, General Superintendent of Transportation, Eastern Lines, C.P.R., Montreal; Sept. 1, 1905, to Dec., 1907, General Manager, Mackenzie, Mann and Co.'s Eastern Lines, Montreal.

A. Wilcox, who has been appointed General Superintendent, Western Division, C.N.R., Edmonton, Alta., was born at Kincardine, Ont., Jan. 2, 1865, and entered railway service in 1881, since when he has been, to 1883, successively, operator, ticket and freight clerk, Toronto, Grey and Bruce Ry., Owen Sound, Ont.; 1883 to 1887, operator and agent at various points, and relieving dispatcher, C.P.R., Winnipeg; 1887 to 1890. train dispatcher, C.P.R., Moose Jaw, Sask.; 1903, Chief Dispatche., C.P.R., Cranbrook, B.C.; July, 1903, to July, 1904. Chief Dispatcher, Canadian Northern Ry., Port Arthur, Ont.; July, 1904, to Jan., 1908, Superintendent, District 2. C.N.R., Winnipeg; Jan., 1908, to May, 1909, Superintendent, District 1, C.N.R., Port Arthur, Ont.; May to Nov., 1909, Superintendent, District 3, C.N.R., Dauphin, Man.: Nov., 1909, to Nov. 1, 1911, Superintendent, District 1, C.N.R., Port Arthur. Ont.; Nov. 1 to Dec. 1, 1911, Assistant General Superintendent, C.N.R., Winnipeg.

W. B. Scott, who has been appointed Vice President and General Manager, Union Pacific Rd., Omaha, Neb., was born at Hamilton, Ont., Aug., 1862, and entered railway service in 1873, as messenger boy, G.T.R., Guelph, Ont. Since then he has been consecutively, freight clerk, G.T.R., Guelph, Ont., telegraph operator, same road, Toronto, train dispatcher, C.P.R., Winnipeg, Chief Dispatcher and Trainmaster on construction. Great Northern Ry., between Minot, N.D., and Helena, Mont., and Superintendent of Telegraphs. Chicago Great Western Rd. From 1890 to 1897, he was Trainmaster, Atchison, Topeka and Santa Fe Ry., Chicago, Ill.; 1897 to 1902, Superintendent, Gulf, Colorado and Santa Fe Ry., Temple, Tex.; 1902 to 1904, Superintendent, Galveston, Harrisburg and San Antonio Ry., San Antonio, Tex.; 1904 to 1905, General Superintendent, Houston and Texas Central Rd., and in 1905 was appointed Director of Maintenance and Operation, Harriman Lines, Chicago., Ill.

R. W. Leonard, M. Can. Soc. C.E., whose appointment as Chairman, National Transcontinental Railway Commission, was announced in our last issue, and whose portrait appears on page 1151, was born at Brantford, Ont., in 1860. He graduated from the Royal Military College, Kingston, Ont., in 1883, obtaining a silver medal. From 1883 to 1885 he was engaged on surveys and construction for the C.P.R., in the Lake Superior District, and during 1885 served as a staff officer on transport in the Northwest Rebellion. In the autumn of the same year he was Resident Engineer, C.P.R., in Manitoba; 1886, engineer on surveys and construction, C.P.R., Ontario and Quebec Divisions; 1887 to 1890, Chief Engineer, Cumberland Ry. and Coal Co., Springhill, N.S.,; 1890 to 1906, consecutively, engineer, C.P.R., engineer in charge of construction of Niagagara Falls Park and River Ry. hydro-electric plant, contractor, Ottawa and Parry Sound Ry., Chief Engineer in charge of construction, C.P.R. Montreal-Ottawa line, Chief Engineer of surveys and construction in Quebec, St. Lawrence and Adirondack Ry., Consulting Engineer, surveys and construction, Rutland and Noyan Ry., engineer in charge of iron and nickel mining, Lake Superior Corporation, Chief Engineer of surveys and construction, Cape Breton Ry., Engineer in charge of Hamilton Cataract Power Co.'s hydro-electric plant, engineer in charge of construction of Kaministiquia Power Co.'s plant, and from 1906 to Oct., 1911, President, Coniagas Mines, Ltd., and Coniagas Reduction Co., Ltd. He is a member of the board of governors of Toronto University, Kingston School of Mining, Wycliffe College, Toronto, and Bishop Ridley College, St. Catharines, Ont., Vice President, Canadian Mining Institute, past Vice President, Canadian Society of Civil Engineers, member of the Council of the Institute of Mining and Metallurgy, London, Eng., member of the American Institute of Mining Engineers, past President, Royal Military College Club, Kingston, Ont.

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Central Vermont Railway Co's Annual Report.

The report for the year ended June 30, shows the following results,—

Gross receipts	$4,337,644.14
Operating expenses	3,256,260.79
Balance	$1,081,383.35
Taxes	146,763.23
	$ 934,620.12
Net debit from rentals	9,088.83
	$ 925,531.29
Outside operations, parlor cafe car service	6,611.43
	$ 932,142.72
Hire of equipment, debit balance	169,477.92
	$ 762,664.80
Interest on securities held by company	43,720.00
	$ 806,384.80
Fixed charges	716,133.35
Net result	$ 90,251.45

During the year, $27,864.20 was spent on new tracks, sidings and spurs, crossings, stations and ballasting, the amount being included in operating expenses. Eight stock cars, four flat cars, four construction cars and six cabooses were built at the St. Albans shops. An additional $21,654.08 was spent on improvements and charged to capital account. The balance sheet shows assets of $17,488,824.18; liabilities of $17,396,994.40, and a balance to profit and loss of $91,829.78.

Following are the officers and directors for the current year: Chairman of the Board, C. M. Hays; President, E. H. Fitzhugh; Vice President, C. W. Witters, St. Albans, Vt.; other directors, G. C. Jones, E. C. Smith, St. Albans, Vt.; W. S. Webb, Shelbourne, Vt.; J. W. Stewart, Middlebury, Vt.; J. W. McCullough, Bennington, Vt.; E. H. Baker, Boston, Mass.; S. E. Kilmer, E. L. Marston, New York; A. Tuttle, Fairhaven, Mass.; C. P. Smith, Burlington, Vt.; auditor, W. G. Crabbe; treasurer and clark, W. H. Chaffee.

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National Transcontinental Railway Construction, Etc.

A report given out at Ottawa, Nov. 1, set out that on Oct. 1, to which date the figures had all been received, track had been laid on 1,245 miles of the 1,845 miles between Moncton and Winnipeg. This track has been laid on different contracts and has not been connected. The report further states that owing to its inaccessibility, work has not been started on a section of 115 miles in the Abitibi country, for which Macdonnell and O'Brien are contractors. In connection with this report, J. T. Davis, one of the firm having the contract for the line from the Quebec Bridge location towards the New Brunswick boundary, stated recently that the work would be completed during 1912.

The shops at Transcona, Man., are expected to be opened early in January, 1912. At present only the motive power and car repair shops have been built, and work is in progress on the other shops.

R. W. Leonard, the newly appointed Chairman of the Commission, entered upon his duties Oct. 26, and after attending to office details, began on Nov. 4 the inspection of the work under construction. The first portion of the line visited was the district under the charge of A. E. Doucet. He completed the inspection of the finished line from Quebec towards Weymontachene, and on Nov. 14, left Ottawa for Winnipeg to inspect the work in progress there, the completed line to Superior Jct., and the work easterly from that point. (Nov., pg. 1059.)

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Grand Trunk Pacific Railway Construction, Etc.

After considerable discussion the Fort William, Ont., city council, on Oct. 31, made a considerable number of amendments in the agreement proposed by the company covering the building of a road, and car lines, etc., on Mission Island. The amended agreement is being considered by the company. A new freight shed has been completed on the Mission terminals, Fort William. It will be used for freight storage during this winter, but it is intended for through lake and rail traffic.

The building of the viaduct south of Main St., Winnipeg, for the entrance of trains into the Fort Garry station is being pushed forward. It is expected that it will be completed early in the new year.

The mayor of Brandon, Man., in a recent interview with E. J. Chamberlin, Vice President and General Manager, was told that until difficulties which have arisen in connection with the crossing of the C.P.R. east of Chater are adjusted, the company will not be able to do any grading to within at least three miles of the C.P.R. on the north side.

It is stated in Regina that the company's line to the International boundary, about 130 miles, will be completed, and put in operation by the end of the year.

The grading on the line from Young to Prince Albert, of which the last 45 miles was put under contract this season, will not be completed this year.

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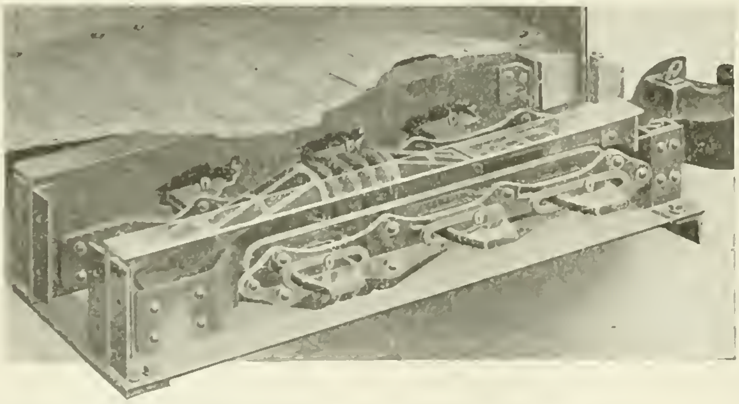

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The Company has General Stores at Winnipeg, Vancouver, Calgary, Edmonton, and other places where purchasers will find the best of goods at moderate prices.

Transportation by the Company's Steamers, brigades of boats and canoes throughout the Territories not traversed by railways.

Full information at the Company's Offices, Winnipeg, or 1 Lime St., London, E.C.

The company is arranging for the building of a large bridge, at the end of the present grade, and the last six or seven miles of grading will be completed when the bridge is built.

The Board of Railway Commissioners has approved revised location plans for the following lines in Alberta:—from sec. 33, tp. 23, range 29 west of 4th meridian to north line of sec. 1, tp. 24, range 1, west of 5th meridian, mileage 196.81 to 193.44; from sec. 9, tp. 47, range 1, to sec. 23, tp. 45, range 4, west of 6th meridian, mileage 99.70 to 129; and from sec. 1, to sec. 8, tp. 45, range 1, west of 6th meridian, mileage 110.57 to 113.53.

J. W. Stewart, of Foley, Welch and Stewart, returned to Vancouver, Nov. 3, from a trip of inspection over the company's contracts on the line between Wolf Creek, Alta., and the coast. He stated that track has been laid across the summit of the Rocky Mountains in the Yellowhead Pass and that it is expected Tete Jaune Cache will be reached early in Dec. The right of way along the south fork of the Fraser River has been cleared to 30 miles west of Tete Jaune Cache, and a good deal of clearing had been done in the vicinity of Fort George. The present contract extends to Aldermere, from which point the right of way had been graded for 60 miles easterly. Work will be continued all winter. West of Aldermere, the work is also being proceeded with, and with the completion of the Kitselas tunnels, early in Dec., the company will be enabled to lay track easterly to the first crossing of the Skeena River, a few miles below Hazleton, B.C.

The management has still under consideration the building of a branch from Fort George to Vancouver, B.C. The company's steamship wharf at Vancouver was completed Nov. 8, and on the following day a communication was received by the Board of Trade from C. H. Nicholson, Manager, G.T.P. Coast Steamship Co., asking for its aid in some negotiations with the city council, in connection with the extension of the company's steamship terminals.

We are officially advised that F. W. Bergman, Manager of the Chateau Laurier, Ottawa, left Montreal, Nov. 4, for Prince Rupert, B.C., for the purpose of reporting upon hotel matters there. Pending receipt of his report, nothing definite has been decided as to the erection of a new hotel there.

In an interview at Victoria, Nov. 13, F. W. Bergman is reported to have said that the company is about to start the building of a big hotel at Prince Rupert, and that the object of his visit to the coast is to arrange with a local architect as to plans. The building will have 250 rooms, and construction will be started in the spring. The company contemplated building eight hotels in all. Of these the first is the G.T.R. hotel at Ottawa, now approaching completion; construction has been started on another at Winnipeg; the site of a third has been located at the Yellowhead Pass, and the location for the other hotels is under consideration. Nothing has been settled about the building of one at Victoria. (Nov., pg. 1059.)

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Quebec Central Ry.—In connection with the lease of the line, application is being made by the C.P.R. to the Dominion Parliament to authorize it to enter into an agreement with the Q.C.R. Co. for any of the purposes specified in sec. 361 of the Railway Act.

The G.T. Pacific Ry. Co. is seeking to obtain an injunction in the British Columbia courts to restrain the use of the words "Grand Trunk" or "Grand Trunk Pacific" in the title of the Grand Trunk Pacific Transfer Co., of Vancouver.

TRADE AND SUPPLY NOTES.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers to distinctly understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

The Dominion Iron and Steel Co.'s output for Sept. comprised,—rails 16,975 tons, rods 3,065 tons, blooms 23,705 tons, steel ingots 27,290 tons, pig iron 22,390 tons, coke 39,290 tons.

The National Boiler Washing Co., Ltd., Montreal, has obtained the contract for the entire heating of the Canadian Steel Foundries, Ltd., new works at Longue Pointe, Montreal.

The Steel Co. of Canada will, it is said, made a very large addition to its Hamilton, Ont., plant next year, providing for rod, bloom and billet mills and two 60-ton continuous open hearth furnaces.

Price Bros. & Co., pulp manufacturers, Jonquiere, Que., are having installed eight 90 in. return tubular boilers of rated capacity 300 h.p. each, by the Robb Engineering Co., Amherst, Nova Scotia.

The International P.-A.-Y.-E. Tramcar Co. has been incorporated under the Dominion Companies Act, with a capital of $3,750,000 and office at Montreal, for the purpose of building cars under the p.-a.-y.-e. patents, and various other incidental purposes. The provisional directors are:—G. V. Cousins, E. G. T. Penny, P. F. Brown, A. H. Elder, and S. T. Mains, Montreal.

E. C. Brown, Manager, Foreign Dept., Dearborn Drug and Chemical Works, has returned to Chicago after spending the last two years in the Orient. He established a branch office in the Philippines and agencies covering Japan, Formosa, Korea and China. Several of the principal railways in China and the Philippines are using the Dearborn water treatment, and tests are being made on the Japanese lines.

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Railway and Allied Associations, Clubs, Etc.

The names of persons given below are those of the secretaries.

Canadian Car Service Bureau, J. E. Duval, 401 St. Nicholas Building, Montreal.

Canadian Freight Association, T Marshall, Union Station, Toronto.

Canadian Freight Association, (Western Lines), W. E. Campbell, 101 Bon Accord Building, Winnipeg.

Canadian Railway Club, J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday each month, 8.30 p.m., except June, July and August.

Canadian Society of Civil Engineers, C. H. McLeod, 413 Dorchester St., west, Montreal.

Canadian Street Railway Association, Acton Burrows, 70 Bond Street, Toronto.

Canadian Ticket Agents' Association, E. de la Hooke, London, Ont.

Central Railway and Engineering Club of Canada, C. L. Worth, 409 Union Station, Toronto. Meetings at Toronto 3rd Tuesday each month, except June, July and August.

Eastern Canadian Passenger Association, G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal, R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto, R. B. Wolsey, 94 King St. west, Toronto.

Nova Scotia Society of Engineers, J Lorn Allan, Halifax and Eastern Ry., Dartmouth, N.S.

Quebec Transportation Club, J. S. Blanchet, Quebec.

Western Canada Railway Club, W. H. Rosevear, 25½ Princess St., Winnipeg. Meetings at Winnipeg 2nd Monday each month, except June, July and August.

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C.P.R. Spur Line near Toronto.—It is reported that the company will build a spur line of about 4½ miles from the Toronto-Windsor line 7½ miles west of Toronto to a junction with the Toronto-Owen Sound line.

G.T.R. International Bridge.—It is reported that the international bridge between Bridgeburg, Ont., and Buffalo, N.Y., will be widened at an early date, so as to permit a second track to be laid. The cost is reported at being estimated at $3,000,000.

Railway Contracts with Cartage Agencies.—The Board of Railway Commissioners issued an order, Nov. 15, requiring railway companies to file within 60 days copies of all existing contracts with their cartage agents for the cartage of freight traffic at so-called cartage points, and thereafter to file from time to time any new contracts or modifications of existing ones, or of cartage limits.

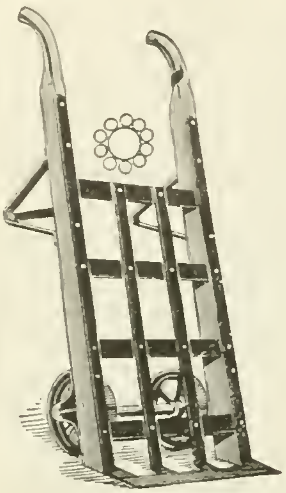
G.T.R. New England Projects.—In connection with the project for the extension of the Southern New England Ry. to Providence, R.I., under the arrangement of the Central Vermont Ry., which is controlled by the G.T.R., the merchants of Boston, Mass., and the State Legislature have expressed their desire that the company should extend its lines into Boston. E. H. Fitzhugh, President, C.V.R., recently went to Boston for consultation with the various interests there, and it is said that an announcement will be made at an early date of the route by which the G.T.R. lines will secure a direct entrance into Boston. The nature of the negotiations in progress has not been made public.

The Board of Railway Commissioners has removed its offices from 66 Queen St., Ottawa, to the new union station building erected by the G.T.R.

During September three railway employes were killed, and four injured, in the course of their work in connection with Canadian railways. Of the fatalities, two were due to being run over and one to falling through the hopper door of a dump car.

The presentation of a silver tray to W. Jackson at the Canadian Ticket Agents Association's annual meeting at Sault Ste. Marie in October, in commemoration of his attendance at 25 consecutive annual meetings as mentioned in our November number, was participated in by members of the Association, as well as by the guests present. To emphasize the general nature of the tribute, C. A. Cairns, G.P. and T.A., Chicago and Northwestern Ry., spoke on behalf of the donors, the President of the Association, J. F. Dolan, making the presentation.

An Alberta court decided, Nov. 7, that the Provincial Government was entitled to the $7,400,000, proceeds of the issue of bonds of the Alberta and Great Waterways Ry. Co., guaranteed by the province, the charter of which company was afterwards cancelled. The money was deposited in the Royal, Union and Merchants banks, the last two paying the amounts held by them into court. The Royal Bank was directed to pay over the $6,000,000 it holds, with 5 per cent. interest. An appeal has been entered, which will not be heard until March, 1912.



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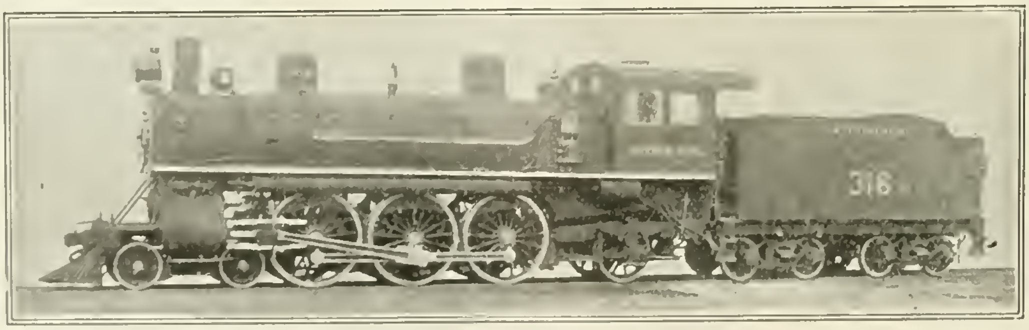

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TRANSPORTATION APPOINTMENTS.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

Canadian Northern Ry.—Consequent on the rapid growth of the system the company's lines have been divided into two grand divisions, one including districts 1, 2 and 3, with headquarters at Winnipeg, and the other districts 4, 5 and 6, with headquarters at Edmonton, Alta. The dividing point of the two grand divisions on the main line is Humboolt, Sask.

J. R. Cameron, heretofore General Superintendent all lines, has been appointed Assistant General Manager. Office, Winnipeg.

A. E. Warren, heretofore Superintendent District 2, Winnipeg, has been appointed General Superintendent, Central Division. Office, Winnipeg.

A. Wilcox, Superintendent, District 1, Port Arthur, Ont., was on Nov. 1, appointed Assistant General Superintendent, with jurisdiction over matter pertaining to transportation, and with office at Winnipeg. On Dec. 1 he was appointed General Superintendent, Western Division, with office at Edmonton, Alta.

J. E. Nelson, heretofore Trainmaster, Rainy River, Ont., has been appointed Superintendent, District 1, Port Arthur, Ont., vice A. Wilcox, promoted.

M. B. Murphy, heretofore Superintendent, Duluth Rainy Lake & Winnipeg Ry., Virginia, Minn., has been appointed Superintendent, District 2, vice A. E. Warrent, promoted. Office, Winnipeg.

W. A. Kirkpatrick, heretofore Operating Inspector, has been appointed acting Assistant Superintendent in charge of Winnipeg Terminals.

E. Durrell, heretofore conductor, has been appointed Trainmaster at Dauphin, Man., vice G. W. Chapman, transferred.

Canadian Pacific Ry.—G. M. Bosworth, Vice President in charge of the company's traffic and ocean steamship lines, has also been given jurisdiction over the telegraph, hotel and sleeping, dining and parlor cars departments, and chiefs of these departments now report to him.

H. G. Jones, Assistant Architect, Montreal, has resigned. We are officially advised that no appointment will be made to succeed him.

W. A. Cowan, heretofore Resident Engineer, Farnham, Que., has been appointed Inspecting Engineer, reporting to the Assistant Chief Engineer, Montreal.

H. Campbell Oswald has been appointed Assistant Secretary of the Company. Office, Montreal.

A. R. G. Heward, who has been absent from business for some time on account of ill health, retains the position of Assistant Secretary, also.

H. T. Ruhl, heretofore Resident Engineer, Sudbury, Ont., has been appointed Resident Engineer, District 1, Eatsern Division, vice W. A. Cowan, promoted. Office, Farnham, Que.

J. D. Wells, heretofore locomotive engineer, Farnham, Que., has been appointed acting District Master Mechanic, District 1, Eastern Division, vice A. W. Horsey, transferred. Office, Farnham, Que.

H. A. Asty, heretofore Assistant Foreman at Ottawa, Ont., has been appointed Locomotive Foreman at Farnham, Que., vice H. A. Pepler, appointed District Master Mechanic, District 2 and Montreal, as announced in our last issue.

With reference to the re-arrangement of territory of the district master mechanics of the Eastern Division, as announced in our last issue, there are now four, instead of three, as heretofore, their names, districts and locations being as follows:—J. D. Wells, acting, District 1, Farnham, Que., vice A. W. Horsey, absent on sick leave; H. A. Pepler, District 2 and Montreal Terminals, Montreal; W. Borbridge, District 3, Montreal; J. M. Burke, District 4, Ottawa, Ont.

The following ticket agents have been appointed: T. C. Ivory, Omemee, Ont.; A. J. Leitch, Dutton, Ont.; McKenzie and Co., Thedford, Ont.; W. S. Beamish, Bothwell, Ont., vice E. Humphries; R. Scott, Clifford, Ont.; W. J. Jones, Parry Sound, Ont., vice W. B. W. Armstrong, resigned.

A. E. Stewart, heretofore locomotive engineer, has been appointed acting District Master Mechanic, London, Ont., vice John Burns, appointed Master Mechanic, Eastern Division, Montreal. We are advised that it is expected that A. W. Horsey, District Master Mechanic, District 1, absent on sick leave, Eastern Division, Farnham, Que., will be appointed District Master Mechanic at London, Ont.

A. Sturrock has been appointed Shop Foreman at Fort William, Ont.

D. Cossar has been appointed Shop Foreman at Kenora, Ont.

T. S. Bertram has been appointed Night Shop Foreman at Kenora, Ont.

As announced in our last issue, C. H. Temple, formerly Assistant Superintendent of Motive Power, Western Lines, has been appointed Superintendent of Motive Power, Western Lines, in consequence of the appointment of Grant Hall as Assistant General Manager, Western Lines, Mr. Temple has charge of the Car Department as well, though this was not stated in the circular. G. H. Eaton continues as Assistant Master Car Bulider.

W. E. Allison, heretofore chief clerk, General Baggage Agent's office, Montreal has been appointed General Travelling Baggage Agent. Office, Winnipeg.

James Jones, heretofore Freight Claims Agent, Vancouver, B.C., has been appointed Freight Claims Agent, Moose Jaw, Sask., vice James Black, transferred to Vancouver.

J. W .Keppel, hertofore leading fitter, has been appointed Night Foreman at Sutherland, Sask.

R. B. Bennett, K.C., M.P., has resigned as the company's counsel for Alberta.

L. Charlton has been appointed Travelling Freight Agent, Alberta Division. Headquarters, Calgary. C. S. Morse is also Travelling Freight Agent, with headquarters at Lethbridge.

Joseph Little has been appointed Night Foreman at Medicine Hat, Alta.

A Martin has been appointed Night Foreman at Calgary, Alta.

T. Riordan has been appointed Roadmaster, Red Deer subdivision, Alberta Division, vice M. Newlands, transferred to MacLeod.

James Boyes has been appointed Shop Foreman at Cranbrook, B.C.

James Black, heretofore Freight Claims Agent, Moose Jaw, Sask., has been appointed Freight Claims Agent, Vancouver, B.C., vice James Jones, transferred to Moose Jaw.

Consequent upon W. J. Pugsley leaving to take a position in the company's service in Canada, on account of health, the position of Passenger Agent at Liverpool, Eng., has been abolished. All correspondence for the Liverpool Passenger Departmnent, should be addressed to F. W. Forster, Agent, Royal Liver Bldg., Liverpool.

Central Vermont Ry.—S. S. Russell, heretofore secretary to General Manager, has been appointed Superintendent of Car Service. Office, St. Albans, Vt.

A. C. West, heretofore Master Mechanic, Quebec, Montreal and Southern Ry., has been appointed Roundhouse Foreman, C.V.R., at St. Albans, Vt., vice R. G. Gilbride, resigned to enter G.T.P.R. service.

W. J. Hamilton, heretofore chargeman, St. Albans shops, has been appointed Roundhouse Foreman, Montpelier Jct., vice H. J. Hague, transferred.

R. Ross, Boiler Foreman, St. Albans shops, has resigned to return to private business.

H. J. Hague, heretofore Roundhouse Foreman at Montpelier Jct., has been appointed Roundhouse Foreman at White River Jct., vice T. Palos, resigned to enter private business.

Grand Trunk Pacific Ry.—Niblock & Tull, Grain Exchange Building, Calgary, Alta., have been appointed city ticket agents, G.T.P.R. D. B. Niblock, of this firm, was formerly C.P.R. Ticket Agent at Calgary.

The following agents have been appointed:—Pope, Man., J. E. Lalonde; Uno, Man., A. W. Gould; Gerald, Sask., H. R. Adams.

Grand Trunk Ry.—C. R. Moore, heretofore chief clerk to the Superintendent, Middle Division, Toronto, has been appointed chief clerk to Vice President Kelley, Montreal.

J. A. Murphy has been appointed chief clerk to the Superintendent, Middle Division, Toronto, vice C. R. Moore, promoted.

T. Short, heretofore stationmaster at Stratford, Ont., has been appointed stationmaster at Hamilton, Ont., vice J. Carrol, resigned.

F. Baker, heretofore conductor, has been appointed stationmaster at Stratford, Ont., vice T. Short, transferred.

H. H. Hamill, heretofore Soliciting Freight Agent, New York City, has been appointed Travelling Freight Agent, there, vice S. E. Dewey, appointed Commercial Agent, Pittsburgh, Pa.

T. J. Brown has been appointed Chief Train Dispatcher, Durand, Mich., vice H. J Tobin, resigned

The title of Second Assistant General Freight Agent, heretofore held by R. L. Burnap, recently appointed Assistant Freight Traffic Manager, Chicago, Ill., as announced in our last issue, has been abolished.

T. A. Chappell has been appointed Travelling Freight Agent, Philadelphia, Pa., vice Jas. Waugh, appointed Commemrcial Agent, Omaha, Neb., as announced in our last issue.

The following agents have been appointed:—St. Annes, Que., S. A. Wickens; Emsdale, Ont., G. F. Meyers; Milton, Ont., B. Sine; Grimsby, Ont., S. B. Bradley; Thorold, Ont., W. G. Baker; Harley, Ont., R. E. Strain; Fergus, Ont., S. Young; Lucknow, Ont., O. A. Martin; Welland, Ont., J. McMillan; Carlsbad Springs, Ont., J. L. Foster; Barry's Bay, Ont., M. G. Billings; Rainy Lake, Ont., H. D. Reynolds; the stations at Holland Landing, Ont., J. L. O'Brien, acting agent, and at Wyebridge, Ont., G. McMann, acting agent, have been closed. The following outside agents have been appointed:—Hamilton, Ont., C. R. Morgan, acting city passenger and ticket agent; St. Marys, Ont., L. Spearin.

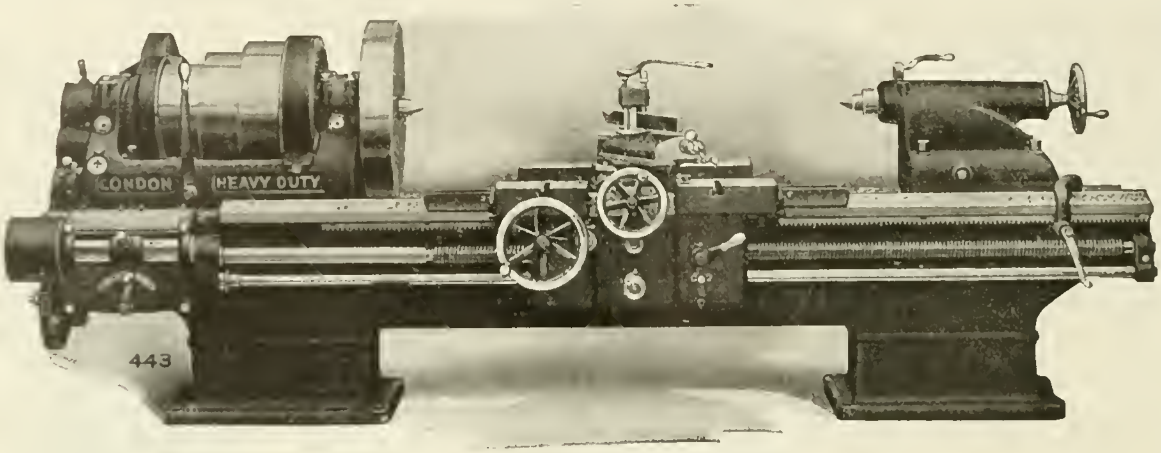
Great Northern Ry.—V. Kistler, heretofore District Freight and Passenger Agent, Grand Forks, B.C., has been appointed Contracting Freight Agent, Portland, Ore.

Kaslo and Slocan Ry.—The officials of this company, as recently re-organized, are:—President, James Anderson; Vice President, H. Giegerick; Manager, J. L. Retallack; Secretary, W. H. Burgess.

Maine Central Rd.—A. P. Foss, heretofore Auditor of Disbursements, has been appointed Assistant Comptroller. Office, Portland, Me.

A. J. Raynes has been appointed Auditor of Disbursements, vice A. P. Foss, promoted. Office, Portland, Me.

National Transcontinental Ry.—A. G. McFarlane, heretofore Inspecting En-



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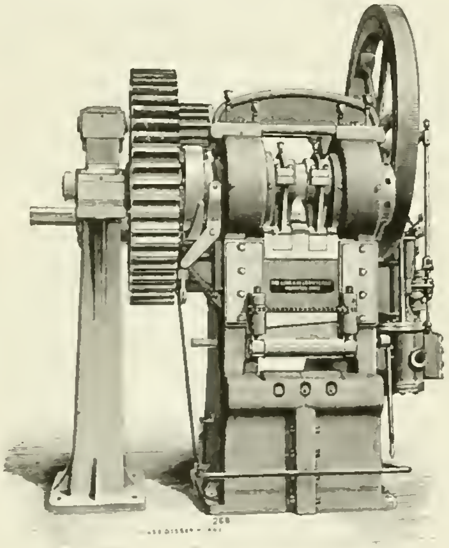

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PROPRIETORS

ARTHUR M. GRANT,
MANAGER

gineer, has been appointed acting District Engineer, District F, Winnipeg, vice S. R. Poulin, deceased.

New York Central Lines. — J. F. Deems, General Superintendent of Motive Power, Rolling Stock Machinery, has resigned to become President, Ward Equipment Co., New York. The position of General Superintendent of Motive Power has been abolished, each Superintendent of Motive Power and Rolling Stock has full charge of his department and reports to his General Manager.

Pere Marquette Rd.—W. L. Kellog, heretofore Superintendent of Motive Power, Cincinnati, Hamilton and Dayton Ry., is reported to have been appointed Superintendent of Motive Power, P.M.R., Detroit, Mich.

Railway Rolling Stock Notes.

The C.P.R. is in the market for ten sleeping cars.

F. H. Hopkins and Co. have ordered one Lidgerwood flat car from the Canadian Car and Foundry Co., Montreal.

The Grand Trunk Ry. has ordered 2,000 steel underframe box cars, 30 tons capacity, from the Canadian Car and Foundry Co., Montreal.

The Algoma Steel Co. has ordered 15 all steel flat cars, 40 tons capacity, and ten special coke transfer cars, from the Canadian Car and Foundry Co., Montreal.

The 2,000 steel underframe box cars which the G.T.R. has ordered from the Canadian Car and Foundry Co., Montreal, will be mainly similar to the 1,000 mentioned in our July issue.

The Intercolonial Ry. has ordered 52 box cars from the Canadian Car and Foundry Co., Montreal; five first class passenger cars from the Preston Car and Coach Co., Preston, Ont., three vans from its Moncton shops, and nine box cars.

The G.T.P.R. has received 12 consolidation and two switching locomotives from the Montreal Locomotive Works, and six colonist cars, nos. 3032 to 3037, and four mail and express cars, nos. 106 to 109, from the Canadian Car and Foundry Co., Montreal.

The Algoma Central and Hudson Bay Ry. has ordered six first class cars, two baggage cars, and 30 steel frame box cars, 40 tons capacity, from the Canadian Car and Foundry Co., Montreal, and four second class cars from the Preston Car and Coach Co., Preston, Ont.

The Canadian Northern Ry., between Oct. 15 and Nov. 15, received the following additions to rolling stock: 175 box cars, two first class cars, two baggage cars, and one sleeping car, from the Canadian Car and Foundry Co., Montreal, and 35 box cars from the Crossen Car Co., Cobourg, Ont.

The eight second class and baggage cars and the two second class and mail cars, which the Canadian Northern Ry. is having built by the Preston Car and Coach Co., Preston, Ont., are 72½ ft. long over all, and equipped with six-wheel trucks, steel tired wheels, Simplex high speed brake beams, cast steel bolsters, diamond S steel back brake shoes, Gold hot water and steam heating, acetylene gas, etc.

The Canadian Northern Ry., between Oct. 15 and Nov. 15, ordered nine baggage cars from the Canadian Car and Foundry Co., Montreal; 31 ten-wheel passenger locomotives, 20 ten-wheel freight locomotives, and one rotary snow plough from the Montreal Locomotive Works, and 25 freight consolidation superheater locomotives, and five 6-wheeled switching locomotives from the Canadian Locomotive Co., Kingston, Ont.

The C.P.R., between Oct. 14 and Nov. 14, received the following additions to rolling stock: 125 wooden box cars, one van, three flangers, six D.10 locomotives, one R.1 Mallet locomotive, from its Angus shops, Montreal; 485 steel frame box cars, from the Canadian Car and Foundry Co., Montreal; 13 N.3 locomotives from the Montreal Locomotive Works; six N.3 locomotives from the Canadian Locomotive Co., Kingston, Ont., and 197 steel frame box cars from the United States.

The C.P.R., between Oct. 14 and Nov. 14, placed orders at its Angus shops, Montreal, for the following rolling stock: 59 box cars, six stock cars, three vans, one freight refrigerator car, two flangers, two snow ploughs, one superintendent's car, 12 tourist cars, six observation cars, five dining cars, six sleeping cars, three cafe-parlor car, two switching locomotives, and five G.2 locomotives, and ordered 2,500 steel frame box cars, 40 tons capacity, from the Canadian Car and Foundry Co., Montreal.

The Algoma Steel Co. has ordered 25 all steel Otis general service cars, 40 tons capacity, from the Hart-Otis Car Co., Montreal. These will be built by the Canadian Car and Foundry Co., Montreal. Following are the chief details:—

Length over end sills	21 ft. 9½ ins.
Length inside	19 ft. 1 in.
Width over all	9 ft. 11¼ ins.
Width inside	9 ft. 6 ins.
Height inside	4 ft. 6 ins.
Height from rail to top	8 ft. 10¾ ins.
Height from rail to floor	4 ft. 4¾ ins.
Truck centres	11 ft. 11 ins.
No. of doors on each side	4
Width of door opening	2 ft. 2 ins.
Length of door opening	19 ft. 1 in.

Following are chief details of the 15 first class cars which the Canadian Northern Ry. has ordered from the Canadian Car and Foundary Co., Montreal, as mentioned in our last issue:—

Length over end sills	72 ft. 6 ins.
Width over side sills	9 ft. 10½ ins.
Width over all at eaves	10 ft. 2¾ ins.
Width between deck sills	5 ft. 6 ins.
Height top of sill to bottom plate	6 ft. 8½ ins.
Platforms	Standard Coupler Co.
Body bolsters	Double cast steel
Lighting	Commercial Acetylene Co.
Heating	Gold Duplex. Frumveller hester
Hoppers	Duner Co.
Air brakes	Westinghouse P.M. 1612
Truck wheels	36 ins. steel tired, cast steel centres
Axles	M.C.B., 4¼ by 8 ins.
Brake beams	Simplex high speed
Journal boxes	McCord malleable

The Algoma Central and Hudson Bay Ry. has ordered 75 Otis composite general service cars, one of which is illustrated on this page, from the Hart-Otis Car Co., Montreal, in addition to the 50 previously ordered. Following are the chief dimensions:—

Length over end sills	38 ft. 9 ins.
Length inside	36 ft. 5 ins.
Width over all	9 ft. 11 ins.
Width inside	9 ft. 7 ins.
Height inside	4 ft. 6 ins.
Height from rail	8 ft. 10 13-16 ins.
Height from rail to floor	4 ft. 4 13-16 ins.
Wheel base of truck	5 ft. 6 ins.
Truck centres	26 ft.
No. of doors on each side	6
Width of door opening	2 ft.
Length of door opening	36 ft. 5 ins.
Capacity	110,000 lbs.
Tare weight	37,800 lbs.

Following are chief dimensions and details of special equipment of the 15 steel flat cars and 10 special coke cars, which the Algoma Steel Co. is having built by the Canadian Car and Foundry Co., Montreal:

Steel Flat Cars.

Capacity	80,000 lbs.
Length over end sills	36 ft.
Width over side sills	8 ft. 10 ins.
Brakes	Westinghouse H.C. 812
Couplers	Simplex cast steel
Trucks	Diamond arch har
Wheel base	5 ft. 2 ins.
Axles	M.C.B.
Bolsters and brake heams	Simplex
Journal bearings	M.C.B.
Journal boxes	Cast iron
Wheels	33 ins. M.C.B.

Special Coke Cars.

Capacity	60,000 lbs.
Length inside body	37 ft. 2¾ ins.
Width inside body	7 ft. .5¾ ins.

Other particulars as above.

Following are chief details of the 400 Hart convertible ballast and construction cars, which the Canadian Northern Ry. has ordered from the Hart-Otis Car Co., Montreal, as mentioned in our last issue. These cars will be of the latest type, and will be built, under license, by the Canadian Car and Foundry Co., Montreal. They are intended for delivery during 1912:

Capacity	80,000 lbs.
Width over side sills	8 ft. 10 ins.
Length inside as hopper	20 ft. 10 ins.
Length inside as gondola	34 ft. 8 ins.
Width inside	8 ft. 3 ins.
Width over all	10 ft. 2½ ins.
Width at top	9 ft. 10 ins.
Height from rail to floor	4 ft. 4⅛ ins.
Height from rail to top of car	8 ft. 1⅜ ins.
Height inside	3 ft. 9¼ ins.
Truck centres	26 ft. 8 ins.
Wheel base of truck	5 ft. 4 ins.
Length of hopper door opening	16 ft. 8½ ins.
Width of hopper door opening	2 ft.

Following are chief details of the 300 steel underframe flat cars which the Canadian Northern Ry. has ordered from the Canadian Car and Foundry Co., Montreal, as mentioned in our last issue:—

Back to back of end sills	41 ft. 9¼ ins.
Width over side sills	8 ft. 10 ins.
Truck centres	31 ft. 2 ins.
Wheel base	5 ft. 4 ins.
Height from top of rail to top of floor	4 ft. 2⅞ ins.
Height, top of rail to centre of drawbar	2 ft. 10½ ins.
Draft springs	M.C.B. Class G
Air brakes	Westinghouse K.C. 812
Trucks	Standard 40 ton Diamond arch bar type
Wheels	Cast iron, 33 ins.
Axles	M.C.B.
Journals	5 by 9 ins
Journal bearings	M.C.B.
Journal boxes	McCord
Truck springs	M.C.B. Class C
Brakebeams and bolsters	Simplex
Brake shoes	Steel back

Following are the chief details of the rotary snow plough which the Canadian Northern Ry. has ordered from the Montreal Locomotive Works:—

Cylinders, diar. and stroke	17 by 22 ins.
Truck wheels	33 ins.
Boiler, diar.	60 ins.
Boiler, pressure	190 lbs.
Firebox, length and width	92 by 50 ins.
Tubes, no. and diar.	202 2 ins.
Tubes, length	9 ft. 8 ins.
Wheel base, trucks	4 ft. 6 ins.
Wheel base, total	19 ft. 8½ ins.
Total wheel base, plough and tender	52 ft. 6 ins.
Weight on forward truck	82,000 lbs.
Weight on rear truck	70,000 lbs.
Weight, total	152,000 lbs.
Weight, tender	123,600 lbs.
Heating surface, tubes	1,022 sq. ft.
Heating surface, firebox	130 sq. ft.
Heating surface, total	1,152 sq. ft.
Grafe area	31.9 sq. ft.
Width of drum	10 ft.
Width of cut	10 ft. 7 ins.
Rotary wheel diar.	9 ft. 8½ ins.
Rotary wheel, type	Scoop

Following are chief details of the D.10g locomotives which the C.P.R. is building at its Angus shops, Montreal, as mentioned in a recent issue:—

Weight on drivers	149,000 lbs
Weight, total	198,500 lbs.
Cylinders, diar. and stroke	21 by 28 ins.
Valves, diar. and kind	11 ins. piston
Boiler, type	Extended wagon top
Boiler, pressure	200 lbs.
Heating surface, tubes	2,229 sq. ft.
Heating surface, firebox	180 sq. ft.
Heating surface, total	2,409 sq. ft.
Heating surface, superheater	408 sq. ft.
Tubes, no. and diar	239 2 ins., 24 5 ins.
Tubes, length	14 ft. 2⅞ ins.
Firebox	8 ft. 6⅛ ins. by 5 ft. 9⅞ ins.
Grate area	49 sq. ft.
Tank capacity, water	5,000 imp. gals.
Tank capacity, coal	10 tons
Axles, main	9½ by 12 ins.
Axles, others	9 by 12 ins.
Brakes	Westinghouse E.T.6
Headlight	Pyle National Electric
Valve gear	Walschaert
Superheater	Vaughan and Horsey

The Quebec Central Ry. has ordered two mogul locomotives from the Cana-

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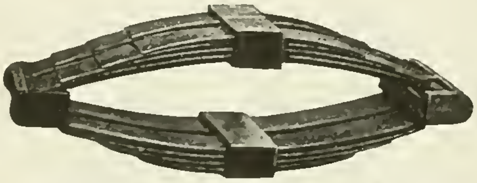

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AND ITS LESSON

The following cities are using Pay-As-You-Enter Cars: Chicago City Railway, 839 cars; Chicago Railways, 1,328; Public Service Corporation of New Jersey, 466; New York City Railway, 555; Third Avenue Railroad, New York, 550; International Railway, Buffalo, 200; Buffalo & Lake Erie Traction Co., 10; Washington Ry. & Elec. Co., Washington, D.C., 100; Capital Traction Co., Washington, D.C., 51; Municipal Traction Co., Cleveland, Ohio, 180; United Rys. Co. of St. Louis, Missouri, 310; Portland Ry., Lt. & Pwr. Co., Portland, Ore., 25; Columbus Ry. & Lt. Co., Columbus, Ohio, 10; Wichita R.R. & Lt. Co., Wichita, Kan., 14; Jacksonville Elec. Co., Jacksonville, Fla., 5; Dallas Elec. Co., Dallas, Texas, 20; Houston Elec. Co., Houston, Tex., 41; Northern Texas Trac. Co., Ft. Worth, Texas, 25; Ithaca Street Ry., Ithaca, N.Y., 2; Peoria Street Ry., Peoria, Ill., 13; Urbana & Champaign Ry., Champaign, Ill., 3; Mutual Lt. & Water Co., Brunswick, Ga., 4; Rochester Ry. Co., Rochester, N.Y., 25; Ft. Dodge, Des Moines & So. R.R. Co., 2; Muskogee Elec. Trac., Muskogee, Okla., 6; Union Traction Co., Dubuque, Ia., 4; Topeka Ry. Co., Topeka, Kas., 12; United Rys. & Elec. Co., Baltimore, Md., 32; Detroit United Ry., Detroit, Mich., 225; Cincinnati Traction Co., Ohio, 50; Montreal Street Railway, 400; British Columbia Elec. Ry., 30; Calgary Street Railway, 18; Metropolitan Street Ry., Kansas City, Mo., 50; Edmonton Radial Ry., 4; San Antonio Traction Co., San Antonio, Tex., 6; Rockford & Int. Ry., Rockford, Ill.; Cairo Street Ry. & Lt. System, 6; Des Moines City Railway, Iowa, 12; Macon Ry. & Lt. Co., Macon, Ga.; Virginia Ry. & Power Co.; Columbia Elec. St. Ry. & Lt. & Power Co., Columbia, S.C.; Aurora, Elgin & Chicago Ry., Chicago, Ill.; Wichita Falls Traction Co., Wichita Falls, Tex.; Ottawa Electric Ry. Co., Ottawa; Bloomington & Normal Ry. & Lt. Co., Bloomington, Ill.; Corsicana Transit Co., Corsicana, Tex.; Compania Electrica y de Ferrocarriles, Mexico; The Milwaukee Elec. Ry. & Lt. Co., Milwaukee, Wis.; Springfield Street Ry. Co., Springfield, Mass.; Lynchburg Traction Co., Lynchburg, Va.; Chicago & Southern Traction Co., Chicago, Ill.; Calumet & South Chicago Ry. Co., Chicago, Ill.

THE LESSON

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ALGOMA CENTRAL 4201

Otis Composite General Service Cars, built for the Algoma Central and Hudson Bay Railway.

dian Locomotive Co., Kingston, Ont. Following are the chief details:—

Weight on drivers	122,000 lbs.
Weight, total	141,000 lbs.
Wheel base, rigid	15 ft.
Wheel base, total	23 ft.
Heating surface, tubes	1,741 sq. ft.
Heating surface, firebox	153 sq. ft.
Heating surface, total	1,894 aq. ft.
Driving wheels, diar.	56 ins.
Driving wheel centres	Main, steel; other cast iron
Driving journals	9 by 12 ins.
Cylinders, diar. and stroke	20 by 26 ins.
Boiler, type	Radial stay
Boiler, pressure	200 lbs.
Tubes, no. and diar.	280 2 ins.
Tubes, length	11 ft. 11 ins.
Brakes	Westinghouse American
Weight of tender, loaded	104,000 lbs.
Capacity water	4,300 imp. gals.
Capacity, coal	9½ tons
Tank, type	U-shape, sloping back
Truck, type	4-wheel with steel bolster
Wheels, diar.	33 ins.
Wheels, type	Steel tires, w.i. centres
Journals	5 by 9 ins.
Brake beams	Steel

Following are chief details of the five six-wheeled switching locomotives which the Canadian Northern Ry. has ordered from the Canadian Locomotive Co., Kingston, Ont.:—

Weight	123,000 lbs.
Wheel base	11 ft.
Heating surface, tubes	1,206 sq. ft.
Heating surface, firebox	131 sq. ft.
Heating surface, total	1,337 sq. ft.
Driving wheels, diar.	50 ins.
Driving wheel centres	Cast iron
Driving journals	8½ by 10 ins.
Cylinders, diar. and stroke	19 by 26 ins.
Boiler, type	Radial stay
Boiler, pressure	180 lbs.
Tubes no. and diar.	223 2 ins.
Tubes, length	10 ft. 5 ins.
Injectors	Locomotive type
Safety valves	Locomotive pop
Brakes	Westinghouse American
Tender, weight, loaded	86,000 lbs.
Capacity, water	3,500 imp. gals.
Capacity, coal	5 tons
Tank, type	Sloping back
Truck, type	Arch bars with steel bolsters
Wheels, diar.	33 ins.
Wheel, type	Wrought iron, steel tired
Journals	4¼ by 8 ins.
Brake beams	Steel trussed

Following are chief details of the 25 consolidation superheater locomotives which the Canadian Northern Ry. has ordered from the Canadian Locomotive Co., Kingston, Ont.:—

Weight on drivers	163,000 lbs.
Weight, total	188,000 lbs.
Wheel base rigid	15 ft. 6 ins
Wheel base, total	23 ft. 9 ins.
Heating surface, tubes	1,772 sq. ft.
Heating surface, firebox	179 sq. ft.
Heating surface, total	1.921 sq. ft.
Driving wheels, diar.	57 ins.
Driving wheel centres	Cast steel
Driving journals	Main 9½ by 12, others 9 by 12 ins.
Cylinders, diar. and stroke	23 by 26 ins.
Boiler, type	Radial stay
Boiler pressure	170 lbs.
Tubes, no. and diar.	179 2 ins., 24 5⅜ ins.
Tubes, length	14 ft.
Brakes	Westinghouse American
Superheater	Schmidt
Tender, weight, loaded	144,000 lbs.
Capacity, water	6,000 imp. gals.
Capacity, coal	12 tons
Tank, type	Water bottom
Truck, type	Four wheeled equalized
Wheels, diar.	33 ins.
Wheels, type	Steel tired
Journals	5½ by 10 ins.
Brake beams	Simplex
Wheels, type	Solid steel
Journals	5½ by 10 ins.
Brake beams	Simplex high speed trussed beams

Following are the chief details of the D.4g locomotives which the C.P.R. is building at its Angus shops, Montreal, as mentioned in a recent issue:—

Weight on drivers	100,000 lbs.
Weight, total	135,000 lbs.
Weight of tender, loaded	118,000 lbs.
Tender capacity, coal	10 tons
Tender capacity, water	4,000 imp. gals.
Heating surface, firebox	152 sq. ft.
Heating surface, tubes	844 sq. ft.
Heating surface, total	996 sq. ft
Heating surface, superheater	229 sq. ft.
Grate area	28.5 sq. ft.
Tubes, no. and diar.	115 2 ins., 18 5 ins.
Wheel base, driving	11 ft. 10 ins.
Wheel base of engine	22 ft. 1 in.
Wheel base, engine and tender	50 ft. 2 ins.
Boiler, type	Wagon top
Boiler pressure	180 lbs.
Superheater	Vaughan and Horsey
Staying	Radial and cross
Cylinders, diar. and stroke	19 by 24 ins.
Driving wheels, diar.	62 ins.
Valve gear	Walschaert
Valve, kind and size	Piston 11 ins.
Axles, main	8½ by 8½ ins.
Axles, others	8 by 8½ ins.
Axles, tender	5 by 9 ins.
Axles, engine truck	5 by 8 ins.
Brakes	Westinghouse E.T.6
Headlight	Pyle National Electric

The Temiskaming and Northern Ontario Ry. has ordered four consolidation superheater locomotives from the Canadian Locomotive Co., Kingston, Ont. Following are the chief details:—

Weight on drivers	180,000 lbs.
Weight, total	206,000 lbs.
Wheel base, rigid	15 ft. 10 ins.
Wheel base, total	24 ft. 8 ins.
Heating surface, tubes	1,898 sq. ft.
Heating surface, superheater	455 sq. ft.
Heating surface, firebox	166 sq. ft.
Heating surface, total	2,519 sq. ft.
Driving wheels, diar.	57 ins.
Driving wheel centres	Cast steel
Driving journals	Main 9½ by 12 ins.; others 9 by 12 ins.
Cylinders, diar. and stroke	23 by 30 ins.
Boiler, type	Extended wagon top, radial stayed
Boiler pressure	180 lbs.
Tubes, no. and diar.	250 2 ins., 24 5 ins.
Tubes, length	14 ft. 6 ins
Air brakes	Westinghouse ET. 6
Superheater	Vaughan and Horsey, 24 superheater elements of 4 1¼ ins. tubes each
Tender, weight, loaded	130,000 lbs.
Capacity, water	5,500 imp. gals
Capacity, coal	10 tons
Tank, type	Water bottom
Truck, type	Four wheeled equalized
Wheels, diar.	36 ins.

With reference to press reports to the effect that the Canadian Northern Ry. is considering the use of gasoline motors in the operation of local services on som in the operation of local services on some of the lines of its subsidiary companies in the east, we are officially advised that the management has the matter under consideration, and is looking for the proper kind of car. When that is secured, services will be run out to Quebec and other points still to be determined. As mentioned in our last issue, one of the lines which may be so operated is the Ctntral Ontario Ry., between Trenton and Picton.

Following are chief details of the 31 ten-wheel passenger locomotives and the 20 ten-wheel freight locomotives, equipped with superheaters, which the Canadian Northern Ry. has ordered from the Montreal Locomotive Works:—

	Passenger.	Freight.
Cylinders, diar. and stroke	22 by 26 ins.	20 by 24 ins.
Driving wheels, diar.	63 ins.	57 ins.
Boiler, diar. front end	66 ins.	58¼ ins.
Boiler, pressure	170 lbs.	170 lbs.
Firebox, length	113 ins.	102 ins.
Firebox, width	40¼ ins.	41¼ ins.
Tubes, no. and diar.	185 2 ins. 26 5⅜ ins.	133 2 ins. 18 5⅜ ins.
Tubes, length	13 ft. 2¼ ins.	13 ft. 2¼ ins.
Wheel base, driving	14 ft. 6 ins.	13 ft. 6 ins.
Wheel base, engine	24 ft. 10 ins.	23 ft. 8 ins.
Wheel base, engine and tender	54 ft. 3 ins.	52 ft. 8 ins.
Weight on engine truck	36,000 lbs.	36,000 lbs.
Weight on driving wheels	136,000 lbs.	115,000 lbs.
Weight, total, engine	172,000 lbs.	151,000 lbs.
Weight of tender	122,000 lbs.	122,000 lbs.
Heating surface, tubes	1,746 sq. ft.	1,241 sq. ft.
Heating surface, firebox	183 sq. ft.	139 sq. ft.
Heating surface, total	1,929 sq. ft.	1,380 sq. ft.
Grate area	31.6 sq. ft.	29.2 sq. ft.
Maximum tractive power	28,900 lbs.	24,300 lbs.
Tender, water capacity	5,000 imp. gals.	5,000 imp. gals.
Tender, coal capacity	10 tons	10 tons

Following are chief dimensions and details of special equipment of the six first class cars, two baggage cars and 30 steel frame box cars, which the Algoma Central and Hudson Bay Ry. is having built by the Canadian Car and Foundry Co., Montreal:

First Class Cars.

Length over end sills	60 ft. 8 ins.
Width over side sills	9 ft. 10 ins.
Width between deck sills	5 ft. 6 ins.
Vestibules	Pullman, type
Curtains	Holden Co.
Diaphragms	Ajax
Bolsters	Double cast steel
Buffers and platforms	Standard Coupler Co.
Water system	Gravity and air
Hoppers	Duner Co.
Heating	Hot water, Canadian Gold Car Heating and Lighting Co.
Air brakes	Westinghouse L.N. 1412
Trucks	Standard 4-wheel wood frame, 80,000 lbs. capacity
Axles	M.C.B.
Wheels	Steel tired c.i. centres, 36 ins
Journal boxes	McCord
Journal bearings	M.C.B.
Brake beams	Simplex

The two baggage cars are mainly as above.

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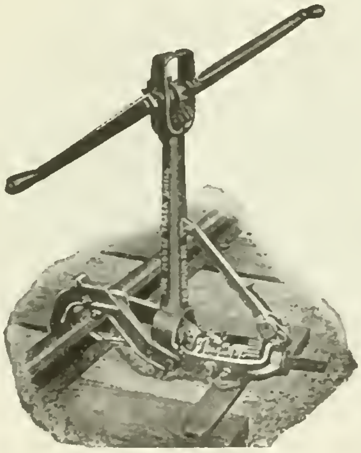
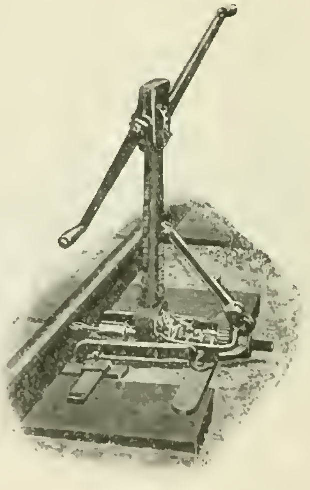


Over-Clutch Pattern



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Steel Frame Box Cars.

Length inside body	36 ft.
Width inside body	8 ft. 6 ins.
Brakes	Westinghouse K.C. 812
Trucks	Diamond arch bar, 80,000 lbs
Wheel base	5 ft. 2 ins.
Bolsters	Simplex
Side bearings	Susemihl
Brake beams	Simplex
Journal bearings	M.C.B
Journal boxes	McCord
Wheels	33 ins. M.C.B.

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Among the Express Companies.

W. A. Best has been appointed agent, Canadian Northern Ex. Co., Regina, Sask.

E. A. Brand has been appointed agent, Canadian Ex. Co., Hamilton, Ont., vice W. A. Robinson.

J. H. Parr, heretofore Route Agent, Canadian Ex. Co., has been appointed agent at Quebec, Que.

E. C. Macintyre has been appointed agent, Dominion Ex. Co., Rossland, B.C., vice C. W. Waistell.

W. McKellar has been appointed agent, Canadian Ex. Co., Seaforth, Ont., vice W. Somerville, resigned.

R. S. Cradock has been appointed agent, Dominion Ex. Co., Port Arthur, Ont., vice J. Wood, resigned.

W. S. Martin, heretofore acting agent, Dominion Ex. Co., has been appointed agent at Portage la Prairie, Man.

J. Wood, heretofore agent, Dominion Ex. Co., Port Arthur, Ont., has been appointed agent at Brandon, Man., vice W. S. Martin, transferred.

The Canadian Northern Ex. Co. is now operating over the Central Ontario Ry., having displaced the Dominion Ex. Co., which, however, retains its offices at Marmora and Bannockburn.

The Canadian Ex. Co. is now operating its service over the Quebec Oriental Ry., between Matapedia and Grand River, Que., and has opened offices at Gascons, Grand River, Newport, Paspebiac, Port Daniel, Ste. Adelaide and St. Godefroi.

The town of Montcalm is making complaint before the Quebec Public Utilities Commission, against the Dominion and American Express Companies, regarding their refusal to deliver parcels within the town limits. The question as to the jurisdiction of the Commission to deal with the matter was raised, and after some discussion it was agreed to leave the matter to be settled by the Chairman. If he decides that the Commission has jurisdiction, a date will be fixed for the hearing.

The Board of Railway Commissioners has authorized the Montreal and Southern Counties Ry. Express Department to use for local service between Montreal and Longueuil, the form of merchandise receipt contained in the Board's judgment, Dec. 24, 1910, without pars. 4, 5 (1), 7 (b), 7 (c), and 8, also the last clause of par. 3, for which the company shall add to its Standard Tariff, which was approved by order 15236, Oct. 11, the following clause:—"If the shipper desires the company to assume liability in excess of $50, an additional charge of 5c for each $100 or fraction thereof will be made."

The Board of Railway Commissioners recently ordered express companies subject to its jurisdiction, pending the disposition of question of joint tariffs, to graduate shipments of express freight subject to graduate charges and carried by two or more companies, under the lowest through or aggregate rate per 100 lbs. The graduate under $2 per 100 lbs. to be the minimum through rate, unless joint rate is published. Companies to submit supplement to Express Classification for Canada C.R.C. 2, making such changes as may be necessary by Nov. 22, and to prepare with reasonable dispatch, joint tariffs in accordance with the Board's judgment of Dec. 24, 1910, for traffic over any continuous route in Canada operated by two or more companies.

The Express Traffic Association recently applied to the Board of Railway Commissioners to cancel section D of the express classification, relating to books, maps, almanacs and other printed matter, on the ground that the rates had proved unremunerative, that for long distances they favored some shippers more than others, and that they should be made to conform to the other express rates of the association. Chief Commissioner Mabee, in dismissing the application, said that the association had given no evidence to show that the rates had not been remunerative, indeed the association had extended the classification to cover shipments of 10 lbs., whereas the postal service limited each shipment to 5 lbs. He also stated that the association had agreed to an international scale with the United States express companies covering many items in schedule D. The application of the Toronto Board of Trade to increase the weight of books carried under schedule D, was also dismissed, the Chief Commissioner stating that the Board had no authority to grant the request. The Express Traffic Association obtained the Board's consent to vary the order, so as to provide that the charges on empties must be prepaid by the consignees, unless an agreement to the contrary is made.

The Board of Railway Commissioners has sent a circular to the mayors of municipalities at 46 points east of Port Arthur, Ont., regarding express delivery limits within such towns, as follows: "The express collection and delivery limits in cities, towns and villages were fixed by the Board's order 13357, at the municipal boundaries, but this was merely a provisional measure, and leave was reserved to the companies to apply to the Board for the establishment of reasonable collection and delivery zones in cities, towns and villages, if any, where for any special reasons it might be unreasonable to require collection and delivery services to be made throughout the entire area thereof. Applications have been made in regard to these limits at various points, and these have either been settled by conference between the municipal authorities and the express companies, or failing such agreement, have been settled by the Board. The express companies concerned will take up the matter of collection and delivery limits with you, and if you and the representative or representatives of the express company or companies are unable to agree as to what are reasonable limits, the matter will then be dealt with by an officer of the Board.

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Telegraph and Cable Matters

It is reported in North Sydney, N.S., that the Western Union Telegraph Co. is considering the removal of its North Sydney office to Lloyd's Cove.

G. M. Bosworth, Vice President, C.P.R., in charge of traffic, has had his jjurisdiction extended to cover, among other departments, the whole of the telegraph system, the chief of which will now report to him.

The Assistant Postmaster General, in response to questions, in the British House of Commons, Nov. 14, stated that he hoped to be in a position shortly to make a statement regarding the reduction of cable rates between Great Britain and Canada.

S. J. Baker has been appointed acting Telegraph Inspector, Saskatchewan Division, C.P.R. Telegraphs, with headquarters at Saskatoon. We are officially advised that the appointment is only a temporary one. A. C. Fraser is Telegraph Inspector, Saskatchewan Division, with headquarters at Moose Jaw.

The Great North Western Telegraph Co. has offered to place its wires underground at Sparks and Rideau Sts., Ottawa, for a cash payment of $9,000. The city board of control is favorable to the proposition, and, it is stated, will recommend to the city council that it be accepted.

C. E. Davies, Local Manager, Great North Western Telegraph Co., Ottawa, Ont., has also been appointed Supervisor of Equipment, with jurisdiction over the company's equipment at London, Hamilton, Toronto, Kingston, Ottawa, Montreal, Quebec and Campbellton. This latter position is a new one.

At a recent meeting of the directors of the Montreal Telegraph Co., Hugh A. Allan resigned the Presidency, and his seat on the board, on account of having taken up his residence in England. Since the organization of the company in 1847, with the exception of the first five years, an Allan has been President. W. McMaster, heretofore Vice President, was elected President, and Wm. Wainwright was elected Vice President. B. McLennan was elected a director to fill the vacancy on the board.

James Kent, Manager, C.P.R. Telegraphs, who returned to Montreal recently from a trip of inspection of the lines to the Pacific coast, stated that two additional wires have been strung from Winnipeg to Calgary, one by way of Arcola and Regina, and the other by way of Saskatoon and Edmonton. A new wire has also been erected between Calgary and Vancouver. In speaking of the C.P.R. building now being erected at Toronto, he said that the Telegraph Department would occupy the top floor, which would be equipped with the latest type of instruments.

The Marconi's Wireless Telegraph Co., Ltd., of London, Eng., has, we are advised, instituted proceedings against Siemens Bros. and Co., Ltd., for alleged infringement of the Marconi Co.'s patents by the use of the German Telefunken Co.'s system. This is the third suit which has recently been instituted by the Marconi's Co. The first suit against the British Radio-Telegraph and Telephone Co., Ltd., resulted in a decision being given in Feb. last in favor of the Marconi's Co. The second suit, against the Lodge-Muirhead Syndicate, terminated in a settlement by which the Marconi's Co. took over all the Lodge-Muirhead patents, and by which Sir Oliver Lodge becomes associated with the Marconi's Co. as a scientific adviser.

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American Railway Master Mechanics' Association.—Master Car Builders' Association. At a recent joint meeting of the executive committees of these associations, it was decided to hold the annual conventions for 1912, at Atlantic City, N.J., June 12 to 14 for the first named and June 17 to 19 for the latter. It was also decided, on the suggestion of railway men to make certain changes in the entertainment programme, which it is anticipated will dispense with all of the entertainment items except the ball game. Preference in the assignment of accommodation at the headquarters hotel will be given to members who made application by Dec. 1.

A. Dwight Smith, Railway Sales Engineer, Northern Electric & Manufacturing Co., Montreal, who is contributing a series of articles on telephone train dispatching to the Railway and Marine World, read a paper on the subject before the Central Railway and Engineering Club at Toronto, Nov. 21.

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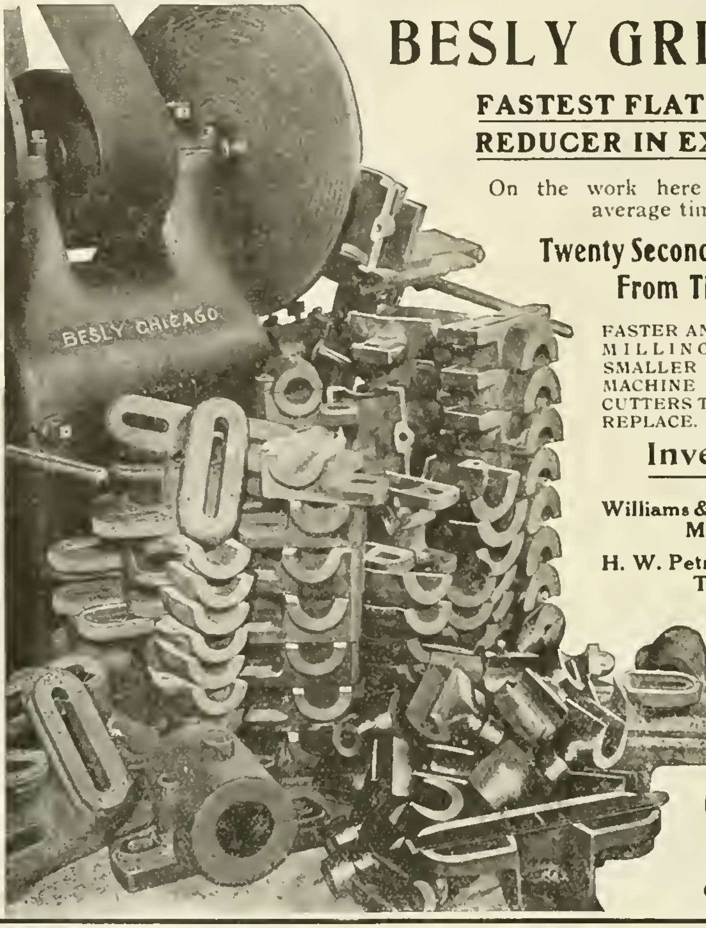

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Association's Office, 70 Bond St., Toronto.

Executive Committee.—E. P. Coleman, Manager of Railways, Dominion Power and Transmission Co.; H. M. Hopper, General Manager, St. John Ry.; J. E. Hutcheson, Superintendent, Ottawa Electric Ry.; C. B. King, Manager, London St. Ry.; D. McDonald, General Manager, Montreal St. Ry.; M. N. Todd, President, Galt, Preston and Hespeler St. Ry.

Assistant Secretary, Aubrey Acton Burrows, Secretary and Business Manager Railway and Marine World.

Official Organ, The Railway and Marine World.

◆

The Proposed Tube Railways in Toronto and Surface Connections.

The Toronto city council's legal department is preparing for submission to the ratepayers on Jan. 1, a bylaw to authorize the construction of a tube system of railways, with surface connections for the city. The ratepayers have already approved a bylaw favoring the carrying out a rapid transit project of which a tube railway was a principal part, but a proviso was attached to this bylaw to the effect that no construction of a tube railway should be undertaken until the money was specifically voted for that object. In order to provide the necessary data for this bylaw, plans were prepared in the City Engineer's offices of the railway department of which E. L. Cousins is in charge, for the complete system, and tenders were invited for the building of the tube. Fourteen tenders were received, Nov. 2, for the work either as a whole or for sections. That of M. J. Haney & Co., Toronto, is the lowest, the cost working out at $2,474,781. The McKnight Construction Co., Toronto, Clark and Monds, Toronto, and the Litchfield Construction Co., Brookline, Mass., tendered upon one section of the work each; while the following firms tendered upon the whole work, the figures appended being the approximate cost on the basis of the price per cubic yard tendered:

M. J. Haney & Co., Toronto	$2,474,781
F. L. Crawford, Brooklyn, N.Y.	2,845,590
Canadian Stewart Co., Montreal	2,930,713
Connors Bros., Lowell, Mass.	2,962,887
Orpen & Co., Toronto	3,091,927
Larkin & Sangster, St. Catharines, Ont.	3,456,754
Hugh Navin & Co., Boston, Mass.	3,730,580
P. McGovern, Boston, Mass.	3,849,390
Smith & Pinnock, New York	3,900,000
Coleman Bros., Boston, Mass.	3,912,186
Anglo-Canadian Construction Co., Toronto	5,196,542

The estimates presented to the board of control by the City Engineer, Nov. 20, place the total cost of the work at $5,171,395, made up as follows: The contract for the bare tube, $2,474,781; rearrangement of gas and water mains, sewers, etc., $1,251,581; underpinning buildings, $75,000; equipment, block signals, wiring, lighting tracking, station entrances, etc., $573,000; land damages, $250,000; carrying expenses during work of construction, including interest and sinking fund, $250,000; engineering, $75,000.

The plans and specifications upon which the tenders for the tube construction were asked, provided that the tenders were submitted on the understanding that no contract could be entered into until the taxpayers had passed a bylaw authorizing the expenditure. The plans show a line starting at Front St., and extending under Bay St. to Queen St. West, under the corner of the City Hall lawn to Terauley St., across under College St., to St. Vincent St., under the property on the west side of Chapel St., under North St. to Bloor St., under several properties to Ketchum Ave., then swinging round across under Davenport Road, and keeping west of Yonge St., crossing the C.P.R. and coming out to Yonge St. at Alcorn and Shaftesbury Avenues, then along Yonge St. to St. Clair Ave., a distance of three miles. The profile shows that the total rise in gradient from Front St. to St. Clair Ave. is 208½ ft. The gradient rises gradually to near McMurrich Ave., where it is 122 ft. higher than Front St.; and then descends to Gibson Ave., where it is 105¼ ft. higher than Front St.; ascending again to Balmoral Ave., the remaining portion of the subway being level. Provision is made for stations at Front St., King St., Albert St., College St., Bloor St., Davenport Road, Roxborough St., Shaftesbury Ave., and St. Clair Ave. The section plans show a subway 32 ft. 2 in. wide and over 19 ft. high over all, with an up and down tube, the inside measurements of each tube being 12 ft. side to side, 16 ft. 6 in. in height. When the ballasting is put in each tube will have a height of 15 ft. from top of rail to the top of tube arch. The top of the outside of the subway will be from three to ten feet below the surface of the ground. The subways at stations will be 44 ft. 3 in. over all, a platform 16 ft. in width being provided in each tube. The walls at the stations are set back just over eight feet on each side, to the platform level, which is extended on a cantilever to within about three inches of the car; the lower portion of the subway being of the same width as the tubes.

According to the specifications prices were asked for the work upon each quarter of a mile of tunnel, at per cubic yard for excavation, and at per cubic yard of concrete, with reinforcing steel at per pound. The walls of the subway are to be 2 ft. 7 in. thick, with a partition wall 1 ft. thick; provided with proper drainage and waterproofed on the top outside. The estimated quantity of material to be excavated is 462,658 cubic yards the greater part of which is blue clay, varying from 3 to 17 ft. below the surface, with a covering of filled in material, and occasionally a small quantity of quick sand. It is estimated that there will be required for the construction of the tube work, 150,416 cubic yards of concrete, of which 127,381 will be 1:2:4 mixture, and 23,035 will be 1:4:8 mixture. The quantity of steel for reinforcing is estimated at 9,134,920 lbs. The waterproofing material required will average about 11.10 square yards per lineal foot of tunnel.

The city has under construction a surface line along St. Clair Ave., for about three miles westerly from Yonge St. St. Clair Ave. is being extended and widened to 100 ft. for this distance, and as soon as possible track laying will be gone on with. At the extreme eastern boundary of the city another line is under construction on Gerrard St., westerly towards Yonge St. Considerable grading has been done, and track laying has been started. It is proposed that these lines will connect with the Yonge St. tube line, if it is built.

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The Quebec Public Utilities Commission conducted a test of car fenders at Montreal, Nov. 8 and 9. Six patterns had been put before the Commission, but only four of the inventors submitted fenders for the test.

The Selection and Method of Instruction of Trainmen in Order to Obtain Complete and Intelligent Accident Reports.

By A. E. Beck, Claim Agent, British Columbia Electric Railway.

In the selection of trainmen the management of a line should exercise great care and select none, even for trial, except such as are physically sound, quick as to intelligence and sober as to habits. When selected the candidate for service should receive thorough instruction as to the duties he will be called upon to perform, thus being made fit to become a servant of an exacting public, it being a well known and generally accepted fact that efficient and courteous trainmen have much to do with the securing and maintaining of the good repute of a public service corporation.

The selection of trainmen should be placed in the hands of one particular official. Once chosen for the service of the line the man should be turned over to the operating department for practical instructions in duties he will be called upon to perform, including knowledge of the various parts of a car and the best method of operating the equipment under every possible condition. When the term of instruction is completed the same official who originally selected the man for service should examine him as to proficiency, the responsibility for the appointment thus resting upon one man, the person who originally selected the candidate on general grounds and, after training and examination, finally passes upon the would-be employe on the strength of the detailed knowledge concerning the operation of trains which he is found to possess. The claim agent of the line should personally, so far as is practicable, impart to the new employe, with responsibility and dignity, the final instructions, as it is to this official that the trainman must eventually make his excuses in case of errors resulting in accidents.

The methods usually adopted in securing accident reports are by formal question and answer or by narrative. Prominence should be given to the narrative form, especially in primary investigation, as in this manner the trainman will, in his own way, best tell his story. The majority of trainmen object to being catechized, and usually respond to questions with monosyllabic replies which do not bring out the full facts of the case. The narrative form should, however, always include questions relating to date, time, place, speed, name of person or owner concerned, and witnesses.

The formal accident report should contain a few direct questions for stated answer, chiefly covering the specific points mentioned as necessary in the preceding paragraph. The form of the report should be such as to encourage the trainman to tell the whole story clearly and concisely, although not with the brevity of "Dog crossing track. Dog hesitates. Dog gone." It is often found that the general education of the average trainman has been neglected, and the inclusion of a long list of questions on the accident report frequently confuses him and leads to his submitting a report which does not give the assistance or information needed by the claim agent.

It is not expected that a report from a trainman will be a literary production, but it is to be always expected that

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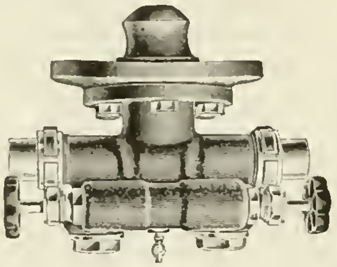

The position of this valve is on top of the boiler. It is provided with a stop valve for each check valve, so that either one of the check valves, if out of order, may be "cut out" without interfering with the feeding of the boiler. Removable caps on top of each check permit inspection and grinding of valves without disconnecting pipes.
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the statements will be truthful and in strict conformity with the facts of the case. To give assurance on this point the trainman should make certain to obtain the names and addresses of the greatest possible number of witnesses in any case where his own actions or the management of the line by which he is employed are liable to be called to account for any cause.

"Were you afraid to obtain witnesses?" "It was your duty to thus protect your company, yourself and your mate." "Others must be your judge." "An unjust claim may be made against your company." "You or your mate may be reprimanded and, possibly, discharged on account of this affair." "Every passenger is a witness, either directly or in corroboration." "Protect your company, yourself and your mate." "Observe and note carefully remarks, conditions and distances at the time of an accident."—Questions, suggestions and advice such as are above noted might well be used by a claim agent when dealing with trainmen.

Blanks for accident report should, like the book of rules, be always "on the job." They should have printed thereon rules to be observed in case of accident and a number of pointed "Don'ts" and "Hints" for trainmen, in preference to a long list of questions, many of which are superfluous. Space should also be left on the blank for a diagram which will give full information as to the exact location of an accident.

Accident reports should be made out as promptly as possible and handed to the division superintendent or inspector, who should, in turn, transmit them without delay to the claim agent.

The foregoing paper was read before the American Electric Railway Association at Atlantic City recently.

◆

Quebec Ry. Light Heat and Power Co's Annual Report.

The first annual meeting was held in Montreal recently. Following are extracts from the report for the year ended June 30:—

The company owns the whole of, or the majority of the stock of the following companies: Quebec Railway, Light and power Co., Quebec Jacques Cartier Electric Co., Quebec Gas Co., Frontenac Gas Co., Quebec County Ry. Co., Quebec and Saguenay Railway Co., and Canadian Electric Light Co

The gross earnings, $1,280,126.76, compared with $1,127,952.42 in 1910. The operating expenses were $661,907.15, compared with $644,563 60 in 1910. The net earnings were $618,219.61, an increase of $134,830.79 over 1910. After adding miscellaneous income from subsidiary companies' earnings prior to July 1, 1910, and deducting fixed charges of $456,329.02, two dividends, amounting to $199,990, organization expenses of $10,681.47, and less sundry interest earned of $11,109.48, there remains a surplus of $62,328.60.

The mileage on the Quebec Ry., Light and Power Co.'s city division has been increased 26-100 miles by an extension of track in Limoilou ward from the exhibition grounds to the Charlesbourg Road. Extensive repairs and renewals have been made, and the roadway is in excellent physical condition. Sixteen new cars of the modern pay-as-you-enter type and 10 open bench cars of standard type were purchased and put in service. Two large sweepers and two snow scrapers were also added which enabled the company to maintain its service during the heaviest storms. With the enlargement of car barns at St. Malo, the company has now ample room to accommodate its rolling stock. Provision has been made at these barns for additions to the rolling stock and for the enlargement of the barns when rendered necessary.

The mileage of the Montmorency division has been increased by 3½ miles of double track road from Beauport to Kent House park. This extension runs through a thickly settled district, and your directors are of the opinion that it will be almost immediately remunerative. About two miles of main line has been relaid with 80 lb. steel rails, the old rails taken up being used for sidings at various points. Additional tracks have also been laid in the yards at the Quebec terminal to facilitate the handling of the increasing freight traffic. The main line has been rebonded during the year with type e.a. electric welded rail bonds, which has greatly increased the efficiency and enabled the maintenance of a much improved service. The roadway is in excellent physical condition. Forty-eight gondola freight cars, 60,000 lbs. capacity; 15 box freight cars, 60,000 lbs. capacity, and two passenger motor cars of standard 400 class have been added to the equipment during the year, while one electric locomotive no. 6, constructed in the company's shops, has been in operation for some time, with good results. A new sub-station has been constructed at Ste. Anne de Beaupre, and a 500 k.w. motor generator set with exciter and transformers has been installed there. A new transmission line has also been constructed from Montmorency Falls to Ste. Anne de Beaupre, and the voltage increased from 10,000 to 25,000 volts, thus effecting a considerable saving. The company's hotel at Montmorency Falls park, the Kent House, has been enlarged and refurnished throughout. A number of new attractions have been added to the equipment of the Montmorency Falls park, and some of these have already proven profitable, as well as serving to induce people to visit the park.

The construction of the Quebec County Ry. was commenced in July, 1910, and the road opened for operation in Sept., 1910. The earnings of this line have fully warranted the expenditure incurred in its construction. The line runs from Maple Avenue westward through St. Cyrille Street, in Montcalmville, and through private right-of-way and streets in the municipality of St. Columba de Sillery to the top of Sillery Hill, 2⅓ miles, and is double-tracked throughout. The line passes in close proximity to the St. Patrick's and Mount Hermon cemeteries, which are visited daily by a large number of people. Under agreement a through service is operated over the lines of the city division to the Quebec post office.

Attached to the report are a number of interesting diagrams respecting the railway portion of the company's property.

On the City Division the gross earnings rose from $110,000 in 1897-8 to $351,441.96 in 1910-11, and the operating expenses from $80,000 to $218,217.19. The operating expenses per cent. of gross earnings decreased from 72% in 1897-8 to 62.09% in 1910-11.

On the Montmorency Division the gross earnings increased from $50,000 in 1897-8 to $245,039.04 in 1910-11, and the operating expenses from $30,000 to $166,719.68. The operating expenses per cent. of gross earnings were practically the same in 1910-11 as in 1897-8.

QUEBEC RAILWAY BUILDING

The Quebec Railway, Light, Heat and Power Co.'s New Office Building.

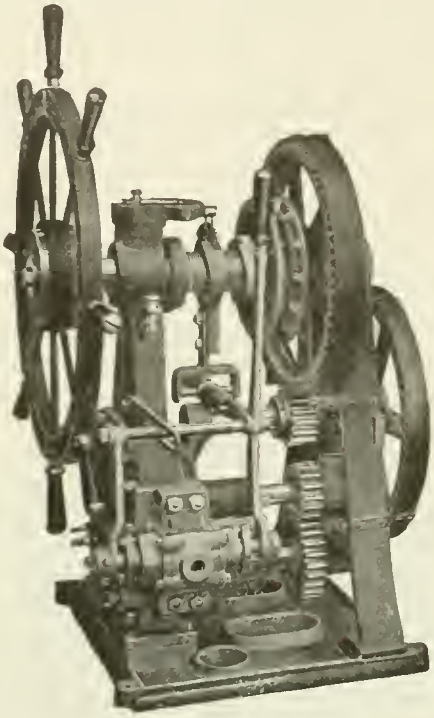
On the City Division the total number of passengers carried increased from 3,500,000 in 1897-8 to 10,706,479 in 1910-11. The revenue passengers increased from 2,500,000 in 1897-8 to 7,857,680 in 1910-11. The average fares per revenue passenger were practically the same in 1910-11, as in 1895-6, namely, 4.41c. The average fares for all passengers, transfers included, were also practically the same, namely, 3.23c.

On the City Division the car mileage increased from 700,500 in 1897-8 to 1,556,973 in 1910-11, and the earnings per car mile increased from .15½c. in 1897-8 to 22.26c. in 1910-11.

On the Montmorency Division the total number of passengers carried increased from 200,000 in 1897-8 to 1,475,702 in 1910-11, and the earnings per passenger decreased from .18½c. in 1897-8 to .11½c. in 1910-11.

The pamphlet also contains an illustration of the company's new office building at Crown and St. Joseph Sts., which is reproduced on this page. It is seven stories high, of structural steel, with terra-cotta fireproofing throughout. The building occupies one entire block,

Steam Steering Gears



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CANADIAN PACIFIC RAILWAY.

NOTICE.—The Canadian Pacific Railway Company will apply to the Parliament of Canada, at its next session, for an Act:—

1. Authorizing it to construct the following branch lines of railway:—

(a) From a point at or near Hawarden on its Moose-jaw Northwesterly Branch in a northerly direction to a point at or near Floral or Cheviot on the Pheasant Hills Branch or to a point between these two places in the Province of Saskatchewan.

(b) From a point on its Estevan-Forward Branch in Township 2 or 3, Range 12, 13 or 14, west 2nd Meridian in a westerly and northwesterly direction to a junction with its Weyburn-Lethbridge Branch in Township 5 or 6, Range 25 or 26, west 2nd Meridian, in the Province of Saskatchewan.

(c) From a point at or near Sedgewick on its Hardisty Subdivision in a southerly direction to a point in Township 39 or 40, Range 11, 12 or 13, west 4th Meridian, in the Province of Alberta.

(d) In a northwesterly and northerly direction from a point on its line from Wilkie authorized by section 3 (b) of chapter 74 of the Statutes of 1907, to a point near the North Saskatchewan River in Township 51, 52, 53, 54, 55 or 56, Range 1, 2, 3, 4, 5, 6, 7 or 8, west 4th Meridian, in the Provinces of Saskatchewan and Alberta.

(e) From a point at or near Kipp on its Crow's Nest Subdivision in an easterly and northeasterly direction to a point in Township 12 or 13, Range 12 or 13, west 4th Meridian, in the Province of Alberta.

(f) From the northwesterly terminus of the line from Asquith authorized by section 3 (b) of the Canadian Pacific Railway Act, 1910, in a westerly and northwesterly direction to a point at or near Battleford, in the Province of Saskatchewan.

(g) From a point at or near Irricana in an easterly and southeasterly direction to a point in Township 20 or 21, Range 11, 12, 13 or 14, west 4th Meridian, in the Province of Alberta.

2. Authorizing it to make the terminus of its line from Lauder Westerly at a point at or near Stoughton on its Arcola Branch.

3. Authorizing it to enter into an agreement with the Province of New Brunswick for any of the purposes specified under section 361 of The Railway Act in respect of a line of railway extending from Norton to Minto, New Brunswick, and for other purposes.

Dated at Montreal, this 25th October, 1911.

WALTER R. BAKER.
Secretary.

Pringle, Thompson & Burgess,
Ottawa agents.

◆

CANADIAN NORTHERN ONTARIO RAILWAY COMPANY.

NOTICE is hereby given that application will be made to the Parliament of Canada, at its next session, for an Act authorizing the sale of a portion of the constructed right of way of the Carillon & Grenville Railway Company between Grenville and Carillon by the Carillon & Grenville Railway Company to the Canadian Northern Ontario Railway Company, and confirming a notarial deed of sale thereof, dated July 25th, 1911, passed before Notary Robert Bennett Hutcheson under his number 11283, and registered in the Registry Office at Lachute, P.Q.

GERARD RUEL,
Chief solicitor.

Toronto, 26th October, 1911.

has a length of 145 ft. and a width of 64 ft. at one end and 71 ft. at the other end. The first, second and third floors will be occupied by the company, and the remainder of the building will be leased. Many applications have already been received for space. With this building the transaction of the company's business will be greatly facilitated, admitting as it will of the consolidation of all the company's executive offices in the one building. The company expects to occupy the new offices some time in January.

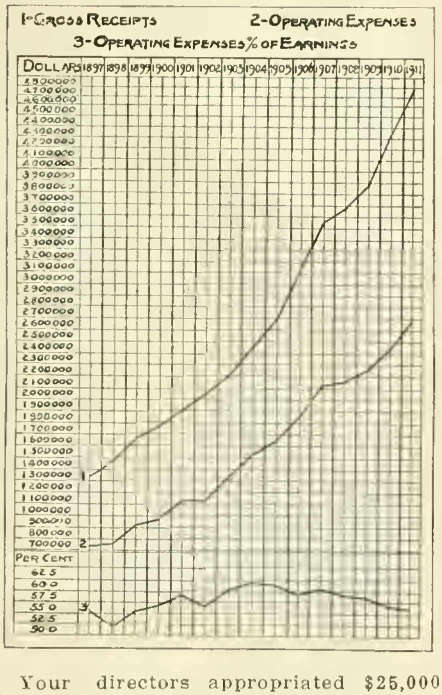
◆

Montreal Street Railway Co's. Annual Report.

Following are extracts from the report for the year ended Sept. 30, presented at the annual meeting, Nov. 1:—

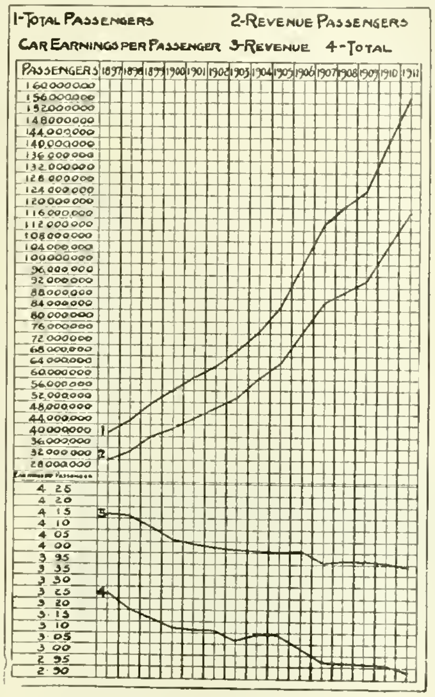
Gross earnings		$4,775,300.64
Operating expenses		2,679,805.85
Net earnings		2,095,494.79
Interest from M.P. & I. Ry. Co.		114,807.83
Total income		$2,210,302.62
From which deduct:—		
City percentage on earnings	$335,194.31	
Interest	185,087.41	
Rental leased lines	7,122.60	
Taxes	56,500.00	
		583,904.32
Net income		$1,626,398.30
Dividend 10%		1,000,000.00
Surplus		$ 626,398.30
From which has been appropriated for:		
Contingent account	$250,000.00	
Fire insurance fund	25,000.00	
		275,000.00
Transferred to general surplus		$ 351,398.30

The gross earnings increased during the year $422,749.46, or 9.71%, the operating expenses $224,504.79, or 9.14%, the net earnings $198,244.67, or 10.45%. The gross earnings continue to show very satisfactory increases. The percentage of expenses to gross earnings is 56.12%, against 56.41% for the previous year.



Your directors appropriated $25,000 from the surplus earnings as a credit to the fire insurance fund. The amount now at the credit of the fund is $571,539.96.

During the year the company secured an amendment to its charter, authorizing the sale, lease or transfer to any person or company of all its undertakings upon such terms as may be approved by the majority of the holders of the shares issued by the company, represented at a special general meeting called to authorize the same. On Oct. 5 a special general meeting of shareholders was held for the purpose of considering the sale of the whole of the company's undertakings to the Montreal Tramways Co. The proposition as submitted was carried by the majority of the issued shares and a circular has been forwarded to the shareholders giving the terms of the sale.



Owing to the continued rapid growth and congestion of the city your directors during the year negotiated with the city for the purpose of making a new contract which would be more applicable to the present day conditions. It is hoped that the amalgamation of this company with its subsidiary companies under the name of the Montreal Tramways Co. will help to speedily complete the negotiations for a new franchise. The property has been maintained in a high state of efficiency, and a considerable sum has been spent in the upkeep of the tracks and rolling stock, the power plants and buildings are in excellent condition, it being the policy of your directors to spare no efforts nor expense in this direction; yet notwithstanding this the surplus earnings are the largest in its history. Notwithstanding this the operating expenses percentage of earnings has decreased. The company has continued its liberal policy towards its employes in respect to wages, having increased them during the year. The company has paid to the city taxes and percentage on earnings amounting to $380,678.99, on account of snow removal $73,364.96, a total of $454,043.95, being an increase over the previous year of $15,860.40.

The Montreal Park and Island Ry.'s gross earnings show an increase of $60,973.72, the operating expenses an increase of $27,843.93, the net result being $114,807.83, against $85,878.04 for the previous year.

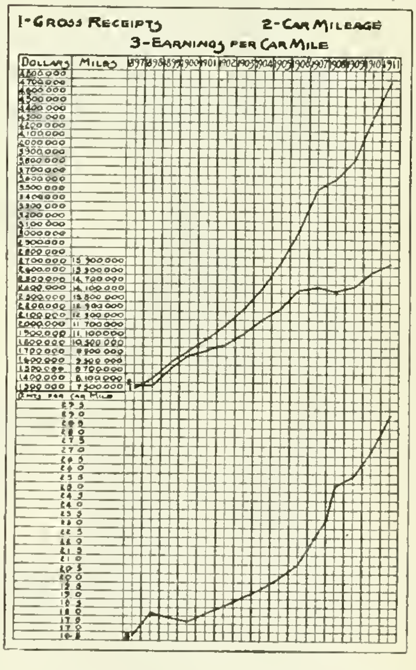
The Montreal Terminal Ry.'s gross earnings for the year are $134,019.96, operating expenses $122,116.10, and taxes and percentage on city earnings $4,279.96, leaving a net result of $7,623.90.

STATISTICAL STATEMENT.

	1911.	1910.
Gross earnings	$4,775,300.64	$4,352,551.18
Operating expenses	2,679,805.85	2,465,301.06
Expenses % of earnings.	56.12	56.41
Net earnings	2,095,494.79	1,897,250.12
Passengers carried	118,268,080	107,241,406
Car earnings per passenger	3.94c.	3.95c.
Transfers	40,488,545	36,437,123
Total passengers carried.	158,756,625	143,678,529
Car earnings per pass. total carried	2.93c.	2.95c.

GENERAL BALANCE SHEET.

ASSETS—		
Cost of road and equipment:		
Construction, etc.	$ 5,097,510.51	
Equipment, etc.	5,667,288.17	
Real estate and buildings.	2,390,624.04	
Stock and bonds of other companies	3,683,634.97	
		16,839,057.69
CURRENT ASSETS—		
Montreal Park and Island Ry. advances	$ 718,833.51	
Montreal Terminal Ry. advances	3,462.34	
Accounts receivable	189,332.76	
Stores	369,668.17	
Cash	783,395.09	
		2,064,691.87
Fire insurance fund investment		364,000.00
		$19,267,749.56
LIABILITIES—		
Capital stock	$10,000,000.00	
Bonds 4½%, payable Aug., 1922	681,333.33	
Bonds 4½%, payable May, 1922	1,500,000.00	
Bonds 4½%, payable May, 1922	2,238,666.67	
Mortgages	1,863.00	
		14,421,863.00
CURRENT LIABILITIES—		
Accounts and wages payable	$ 250,109.80	
Accrued interest	75,510.00	
Accrued tax on earnings.	348,963.19	
Employes' securities	19,658.28	
Unclaimed dividends	1,956.57	
Unredeemed tickets	75,605.20	
Dividend payable Oct. 25.	250,000.00	
Suspense account	329,616.88	
		1,351,419.92
Fire insurance fund	$ 571,539.96	
Contingent account	187,917.20	
Surplus	2,735,009.48	
		3,494,466.64
		$19,267,749.56



COMPARATIVE STATEMENT OF OPERATIONS.

	1911.	1910.
Gross earnings	$4,775,300.64	$4,352,551.18
Operating expenses	2,679,805.85	2,455,301.06
Net earnings from operation	2,095,494.79	1,897,250.12
Interest from M.P. & I. Ry.	114,807.83	85,878.04
Total income	$2,210,302.62	$1,983,128.16

Why Not Call A Spade A Spade?

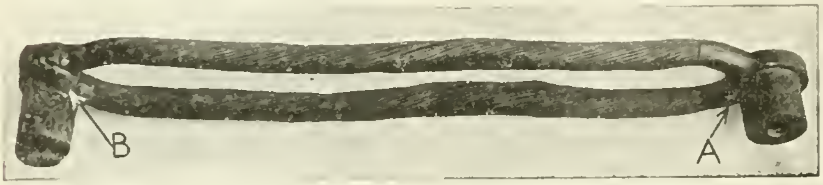
Cuts show One Piece Feature of All Wire Bonds Patented in U.S.A.

Joints made by attaching terminals of a bond to the body are *joints.*

In ALL WIRE RAIL BONDS the terminals are formed out of the body of the bond itself—hence our One Piece feature—result. *NO JOINTS.*

Four "joints" per bond (of other makes) mean 1408 *unnecessary joints* per mile of track.

You would not use a feeder cable that had splices every few feet, no matter how perfect the joints were—why not select *One Piece* Rail Bonds also? Let us tell you the *whole* story.



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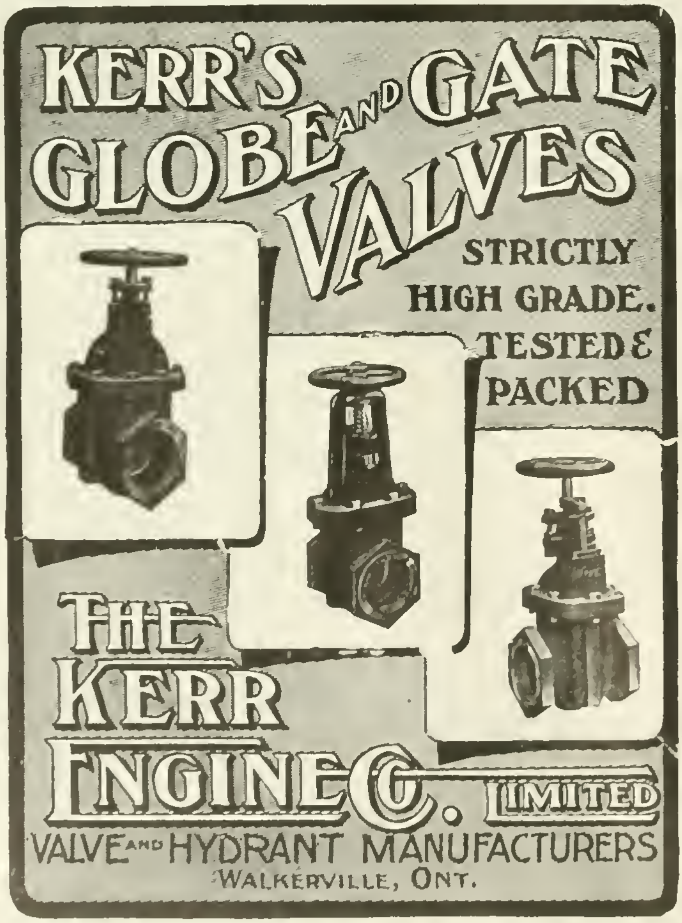

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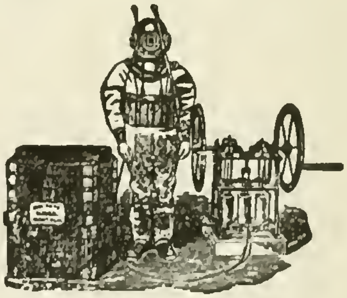

JOHN DATE
MANUFACTURER OF
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FOR SALE OR HIRE
Brass Founder & Coppersmith
152 Craig St. West, Montreal

Fixed Charges—		
City percentago on earnings	$ 335,194.31	$ 278,084.93
Interest	185,087.41	175,421.07
Rental leased lines	7,122.60	6,472.05
Taxes	56,500.00	48,000.00
Total	$ 583,904.32	$ 507,978.05
Net income	$1,626,398.30	$1,475,150.11
Dividend 10%	1,000,000.00	1,000,000.00
Surplus	$ 626,398.30	$ 475,150.11
From which has been appropriated:		
Contingent account	250,000.00	250,000.00
Fire insurance fund	25,000.00	25,000.00
Transferred to surplus account	$ 351,398.30	$ 200,150.11

Following are the officers and directors for the current year: President, E. A. Robert; Vice President, J. W. McConnell; other directors, Hon. J. M. Wilson, F. H. Wilson, W. C. Finley, G. G. Foster and J. M. McIntyre, the last mentioned being elected in place of D. L. McGibbon, resigned.

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Electric Railway Projects, Construction, Betterments, Etc.

Bassano, Alta.—The town council Nov. 14, granted a franchise for the building of an electric railway through the town, and out to the C.P.R. dam, five miles. The line is to be completed within nine months, and the town has the option of buying the property at the end of 20 years, or at the end of any ten year period thereafter.

Berlin and Bridgeport Electric St. Ry.—Press reports state that plans are under consideration for the building of a belt line, making connection at King St., with the present city and radial lines. (See Berlin and Waterloo St. Ry., Oct., pg. 973.)

Brandon, Man.—The proposition made by J. D. McGregor for a franchise for an electric railway in the city has been withdrawn for the present. The citizens voted, Nov. 9, on the question of municipal ownership against a company franchise, 458 votes being given for the company franchise and 176 for municipal ownership. This poll represented about half of the electorate who voted at the plebiscite on the question whether an electric railway should be built or not. The result of this vote was 1,238 in favor of and 236 against the building of an electric railway. (Nov., pg. 1067.)

British Columbia Electric Ry.—Work has been started on several small extensions on a number of the lines on the outskirts of Vancouver, and arrangements are being made for the building of an extension to Ladner.

The Vancouver city council proposes to ask the Legislature for power to acquire at some future date the company's lines in greater Vancouver, and to lay aside annually $500,000 from the present time to the expiration of the company's charter when the city may take over the line.

The ratepayers of Barnaby have authorized the company to test the validity of the company's franchise in the courts. (Nov., pg. 1067.)

Calgary Municipal Ry.—Application is being made by the city council for the confirmation by the Alberta Legislature of money bylaws recently passed, one of which was for the raising of $375,000 for street railway purposes. (Nov., pg. 1069.)

The Calgary Municipal Ry. has completed 24 miles of extensions and now operates 30 cars. We are officially advised that 20 miles more are to be built next year.

Calgary to Chestermere, Alta.—Construction is reported to have been started upon the building of an electric railway from Crescent Heights, Calgary, in the direction of Chestermere, Alta. It is expected to have the line completed early in the new year. Those interested in the matter are J. A. MacCullough, W. Horner, A. M. Hamilton, C. T. Gilbert, C. A. Shipps, H. T. Graham, all of Calgary. It is said that when built the line will be operated by the Calgary Municipal Ry. (See Calgary Municipal Ry., Aug., pg. 783.)

Edmonton Radial Ry.—Strathcona Radial Ry.—Application is being made to the Alberta Legislature by the Edmonton city council for an amendment to the city charter, to grant an extension of time within which the several lines authorized may be built. (Nov., pg. 1069.)

Galt, Preston and Hespeler St. Ry.—No definite decision has been reached as to the building of an extension to Riverside Park, Galt, Ont. The work, if undertaken, will be ordinary street railway construction.

Hamilton, Waterloo and Guelph Ry.—The Dominion Parliament is being asked to extend the time within which this projected railway may be built. Pringle and Guthrie, Ottawa, are solicitors for applicants. (July, pg. 683.)

Lethbridge, Alta.—The Lethbridge city council, Nov. 8, appointed T. H. McCauley, Superintendent, Calgary Municipal Ry., as consulting engineer, and A. Reid, supervising engineer, for the building of an electric railway in the city. Construction has been started, and it is hoped to have the line in operation by Aug., 1912. The route will be from Round St. to McDuff St., east on Westminster Road, then west to Galbraith St., and from Round St., west on Redpath St., and on Round St. to Henderson Park on Courtland St. Tenders for the supply of the necessary additional equipment for the power house have been asked, and the city is arranging to order ten cars. The site for the car barns has not yet been chosen. (Nov., pg. 1069.)

London and Lake Erie Ry. and Transportation Co.—The section of the line from London to St. Thomas, Ont., has been strengthened and in part reconstructed, and work was started Nov. 10, reballasting it. The remaining mileage from St. Thomas to Port Stanley will be taken in hand next season. Arrangements are being made for the use of hydro-electric power for the operation of the lines. (Sept., pg. 879.)

London and North Western Ry. of Canada.—Plans are reported to be in preparation for the building of an 80 ft. dam on the Au Sable River, in West William tp., near London, in connection with the company's proposal to build an electric railway from London to Sarnia, Ont.

The surveys for the railway are reported to have been completed, the route following as nearly as possible the Sarnia gravel road. (June, pg. 555.)

London Street Ry.—The directors have authorized the issue of the balance of the $750,000 of authorized stock, of which $552,000 is at present outstanding. The proceeds of the new stock will be utilized for the purpose of building some extensions. No decision has been reached as to the extensions to be built. (Nov., pg. 1069.)

Monarch Ry.—W. H. Price, Toronto, representing this company, is quoted as stating that if the tube railway system is adopted by the Toronto ratepayers on Jan. 1, the company will start the construction of its line from north of Toronto to Barrie, Ont. (Aug., 1910, pg. 682.)

Moncton Tramways, Electricity and Gas Co.—Track has been laid on Main and Mechanic streets, and the overhead work completed. The car bodies have been fitted on to their trucks, and the other work is so far advanced that it is expected to have the lines in operation early in December. (Nov., pg. 1069.)

Montreal and Southern Counties Ry.—W. B. Powell, General Manager, is reported as having stated that a good deal of work has been completed on the extension to Richelieu and that he expects the line will be completed from Montreal to Richelieu, about 60 miles, by July, 1912. A sub-power station is being built at St. Lambert. The question of additional lines in the city of Montreal is being considered by the city council. (Nov., pg. 1069.)

Moose Jaw Electric Ry.—Four miles of this line have been in operation for a couple of months, with satisfactory results. Arrangements are being made for the laying of an additional ten miles of track during 1912. The new lines will include an extension on Main St. north, and a loop line up 18th Ave., then along Grosvenor St., connecting with Main St. (Sept., pg. 879.)

Morrisburg and Ottawa Ry.—The surveys for the projected railway and the plans for the line, so far as they have been completed, were made by J. S. McIntosh, B.Sc. The plans have not yet been filed for the approval of the provincial authorities. The company, which has a provincial charter, proposes to build a line from Ottawa to Morrisburg, Ont., via Metcalfe, Winchester and Williamsburg, about 45 miles. We are advised that it is expected to start building the line in the near future.

Following are the officers and directors for the current year: President, Jas. Oliver; Vice President, W. J. Campbell; Secretary-Treasurer, R. A. Bishop; other directors: H. McDonald, W. C. Strader. With the exception of the last named, who lives in Williamsburg, Ont., all the officers and directors live in Ottawa. (Nov., pg. 1069.)

Nanaimo, B.C.—Another proposal for a franchise for an electric railway in the city has been submitted to the city council by the B.C. Hydraulic Co., and has been taken into consideration. (Nov., pg. 1069.)

Niagara, St. Catharines and Toronto Ry.—We are officially advised that while consideration has been given to a proposal to extend the line from Port Colborne to Fort Erie, and on to Niagara Falls, thus giving the company a belt line through the peninsula, nothing definite has been arranged.

The Board of Railway Commissioners has authorized the opening for traffic of the company's revised line across ponds 1, 2 and 3, opposite locks 12, 13 and 14 of the old Welland canal, at Merritton, Ont. (June, pg. 557.)

Nipissing Central Ry.—J. L. Englehart, Chairman, Temiskaming and Northern Ontario Ry. Commission and President, N.C.R., stated, Nov. 9, that the extension of this line will be gone on with just as soon as the towns interested grant the necessary franchises. Surveys from Haileybury and Liskeard have been completed, and all that is required now is the approval of the Haileybury and Liskeard town councils. (Nov., pg. 1069.)

North Midland Ry.—Negotiations have been reopened with the London, Ont., city council, having for their object the guarantee of the company's bonds. At the last municipal elections the citizens voted in favor of the principle of extending aid to the building of the line, but some difficulties arose, and nothing was done in the way of arranging the bond guarantee. The city council had the matter under discussion, Nov. 15. (Sept., pg. 879.)

Ontario West Shore Ry.—Further deliveries of ties and other construction materials were made at Goderich, Ont., Nov. 10. Track has been laid from God-

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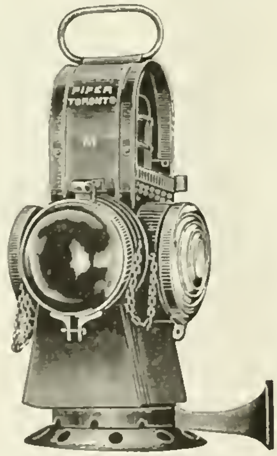

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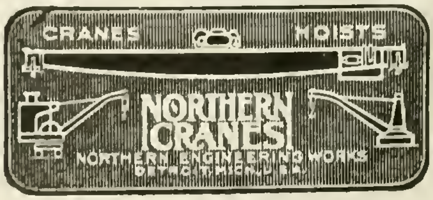


erich to Kintoul, 16 miles, over which freight is being carried. It is said that some further track is to be laid, and the line got into order for the operation of a passenger service. (Sept., pg. 879.)

Ottawa Electric Ry.—Press reports state that plans are under consideration for the building of an electric railway from Ottawa to McGregor Lake, Ont. (Oct., pg. 975.)

Owen Sound, Ont.—We are advised by the mayor of Owen Sound, Ont., that the report which he made to the town council on the matter of the building of an electric railway has not yet been dealt with. The project is only in its infancy, but he hopes that it will be endorsed.

The plan outlined by the town engineer shows a line of six miles. The eastern branch would run from Carney's mills up to the Cemetery hill, and the western branch would cross the river at Tenth St., and continue out to Twenty-third St. on Brooke. The Tenth St. bridge would be used for interswitching freight traffic between the G.T.R. and the C.P.R. (Nov., pg. 1069.)

Peoples Ry.—A. N. Warfield, the engineer who made surveys for this projected railway, sued the company at the recent assizes at Stratford, Ont., for $3,000 for services rendered. Judgment was reserved. (Oct., pg. 975.)

Quebec Ry. Light and Power Co.—R. Forget, President, is reported to have stated recently that it is intended to lay a second track from Quebec to Ste Anne de Beaupre, Que. In connection with this projected work it is reported in several quarters that the C.P.R. has under consideration the question of acquiring this section of the line, and the extension now under construction by the same interests, under the Quebec and Saguenay Ry. charter. (Oct., pg. 975.)

St. John Ry.—The Provincial Government is making extensive repairs to the suspension bridge at St. John, N.B., pending the building of a new bridge. Plans for this new bridge, it is stated, are being prepared, so as to provide for a double track line for the electric railway. (July, pg. 685.)

Saskatchewan Power Co.—Application is being made to the Dominion Parliament to authorize the expropriation of lands in addition to those previously authorized, and for the purpose of further defining the company's powers.

Application is being made to the Saskatchewan Legislature for an act confirming the agreement made July 21 between the city and H. M. E. Evans, "whereby a street railway franchise was granted and a contract made for the purchase of electric power." (Nov., pg. 1071.)

Southeast Calgary Ry.—Application is being made to the Alberta Legislature to incorporate a company with this title to build an electric railway from Calgary, southeasterly to Shepard. Loughheed, Bennett, McLaws and Co. are solicitors for applicants.

Toronto and York Radial Ry.—The franchise of the section of the company's Scarboro division, within the city limits, including the portion between Kingston road and the corner of Gerrard and Main streets, expires Nov. 12, 1912, and the Toronto city council has under consideration a bylaw for acquiring it.

A number of residents of the Yonge St. district north of the C.P.R. north track line waited on the Premier of Ontario recently in connection with the Ontario Railway and Municipal Board's conflicting orders as to switches on the Metropolitan Division. This matter has been before the Board since March in different forms. In June it was adjourned until Sept., in order to see if some arrangement would not be reached as to the annexation of North Toronto to the city, and so bring about the double tracking of the line. This could not be arranged, and in October, on a further hearing, two of the commissioners decided that the company's application to put in switches should be refused. The Chairman held that the decision involved some points of law and that his view carried. His judgment gave the company permission to construct switches at certain points on the line according to a plan filed and approved by the Board's engineer, subject to the inspection of the Board's engineer. The residents of North Toronto are not satisfied and it is expected they will carry the matter into the courts.

The company is reported to have purchased a considerable portion of the right of way necessary for building a double track line between Sunnyside and Long Branch. The city has power to acquire this section of the line, on the charter's expiration. The line runs along the side of the Lake Shore road, with the exception of a small length at the Mimico Creek, for which the company acquired a private right of way and built a new line, which was opened for traffic recently. (Oct., pg. 975.)

Toronto Eastern Ry.—The Board of Railway Commissioners has authorized the company to connect its proposed tracks from Wellington St., Bowmanville, Ont., with the Canadian Northern Ontario Ry., in con. 3, Darlington tp.

Press reports state that surveys are being made for an electric railway branching out from the T.E.R. at Port Hope, and passing through Peterboro, Lindsay and Omemee to Orillia. The engineers in charge of the work are Graham and Mann. (Nov., pg. 1071.)

Toronto Suburban Ry.—The reconstructing of sections of the line to Lambton, Ont., is being proceeded with, and Sir Wm. Mackenzie was reported as stating, Nov. 15, that work will probably be started early in the new year on the extension of the line towards Guelph. Press reports state that this line will be built as an extension of the Weston, and not of the Lambton line. (Aug., pg. 785.)

Windsor, Chatham and London Ry.—Application is being made to the Dominion Parliament to amalgamate the W.C. and L. Ry. and the Windsor, Essex and Lake Shore Rapid Ry., and to extend the time within which the lines may be built. Although the notice is given under the title of the W.C. and L. Ry., it is asked that the amalgamation may be made "under the name of either one of them, or such other name as may be chosen." Wilson, Pike and Stewart, Chatham, Ont., are solicitors for both companies interested.

Windsor, Essex and Lake Shore Rapid Ry.—See Windsor, Chatham and London Ry. (Nov., pg. 1071.)

Winnipeg Electric Ry.—The new lines recently opened in Winnipeg extend from Sherbrooke St., along Sargeant St., along Kennedy St. and Ellice St., to Portage Ave., opposite the post office, and along Princess St., to Main St., beyond Logan Ave.

Residents of St. Vital and Norwood are asking the company to extend its line from Marion St., along St. Mary's Road, to the southern limits of St. Boniface. (Nov., pg. 1071.)

Berlin and Waterloo St. Ry.—The Berlin, Ont., town council has under consideration an offer by W. H. Breithaupt, President, Berlin and Bridgeport Electric St. Ry., to lease the B. and W.S.R. on a 25 year agreement, terminable at the end of any five years. The agreement provides for the upkeep of the line by the lessee, and payment of a rental of 25% of the gross proceeds.

The Montreal Tramways Company

The Quebec Public Utilities Commission has approved of the amalgamation of the Montreal Street Ry. Co., the Montreal Park and Island Ry. Co., the Montreal Terminal Ry. Co., and the Public Service Corporation under the title of the Montreal Tramways Co. On the other hand, the Board of Railway Commissioners has refused to recommend that the Governor-General in Council approve agreement for the amalgamation of the Montreal Terminal Ry. Co. and the Montreal Park and Island Ry. Co., which are Dominion companies, with the Montreal Street Ry. Co., which was incorporated by the Quebec Legislature.

The action brought by Senator Beique on behalf of himself and other shareholders to prevent the amalgamation has been dismissed by the courts.

It was announced in Montreal, Nov. 17, that the M.T. Co. would take over, on Dec. 1. the control of the Montreal Street Ry., the Montreal Park and Island Ry., the Montreal Terminal Ry., and the Public Service Corporation, the amalgamation of which under the new title has been approved by the shareholders. In preparation for this N. and W. Harris, Boston, Mass., who have taken $10,000,000 of bonds, arranged for the transfer from New York of $10,000,000 in gold, with which to take over the interests of the shareholders of the Montreal St. Ry. This it is estimated will absorb $9,000,000. The additional $1,000,000 will be used to take up the underlying bonds of subsidiary companies. It is said that a further issue of $7,000,000 of debentures will be marketed in the near future.

Electric Ry., Finance, Meetings, Etc.

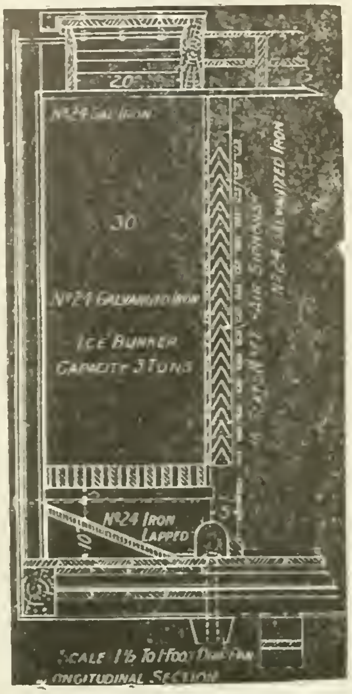
British Columbia Electric Ry.—Gross earnings for Sept., $453,391; working expenses, $282,443; net operating earnings, $170,948; renewal funds, $37,935; net earnings, $133,013; approximate income from investments, $25,000; net income, $158,013, against $311,803 gross earnings; $174,237, working expenses; $137,566, net operating earnings; $22,417, renewal funds; $115,149, net earnings: $20,000, approximate income from investments; $135,149, net income for Sept., 1910. Aggregate gross earnings for three months ended Sept. 30, $1,299,241; net earnings, $441,138, against $897,458 aggregate gross earnings, and $377,856 net earnings for the same period 1910.

Calgary Municipal Railway.—Earnings for October, $35,591.70; operating expenses, $18,027.17; contingent account, 5% of gross receipts, $1,779.58; interest and sinking fund, $5,263.33: net profit, $10,521.62; no. of passengers carried, 865,005; number of miles run, 126,801; revenue per car mile, 28.061c.; operating expenses, per car mile, 13.428c.; profit per car mile, 14.633c.; cost of power per car mile, 4,447c.; proportion operating expenses to revenue, 50.6%.

Following are the figures for the year ended June 30:—earnings, $275,434.51; operating expenses, $139,601.98; interest, $23,220; sinking fund, $9,370; taxes, $2,264.17; net surplus, $87,206.64.

Cape Breton Electric Co.—The regular 3 per cent. dividend on the preferred stock for the half year, and a dividend of 2 per cent. on the common stock were paid Nov. 1.

Grand Valley Ry.—Application has been made for the appointment of a receiver for the G.V.R. Co. The General Accident, Fire and Life Assurance Co. holds $17,000 of the company's bonds



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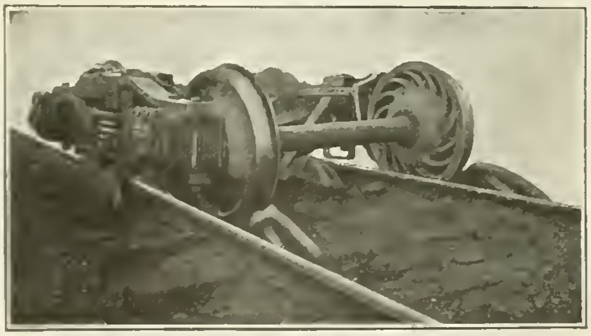

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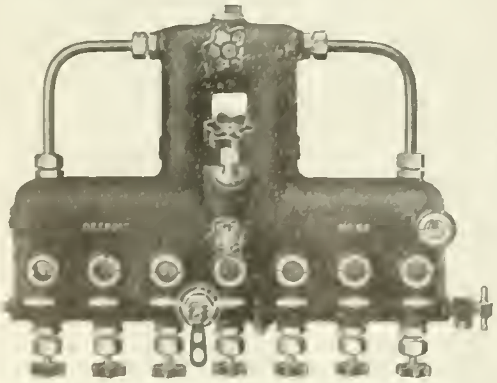

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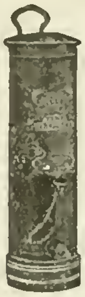
(d) From Killam to Strathcona, Alberta.

2. Amending the Statute relating to the company's power to issue four per cent. Consolidated Debenture Stock for the acquisition of mortgage bonds so as to make it apply also to the debenture stock and other securities of any other railway company, the principal or interest of which has been guaranteed by the company, and for other purposes.

Dated at Montreal this 19th October, 1911.

WALTER R. BAKER,
Secretary.

Pringle, Thompson & Burgess,
Ottawa agents.



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and alleges that the company has issued a larger amount of bonds than the sale of the railway will realize.

The G.V.R. extends from Brantford via Paris to Galt, Ont., and the same interests also own the Brantford St. Ry. and the Woodstock, Thames Valley and Ingersoll Ry.

Halifax Electric Tramway.—Receipts for Oct., $18,153.21, and for two weeks ended Nov. 14, $7,696.27, against $19,455.30 and $7,927.17 for same periods, 1910.

Hamilton St. Ry.—The city's percentage of the company's earnings for the three months ended Sept. 30 was $12,340.67, an increase of $1,797.61 over that for the same period 1910.

London St. Ry.—Gross earnings for Oct., $22,015.12; expenses, $15,414.32; net earnings, $6,600.80; deductions, $2,441.75; net income, $4,159.05, against $21,021.06 gross earnings; $14,866.12 expenses; $6,154.94 net earnings; $2,441.75 deductions; $3,713.19 net income for Oct., 1910. Aggregate gross earnings for 10 months ended Oct. 31, $231,196.26; expenses, $159,864.45; net earnings, $71,331.81; deductions, $24,012.84; net income, $47,318.97, against $211,745 gross earnings; $149,723.10 expenses; $62,022.69 net earnings; $23,945.20 deductions; $38,077.49 net income for same period 1910.

Montreal St. Ry.—Passenger earnings for Oct., $426,116.76; miscellaneous earnings, $16,275.99; total earnings, $442,392.75; operating expenses, $232,201.90; net earnings, $210,190.85; city percentage on earnings, $14,312.19; interest on bonds and loans, $15,777.43; rental leased lines, $607.10; taxes, $5,000; total charges, $35,696.72; surplus, $174,494.13, against $372,487.35 passenger earnings; $14,200.31 miscellaneous earnings; $386,687.66 total earnings; $205,750.06 operating expenses; $180,937.60 net earnings; $12,392.74 city percentage on earnings; $15,052.37 interest on bonds and loans; $552.90 rental leased lines; $4,000 taxes; $31,998.01 total charges, $148,939.59 surplus for Oct., 1910. Expenses per cent. of earnings for Oct., 52.49, against 53.21 in Oct., 1910.

Nelson St. Ry.—Revenue for three months ended Sept. 30, $4,078.85. Passengers carried, 387,397.

Port Arthur and Fort William Electric Ry.—Revenue for Sept., $17,660.99; operating expenses, $8,896.44; net revenue, $8,767.55. Car mileage, 71,066 miles; gross earnings per car mile, 24.852c.; operating expenses per car mile, 12.514c.; net earnings, 12.338c. per car mile.

Regina Municipal Ry.—Receipts for week ending Nov. 4, $1,041; passengers carried, 4,269.

Sherbrooke Ry. and Power Co.—The Quebec Legislature is being asked to authorize the company, among other things, to acquire or sell shares, stock, debentures, bonds or other securities of other companies; to guarantee the payment of principal, interest and sinking funds for the same, and to authorize amalgamation or consolidation of other companies.

Railway earnings for Sept., $9,582; operating expenses, $4,884; net earnings, $4,700. Gross earnings for three months ended Sept. 30, $25,762; operating expenses, $12,461; net earnings, $13,301.

Toronto Ry.—Gross earnings for Oct., $415,756.92; expenses, $204,825.62; net earnings, $210,931.30, against $379,720.88 gross earnings; $188,567.67 expenses; $191,153.21 net earnings for Oct., 1910. Aggregate gross earnings for 10 months ended Oct. 31, $3,936,539.18; expenses, $1,971,101.99; net earnings, $1,965,437.19, against $3,575,658.89; gross earnings, $1,841,334.61; expenses, $1,734,324.28 net earnings for same period 1910.

Toronto Suburban Ry.—There has been filed with the Provincial Secretary at Toronto a discharge of the mortgage made by the City and Suburban Ry. to the Trust Corporation of Ontario, dated Feb. 1, 1893, and a discharge of the mortgage made by its successor, the T.S. Ry., to the National Trust Co., Mar. 1, 1909.

Winnipeg Electric Ry.—Gross earnings for Sept., $321,664; working expenses, $146,140; net earnings, $175,524, against $267,127 gross earnings; $131,969 working expenses; $135,158 net earnings for Sept., 1910. Aggregate gross earnings for nine months ended Sept. 30, $2,825,637; net earnings, $1,433,507, against $2,298,384 aggregate gross earnings, and $1,144,626 net earnings for same period 1910.

Electric Railway Notes.

The Sherbrooke Ry. and Power Co. has received two new pay-as-you-enter cars for its belt line.

G. Gordon Gale,
General Superintendent, Hull Electric Co.

The London and Lake Erie Ry. and Transportation Co. is reported to be in the market for several new cars.

The Guelph Radial Ry. has received two double truck pay-as-you-enter cars from the Preston Car and Coach Co., Preston, Ont.

G. Lee has been appointed acting Agent, Oshawa Ry., Deseronto, Ont., vice P. B. Whiteley, transferred to the audit office for general duties.

The Calgary Municipal Ry. has ordered six 36½ ft. electric pay-as-you-enter car bodies, 46½ ft. long over all, from the Ottawa Car Co., Ottawa, Ont.

The Hull Electric Co. has ordered six electric straight platform, semi-convertible car bodies, pay-as-you-enter type, 50 ft. long over all, from the Ottawa Car Co., Ottawa, Ont.

The Board of Railway Commissioners has approved the Montreal and Southern Counties Ry.'s standard tariff of freight rates between Montreal and Longueuil and intermediate points.

F. H. Williams, M. Can. Soc., C.E., one of the Illinois Traction System's electrical engineers, read a paper on that system before the Canadian Society of Civil Engineers in Montreal, Nov. 9.

The Sandwich, Windsor and Amherstburg Ry. has received two single truck pay-within cars from the Preston Car and Coach Co., Preston, Ont. These cars were described and illustrated in our June issue.

The Winnipeg city council decided Nov. 3 that it will not at present ask the Winnipeg Electric Ry. to put on an all night service. The present service starts at 5.30 a.m., and continues until 2 a.m., or 20½ hours out of the 24.

The Board of Railway Commissioners has approved a revised table of standard passenger fares on the Quebec Ry. Light and Power Co.'s line between Quebec and Montmorency Falls Park, via Beauport Jct., and intermediate stopping places.

The Sherbrooke Ry. and Power Co. has received two 18½ ft. electric pay-as-you-enter, semi-convertible car bodies, 29 ft. long over all, mounted on 2IE trucks, with Westinghouse 101-B-2 motor equipments, from the Ottawa Car Co., Ottawa, Ont.

In an action for damages against the Montreal St. Ry., which came before the courts in Montreal, Nov. 13, it was alleged by the plaintiff, who had been injured by one of the cars carrying freight, that the company did not have the right to move such cars in the city.

The British Columbia Government brought the first case of infraction of the rules made under the Tramways Regulation Act, into court Nov. 1. The B.C. Electric Ry. was charged with allowing passengers to ride on the steps of a certain car. Judgment was reserved on a technicality as to who should prosecute, and as to whether the city or company should be held responsible. The case was dismissed Nov. 10, the magistrate holding that the conductor did not give permission to any passengers to ride on the steps of the car. The passengers rushed on the car, and the conductor had no opportunity to have them put off before it was outside the city boundary.

John W. Williams, whose appointment as Secretary, London St. Ry., London, Ont., was mentioned in our last issue, was born at Detroit, Mich., Sept. 21, 1869. He commenced service with the Detroit and Pontiac Ry., and on the purchase of that railway by the Detroit United Ry., he was Assistant to the General Manager and Purchasing Agent. Prior to his present appointment he had been for some years in the Auditing Department, Detroit United Ry.

G. Gordon Gale, whose portrait appears on this page, was, prior to 1907, assistant engineer, Canadian Rubber Co.'s electrical plant, and from 1907 to Nov., 1908, was Superintendent of Power, Hull Electric Co.; Nov., 1908, to 1909, acting General Superintendent, and since 1909, General Superintendent, Hull Electric Co., Deschenes, Que. He is a graduate of McGill University, and an associate member of the Institute of Electrical Engineers, and of the Canadian Society of Civil Engineers.

Proceedings are being taken against the Quebec Ry. Light and Power Co., for conveying sand and stone on a freight car through the city streets, contrary to a bylaw which stipulates that only passengers shall be carried through the streets. The material is being taken to a new building on the Grande Allee, and the contractor recently waited on the city council committee on the subject, explaining the matter, but the committee stated that as they had no right to act contrary to the bylaw, the case would have to be dealt with in the courts.

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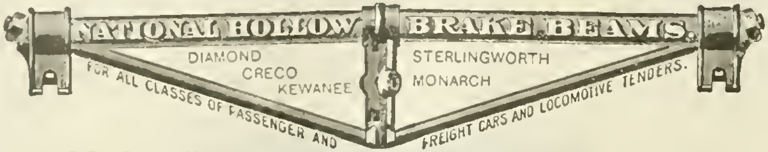
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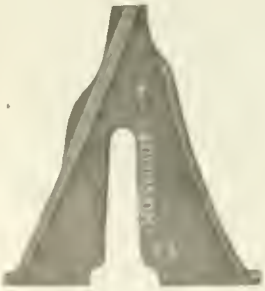

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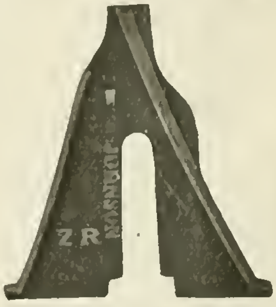


Typo Z right hand

MARINE DEPARTMENT

Dominion Marine Association.

President, F. Plummer, Toronto; Counsel, F. King, Kingston, Ont.

Great Lakes and St. Lawrence River Rate Committee.

Chairman, E. E. Horsey, Kingston, Ont.
Secretary, Jas. Morrison, Montreal.

International Water Lines Passenger Association.

President, W. M. Lowrie, New York.
Secretary, M. R. Nelson, New York.

The Shipping Federation of Canada.

President, A. A. Allan, Montreal; Manager and Secretary, T. Robb, 526 Board of Trade, Montreal.

Ship Masters' Association of Canada.

Grand Master, Capt. J. H. McMaugh, Toronto, Ont.; Grand Secretary-Treasurer, Capt. H. O. Jackson, 376 Huron St., Toronto.

The Vessel Toiler's Machinery.

In previous issues we have given various particulars about the vessel Toiler, which was built in England, and which is now in Canada engaged in the lake trade. The following additional information will be of interest:—

The propelling machinery consists of two Diesel oil engines driving twin screws which develop 180 b.h.p. each at about 250 revolutions per minute. Their

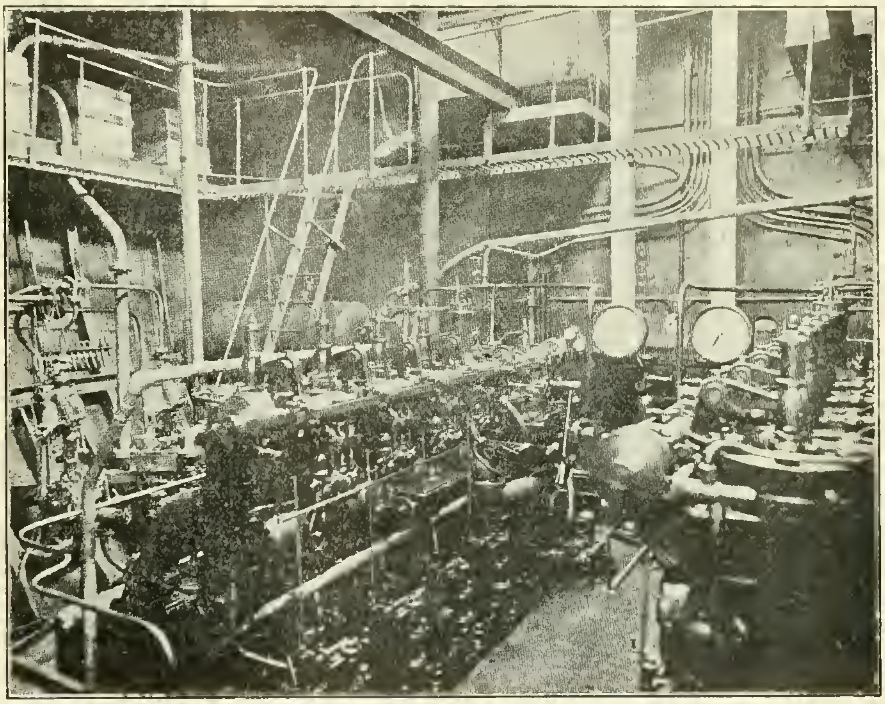
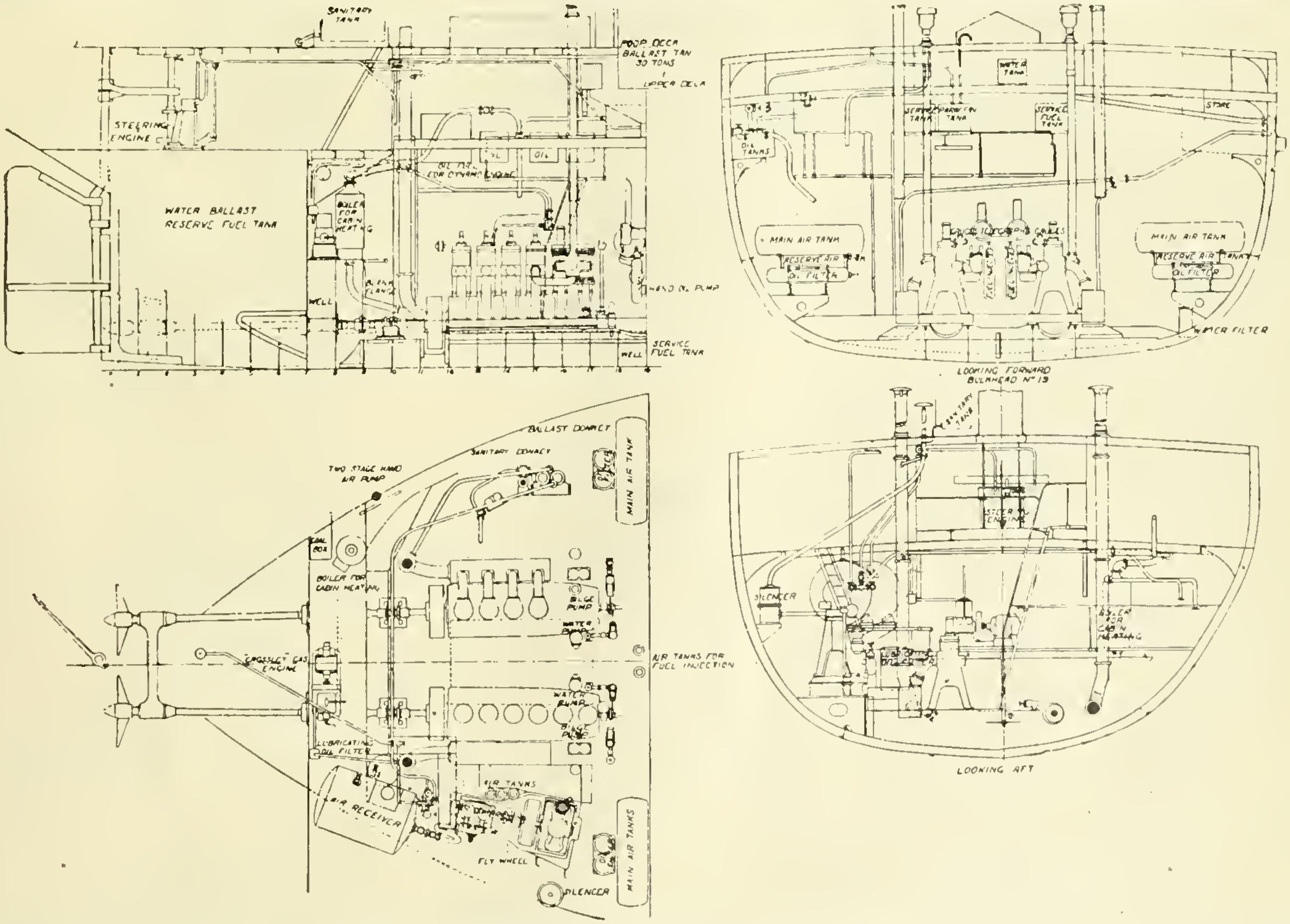


Fig. 2. The Engine Room of The Toiler.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BALLAST TAN 30 TONS
UPPER DECK
STEERING ENGINE
WATER BALLAST RESERVE FUEL TANK
BOILER FOR CABIN HEATING
OIL
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WELL
HAND OIL PUMP
SERVICE FUEL TANK
WATER TANK
SERVICE PARAFFIN TANK
SERVICE FUEL TANK
STORE
OIL TANKS
MAIN AIR TANK
RESERVE AIR TANK
OIL FILTER
WATER FILTER
LOOKING FORWARD BULKHEAD No 19
SANITARY TANK
STEERING ENGINE
SILENCER
BOILER FOR CABIN HEATING
LOOKING AFT
BALLAST CONNECT
SANITARY CONNECT
TWO STAGE HAND AIR PUMP
MAIN AIR TANK
COAL BOX
BOILER FOR CABIN HEATING
BILGE PUMP
WATER PUMP
"CROSSLEY" GAS ENGINE
AIR TANKS FOR FUEL INJECTION
WATER PUMP
BILGE PUMP
LUBRICATING OIL FILTER
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FLY WHEEL
SILENCER
MAIN AIR TANKS

Fig. 1. Arrangement of The Toiler's Propelling Machinery.

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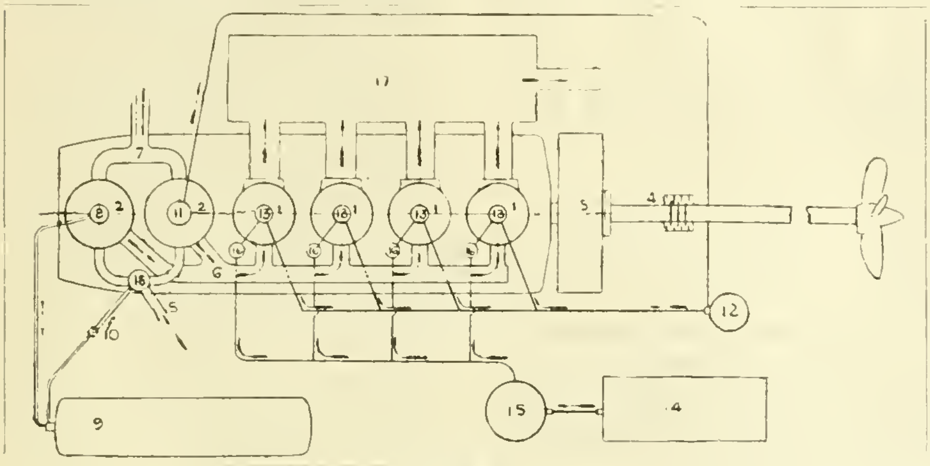

Fig. 3.

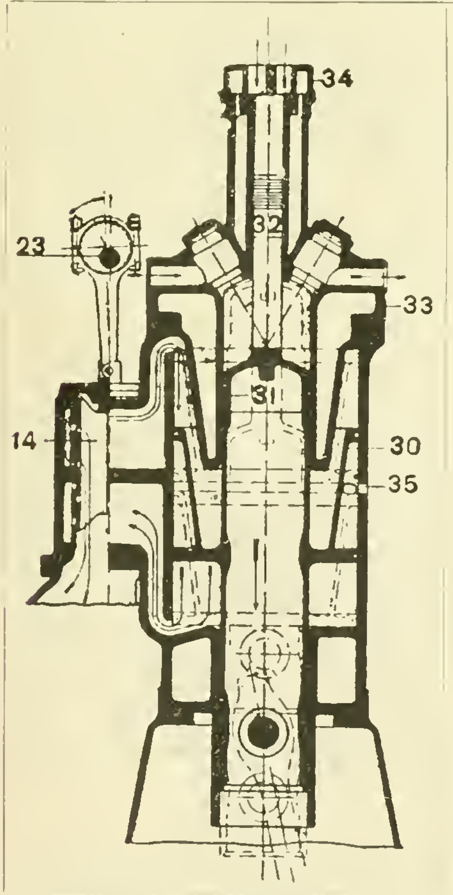

Fig. 4.

arrangement is indicated by sectional drawing, fig. 1, and the photograph, fig. 2. The weight of the engines is only about half that of steam engines and boilers of the same power, while the fuel consumption is only one-fourth the weight of that necessary if coal were being used in the ordinary way, so that there is a very considerable addition to the dead-weight capacity available for cargo, amounting in this case to about 140 tons, compared to the steam-driven ship of similar dimensions. The Toiler is of Canadian canal dimensions, being 248 ft. long, 42½ ft. beam, and 19 ft. molded depth. The cubical capacity available for cargo is also considerably increased both owing to the smaller space occupied by the engines and the fact that fuel can be carried in the double bottom when burning oil. One of the most noteworthy features of the design is the manner in which reversing is accomplished by means of compressed air. Fig. 3 shows the arrangement of the engine in diagrammatic form. The four two-cycle combustion cylinders marked 1 represent the working motor, the two double-acting cylinders marked 2 constituting what are termed the manœuvering motor. Under normal circumstances the manœuvering motor draws air from the atmosphere from the pipe 5 and delivers it slightly compressed through the channel 6 into the working cylinders 1. In the working cylinders this air is compressed to 36-38 atmospheres in order to assist the combustion and the development of power. The products of combustion are driven into the cylinder 17 and pass thence into the open air. When manœuvering the manœuvering motor is connected with a compressed air reservoir 9 instead of the atmosphere by turning the lever 18. The air used during manœuvering is automatically replenished by the air pump 8, which begins to act as soon as the pressure in the reservoir sinks below a certain amount. The liquid fuel is drawn from the tank 14 through the filter 15 by the fuel pump 16, and delivered to the fuel valves 13, being driven thence into the combustion chambers by means of the compressed air supplied from the air pump 11; 3 is the fly wheel and 4 the thrust block.

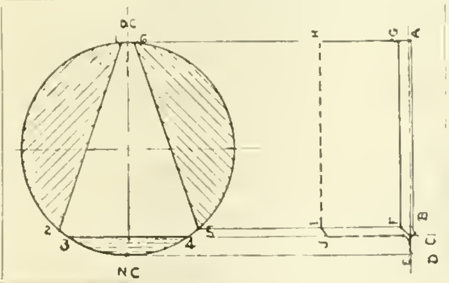

Fig. 5.

The construction and working of the manœuvering cylinders will be better understood from figs. 4 and 5. The circle of fig. 5 shows the order of events during one revolution of the engine, considering this cylinder to act firstly as an air pump under direct running, and secondly, as a compressed air engine when manœuvering. Shortly after the piston has passed the upper dead centre the slide valve opens at 1 and air is drawn into the cylinder until the valve closes at 2 (corresponding to the line A B on the imaginary indicator diagram). From 2 to 3 (B to C) there is a slight decrease in pressure which is neutralized at 3 when the piston passes an opening in the cylinder wall (35 in fig. 4) thus placing the cylinder in communication with the outside air. After the piston passes the lower dead centre this opening is closed again at 4 and compression ensues up to 5 (D to F), after which the compressed air is forced into the channel leading to the working cylinder. When manœuvering, atmospheric air is cut off and compressed air admitted from 1 to 2, the indicator diagram becoming H I J D E D F G.

The action of the internal combustion cylinders is illustrated in fig. 6. Air is supplied, under pressure to the receiver 26 and passes thence through the passage 41, which is laid open to the cylinder when the piston is at the bottom of the stroke. As the piston rises this passage is closed and the air is compresed until at about the top of the stroke a small supply of oil is admitted through the valve 25 and the resulting explosion provides the necessary source of power, the waste gases escaping through the opening 42 as the piston descends. The fuel valve 25 is controlled in the ordinary way by means of cams.

An ingenious method has been adopted for regulating the oil pumps and valves. Briefly the arrangement is such that during the period in which the motor revolves forward after the levers have been partly reversed the pumps supply no oil to the valves, thus avoiding contrary explosions. The manœuvering arrangements have proved very satisfactory in the Toiler and it is claimed that the engine can be changed from full speed ahead to full speed astern more quickly even than a steam engine. On one occasion she was submitted to an unusually severe test on returning to her builders' yard, when she was completely turned around and placed alongside a quay. In 16 minutes no less than 31 manœuvers were accomplished and the pressure never sank below eight atmospheres, the normal being 10 atmospheres.

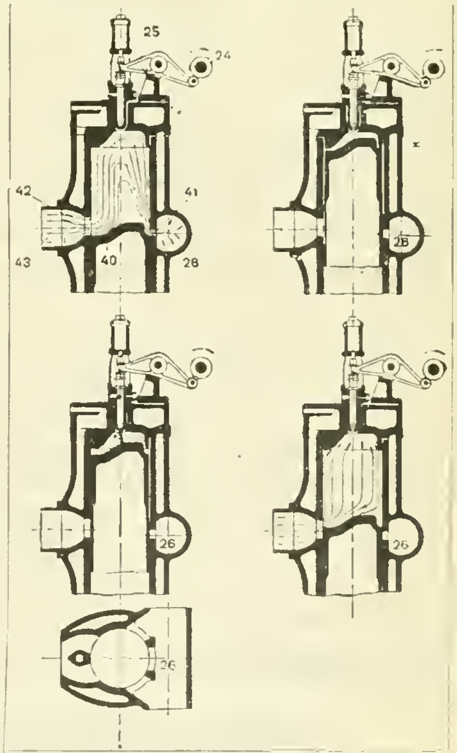

Fig. 6.

The question of auxiliary machinery for the Toiler, in view of the absence of steam, required special consideration. The auxiliaries consist of a ballast donkey pump and a sanitary donkey pump in the engine room, and a capstan aft and a windlass forward on the deck, besides the steering gear. All these are driven by compressed air, which is supplied by a separate compressor driven

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St. Louis ...Dec. 2 St. Paul ...Dec. 16
Philadelphia Dec. 23

Atlantic Transport

New York—London Direct

Minneapolis .Dec. 2 Minnehaha .Dec. 16
Minnetonka .Dec. 9 Minnewaska Dec. 23

Red Star

London, Paris, via Dover—Antwerp

Finland ......Dec. 2 Lapland .....Dec. 20
Zeeland .....Dec. 13 Kroonland ...Dec. 27

White Star

New York—Queenstown—Liverpool

Cedric .. ....Dec. 7 Laurentic ...Dec. 20
Baltic ......Dec. 14 Celtic ....Dec. 28

New York, Plymouth, Cherbourg, Southampton

Olympic ...Dec. 9 Oceanic .....Dec. 16
Olympic .....Dec. 30

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QUEBEC AND LAKE ST. JOHN RAILWAY COMPANY.

Notice is hereby given that application will be made by the Quebec and Lake St. John Railway Company to the Legislative Assembly of the Province of Quebec at its next session for an Act:

(a) To confirm a certain agreement made between the Company, the Railway Share Trust and Agency Company, Limited, and the Canadian Northern Railway Company.

(b) To provide that the terms of such Agreement, having been sanctioned by extraordinary resolutions of the holders of the Company's Prior Lien, First Mortgage and Income Bonds, shall be binding on all holders of such Bonds respectively, whether present or not present at the meetings of the bondholders at which such resolutions were passed;

(c) To authorize the issue of the Company's new debenture stock provided for in the said agreement, and to fix the general form of Trust Deed or Mortgage securing such issue, subject to amendments mutually agreed upon between the parties to the said Agreement;

(d) To provide for the winding up of the Lake St. Joseph Hotel Company and the transfer of its properties to the Company, and the discharge of the existing Trust Deed, and the exchange of securities issued thereunder for the said new debenture stock of the Company;

(e) To amend section 2 of 9 Edward VII., chapter 104, by providing that the authorized branch lines may be constructed from any point on the Company's main or branch lines of railway, and to extend the time for the commencement and completion thereof.

Toronto, November 6th, 1911.

GERARD RUEL,
Chief Solicitor.

ROY, CANNON, PARENT AND FITZPATRICK, Solicitors at Quebec.

◆

CAP DE LA MADELEINE RAILWAY.

NOTICE. The Cap de la Madeleine Railway Company will apply to the Parliament of Canada, at its next session, for an Act declaring its undertaking to be a work for the general advantage of Canada, changing its head office from the Parish of St. Marie Madeleine du Cap de la Madeleine to the City of Montreal, increasing the company's bonding powers, and authorizing it to enter into an agreement with the Canadian Pacific Railway Company for any of the purposes specified under Section 361 of The Railway Act, and for other purposes.

Dated at Montreal, this 26th day of October, 1911.

H. C. OSWALD,
Secretary.

Pringle, Thompson & Burgess,
Ottawa agents.

◆

NOTICE.

The General Railway Signal Company, the owners of the exclusive rights to Canadian patents No. 92323, No. 93127, No. 96256, and No. 97758, issued to Young and Townsend, and covering methods of signaling electrified railways, wishes to call the attention of all possible users of the devices and systems covered by such patents, to the fact that it is prepared to sell and furnish, at short notice, all such devices, and to install such systems upon any railway in the Dominion of Canada.

All inquiries regarding the above should be addressed to the office of the company, Room 506, Eastern Townships Bank, 263 St. James St., Montreal, Que.

by a 30 h.p. Diesel engine. In addition there is a small electric light engine working on paraffin. The cabin heating is accomplished by a hot water system.

◆

Vessels Removed from the Register.

The following vessels were removed from the register during Oct. for the reasons assigned: Steam—A. C. Whitney, Halifax, N.S., 41 tons, broken up; Albani, Brockville, Ont., 39 tons, out of existence; Anglo Saxon, Port Hope, Ont., 43 tons, broken up; Aurora, Quebec, Que., 79 tons, burnt; Bella Fair, Port Hope, Ont., 5 tons, broken up; Belle, Owen Sound, Ont., 5 tons, broken up; Besse and Harry, Halifax, N.S., 13 tons, broken up; C. C. Martin, Midland, Ont., 45 tons, wrecked; Comet, Chatham, Ont., 15 tons, wrecked; Derby, Chatham, N.B., 9 tons, broken up: Flash, Peterboro. Ont., 4 tons, broken up; Frank, Charlottetown, P.E.I., 30 tons, sold to foreigners; John Irwin, Halifax, N.S., 80 tons, foundered; La France, Dawson, Yukon, 169 tons, wrecked; Maple Leaf, Peterboro, Ont., 18 tons, broken up: Roddick, Kenora, Ont., 31 tons, wrecked. Sailing—Alice E. L., Halifax, N.S., 59 tons, sold to foreigners; Annie Amelia, Sydney, N. S., 13 tons, transferred to Newfoundland; Georgiana, James A. Gray, Charlottetown, P.E.I., 91 tons, stranded; Lady Napier, Charlottetown, P.E.I., 210 tons, abandoned at sea: May Bell, St. John, N.B., 76 tons, wrecked: Rough Rider, St. Andrews, N.B., 15 tons, sold to foreigners.

◆

Atlantic and Pacific Ocean Marine.

The Allan Line s.s. Virginian, which sailed from Montreal, Nov. 23, was the last passenger vessel sailing from the St. Lawrence for the 1911 navigation season.

A number of longshoremen struck work at Montreal, Nov. 17, demanding an increase of pay. The matter was settled on Nov. 20, the men returning to work at the old rate, on the understanding that certain conditions of which complaints had been made would be ameliorated.

The C.P.R. s.s. Empress of Britain which arrived at Liverpool, Eng., Nov. 10, reported that she had collided with a small coasting steamboat, off the Calf of Man, south of the Isle of Man. She suffered no damage, but the small vessel put in at the Isle of Man in a waterlogged condition.

The Norwegian steamship Halvdan, which was wrecked at Framboise, about 30 miles west of Louisburg, N.S., recently, was bound from Mexillones to Montreal with a cargo of nitrate, valued approximately at £70,000. She was built this year, was 3,925 tons gross, and insured in Norway at a value of £39,000.

G. M. Bosworth, Vice President, C.P.R., is reported to have stated recently, that the company was considering the establishment of a steamship service between Canada and India, with Calcutta as the chief Indian port, but that no details could be given at present. It is reported from New York that freight is being solicited in the western states for this service.

The C.P.R. will, on the completion of the two Pacific Empresses, now under construction in England, have 76 steamships in service. It is stated that if these were placed end to end they would extend for 3½ miles. The number of employes of the steamship department is given as 12,000 and it is said that 3,000 tons of coal are consumed daily in the operation of the vessels.

A London, Eng., press report states that the British Government has decided not to subsidize a steamship service between Great Britain and Canada, by way of the West Indies, and that it is currently reported that the C.P.R. will, in the near future, establish a service, linking up the islands with Canadian ports, with possible extensions to some South American ports.

The Allan Line has placed separate orders in Glasgow, Sotland, for two steamships for the St. Lawrence route. They will be equipped with four screw turbine engines, of the latest design, with special reversing gear for going astern. Their dimensions will be, length 570 ft., beam 71 ft., depth of hold 45½ ft., and of about 18,000 tons each. The first will be ready for service in May, 1913, and the second in the month following.

The steamship which the Union Steamship Co. of New Zealand has under construction on the Clyde, Scotland, for the Canada-Australia mail route, will be 522 ft. long, 66 ft. beam, and be about 13,000 gross tons, with accommodation for 700 passengers. She will be equipped with twin reciprocating engines and turbine amidships, driving triple screws, and 10 boilers, four of which will be arranged for burning oil fuel.

The Donaldson Line s.s. Letitia, which is under construction at Greenock, Scotland, will, it is expected, sail from Glasgow, Mar. 23 on her maiden trip to St. John, N.B. She is of about 10,000 tons, with engines of 6,000 n.h.p., and is being built for one class cabin passengers and third class, with a total accommodation for 1,410. She will be equipped with all the latest improvements, including a Marconi wireless telegraph installation.

Further attempts were made, during November, to float the wrecked C.P.R. s.s. Empress of China off the Japanese coast. It was anticipated that on the completion of blasting operations to clear a channel, an expected high tide would float her clear. It is stated that the chief damage done is to her plates and frames, and that her bulkheads are all good. Should the attempt be successful, she will be drydocked and repaired. In the meantime the s.s. Monteagle is taking her place until the end of the year.

It is reported in Quebec, that "one of the largest steamship companies in the world," the name of which is not divulged, is planning to run a line to Canada, next year, making its summer terminus, either at Montreal or Quebec. It is not stated where the company's vessels will run from, but the preliminary negotiations took place in New York, and it is stated everything was proceeding in a very satisfactory manner. Two vessels, it is said, will be placed on the route at the commencement of the St. Lawrence season next year, in the freight trade.

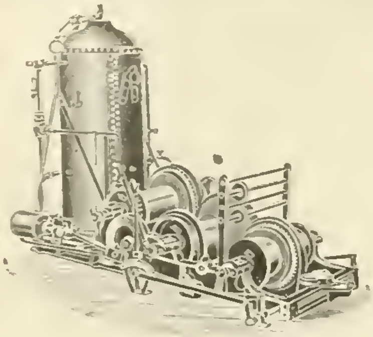
A London, Eng., press dispatch, Nov.

LIST OF STEAM VESSELS REGISTERED IN CANADA DURING OCTOBER, 1911.

Name	No.	Where and When Built.	Engines, etc.	Length	Breadth	Depth	Gross Tons	Reg. Tons	Port of Registry	Owners
Carrick Castle..	130,746	Vancouver, B.C., 1911......	Screw 1 n. h. p. ..	33.0	9.8	4.2	12	8	Vancouver, B.C......	D. Rankin, Vancouver, B.C.
Colima.........	130,607	Philadelphia, Pa., 1904. ..	" 42¼ " ..	96.0	22.0	11.9	200	98	Victoria, B.C.	C.P.R., Montreal.
Ichthus M.......	130,582	West Chezzetcook, N.S., 1911	" ⅕ " ..	32.0	11.6	3.4	6	5	Halifax, N.S.........	R. McLaren, West Chezzetcook, N.S.
La Boheme.....	130,748	United States..	" 2 " ..	35.0	9.0	4.6	11	8	Vancouver, B.C.....	H. S. Sulley, Vancouver, B.C.
Lavina B.......	130,473	Tancook, N.S., 1910	" ⅓ " .	41.2	10.3	5.9	12	11	Lunenburg, N.S... ..	A. Boutillier, Mill Cove, N.S.
Lotys..........	130,581	Halifax, N.S., 1909.	" ⅓ " ..	31.4	6.6	3.0	3	2	Halifax, N.S. ...	E. F. Keefe, Halifax, N.S.
Morgan (The)..	130,275	Port Stanley, Ont., 1911....	" 13½ " ..	70.3	16.4	7.9	50	34	Port Stanley, Ont. ..	C. F. J. and T. H. Morgan, J.O., Port Stanley, Ont.
Phryne	130,749	North Vancouver, B.C., 1911	" 3 " ..	47.2	11.8	6.0	24	16	Vancouver, B.C......	J. H. Wrigley, Vancouver, B.C.
Polly N.S.......	126,920	Little Tancook, N.S., 1911..	" ⅓ " ..	35.7	7.8	3.2	8	6	Halifax, N.S	G. Fournier, Halifax, N.S.
Qualis	130,750	Vancouver, B.C., 1911	" 1½ " ..	40.2	11.3	5.3	16	11	Vancouver, B.C......	J.L. Green & R.A. Wooldridge, J.O., Vancouver, B.C.
R. G. Shaw.....	126,230	Buffalo, N.Y., 1878..	" 5 " ..	40.0	12.0	6.2	28	16	Sarnia, Ont	W. H. Reid, Sarnia, Ont.
Robert G. Cann	130,623	Shelburne, N.S., 1911.....	" 41¼ " ..	119.0	24.6	9.4	265	99	Yarmouth, N.S.......	H. Cann & Son, Yarmouth, N.S.
Satsuki	130,756	Sea Island, B.C., 1911 . ..	" 2½ " ..	49.5	11.7	6.4	26	17	Vancouver, B.C......	M. Endo, Fraser River, B.C.
Sheileena ...	130,751	Hong Kong, China, 1911....	" 3⅕ " ..	52.8	12.6	4.8	35	23	"	W. Farrell, Vancouver, B.C.
Sir Hy. Harness	57,886	East Cowes, Eng., 1896.	" 50 " ..	85.0	18.0	9.3	100	59	Halifax, N.S.	C. G. Brister, Halifax, N.S.

LIST OF SAILING VESSELS AND BARGES REGISTERED IN CANADA DURING OCTOBER, 1911.

Name	No.	Where and When Built	Rig	Length	Breadth	Depth	Reg. Tons	Port of Registry	Owners
Alma M..........	130,475	Tancook, N.S., 1907.........	Schr.	43.6	10.8	6.6	16	Lunenburg, N.S.....	H. Miller, Eastern Points, N.S.
E. C. E. 16.......	130,752	Vancouver, B.C., 1910	Scow	78.5	30.0	7.5	158	Vancouver, B.C.....	Evans, Coleman & Evans, Vancouver, B.C.
E. C. E. 17.......	130,753	Port Mellon, B.C., 1910.......	"	78.0	29.8	7.5	157	"	" " "
E. C. E. 18.......	130,754	Vancouver B.C., 1911.	"	83.3	29.9	8.3	185	"	" " "
F. M. Toro.. ..	130,728	Lunenburg, N.S., 1911	Schr.	106.8	26.3	10.4	100	Lunenburg, N.S......	F. Corkum, M.O., Lunenburg, N.S.
Glendale.........	130,424	Waldoboro, Me., 1872...	"	41.0	13.0	5.0	14	St. Andrews, N.B ...	T. O. Mitchell, Campobello, N.B.
H. S. M. D. .	130,755	Vancouver, B.C., 1911........	Scow	77.3	32.1	6.6	148	Vancouver, B.C	British Columbia Mills Timber & Trading Co., [Vancouver
Hattie M. J.......	130,472	Tancook, N.S., 1909	Schr.	42.2	10.4	5.4	12	Lunenburg, N.S	W. I. Harnish, et al, Mill Cove, N.S.
Hugh John.... ..	111,416	Lockeport, N.S., 1900........	"	104.1	24.9	10.1	119	Halifax, N.S.	C. W. Anderson, Sherbrook, N.S.
Jean Joseph......	126,932	Chicoutimi, Que., 1910.	"	79.0	21.6	5.3	50	Quebec, Que.........	J. Levesque, Chicoutimi, Que.
Legere.....	126,933	Bic, Que., 1910.	"	86.8	25.0	7.5	82	"	N. A. St. Pierre, Bic, Que.
M. G. C. C. No. 1	130,535	Welland, Ont., 1911	Scow	101.0	30.0	8.0	401	Montreal	Montreal General Contracting Co., Montreal.
Pearl Beatrice H.	130,727	Tancook, N.S., 1911.........	Schr.	56.2	14.0	7.6	32	Lunenburg, N.S... ..	W. Hubley, M.O., Indian Harbor, N.S.
Shant-Alee	130,474	" 1908	"	42.2	10.3	5.3	11	" ...	R. Wight, Blue Rocks, N.S.



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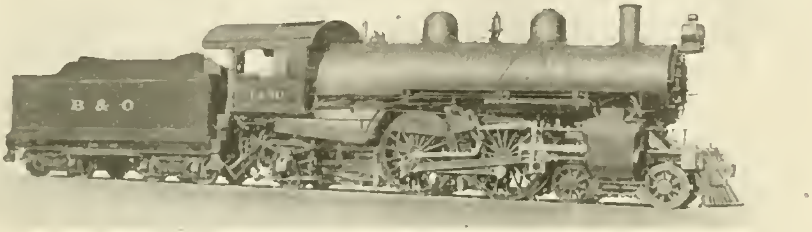

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J. G. ALLAN, Vice-President.
JAMES A. THOMSON, Secretary

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New Seamless Steel Trolley Poles

If you CANNOT CUT those HARD CASTINGS don't give up in despair,
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NOVO SUPERIOR HIGH SPEED STEEL
Has already saved many castings from the scrap heap.
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11, stated that it had been announced from Rotterdam, Holland, that a steamship line would shortly be inaugurated with fortnightly sailings from Rotterdam to Canada and the United States, the undertaking being under C.P.R. auspices and financed by that company and a company of Rotterdam bankers. G. M. Bosworth recently denied that the C.P.R. would operate a steamship line between Rotterdam and the United States in connection with the New York, New Haven and Hartford Rd. A later dispatch states that the scheme is financed in Rotterdam by local bankers only, and that they have purchased two vessels from the C.P.R.

The Union Steamship Co. is reported to have completed negotiations whereby the Canadian Mexican Pacific Steamship Co. has been acquired, as from Jan. 1, 1912. J. H. Welsford, of Liverpool, Eng., President, Union Steamship Co., has spent some time in Vancouver recently, in consolidating the interests of his company, and as announced in our last issue, has also acquired the Boscowitz Steamship Co., which will still be operated under its own name. It is stated that, on the opening of the Panama canal, the Union Steamship Co., with its subsidiaries, will operate in conjunction with Welsford and Co.'s vessels now running in the trans-Atlantic service, under the name of the Gulf Transport Line.

W. E. W. Jackson, of the Dominion Meteorological Observatory, who recently returned from a survey trip in Hudson Bay, on behalf of the Government, is reported to have stated that the Hudson Straits are only open for a short period each year, and when he left on Aug. 10, they were almost filled with ice. The bay itself is open much longer. Though he does not say that navigation is impossible, he holds that on the point of cost, the route could not compete with the St. Lawrence route, as on account of the special construction of vessel required, the slow speed, etc., the freight charges, in order to meet the expense would have to be higher than usual, rendering transportation by that route prohibitive.

Maritime Provinces and Newfoundland.

The Norwegian barque Antigua was driven ashore at Martin River, Nov. 17, and completely wrecked, 12 of a crew of 15 being drowned.

The Reid Newfoundland Co.'s s.s. Clyde, which ran ashore at Little Bay, Nfld., Nov. 5, was released Nov. 7 by H.M.S. Brilliant, apparently undamaged. She immediately resumed her service between Newfoundland and Labrador.

The Senlac Steamship Co.'s s.s. Senlac, managed by Wm. Thomson and Co., St. John, N.B., has been sold to a British firm for £1,500. She was built at St. John in 1904, and is screw driven by engine of 66 n.h.p. Her dimensions are, length, 182.4 ft.; breadth, 33 ft.; depth, 16.1 ft.; tonnage, 1011 gross, 615 register.

The steamboat Electra, owned by W. A. Beattie, Picton, N.S., which stranded recently near Margaree, on the Cape Breton coast, has been abandoned as a total wreck, having broken up during a storm. She was built at Arcadia, N.S., in 1887, and was screw driven by engine of 25 n.h.p. Her dimensions were, length 85.9 ft., breadth 16.9 ft., depth 8.2 ft.; tonnage, 107 gross, 78 register. An inquiry is being held into the cause of the loss.

The steamship Robert G. Cann, which has been built by the New Burrill-Johnson Iron Co., Yarmouth, and J. McGill, Shelburne, recently underwent her trials satisfactorily, maintaining a speed of 12 knots an hour. In addition to commodious passenger accommodation, there is hold capacity for 1,200 barrels. She is equipped with compound surface condensing engines of 41 n.h.p., supplied with steam by a horizontal boiler, at 135 lbs., steam steering gear, two steam winches, steam pumps, steam heating, electric lighting, etc. Her dimensions are: length, 119 ft., beam 24½ ft., depth of hold 9½ ft., tonnage 265 gross, 99 register.

Proposals are again being submitted to the Government with a view to obtaining some compensation for bondholders and shareholders in the defunct Chignecto Marine Transport Ry. Co., which had a charter to build a railway for the trans-shipment of vessels across the isthmus which divides the Bay of Fundy and Northumberland Strait. The company was formed in 1882, and in 1886 was granted a subsidy by the Government of the day amounting to $170,000 for 20 years. The charter expired in 1893, but some work was done subsequently, on the understanding, it is claimed, that the charter would be renewed and the subsidy re-voted. This, however, it was decided not to do. It is stated that about $4,000,000 was spent in the construction.

The Dominion Government has, according to a number of daily and other papers, awarded a contract to the British Dry Dock and Shipbuilding Co. for the construction of a dry dock and shipbuilding plant at Sydney, N.S., at an estimated cost of $4,500,000. The statement, as printed, is obviously incorrect. The facts are that the company has recently been incorporated with a capital of $10,000,000, with the object of building a dry dock and shipbuilding plant at some point in the Maritime Provinces, probably at Sydney, chiefly with the view of tendering for the construction of the proposed vessels for the Canadian navy. It was recently reported that the company's tender was one of the lower ones sent in, and that probably it would receive an order for some of the vessels, which would be built. Sir Henry Pellatt, who is chiefly interested in the concern, with the Fairfield Co., Glasgow, Scotland, and John Brown and Co., Middlesbrough, Eng., stated some time ago that unless the company received a Government order for some of the proposed naval vessels, the dock, etc., would not be proceeded with, as far as his company was concerned. The only connection the Government has with the proposed plant is in regard to the question of a subsidy, and before any subsidy could be granted, full plans and details would have to be submitted and approved by the Public Works Department. Since the incorporation of the company, and the receipt of tenders for naval vessels, a change of Government has taken place.

Province of Quebec Marine.

The Minister of Marine visited Montreal, Nov. 8, to inspect the works in progress in the harbor.

The work in connection with the laying of the foundations of the new concrete lighthouse on St. Helen's island was commenced recently.

C. C. Ballantyne, one of the members of the Montreal Harbor Commission, announced, Nov. 9, that he would shortly retire in order to devote more time to his own affairs. He was recently elected a director of the Merchants Bank.

W. I. Gear, of the Robert Reford Co., Montreal, addressed the Nomad's Club, there, Nov. 8, on the future of Montreal as a port, dealing with the question of the present route from the Great Lakes to Montreal, and the proposed Georgian Bay canal route.

At a meeting of the Richelieu and Ontario Navigation Co.'s directors, Nov. 2, the question of purchasing four additional vessels was considered. No decision was arrived at, but it was considered imperative that the company's fleet be increased in the near future.

The Richelieu and Ontario Navigation Co. has under consideration plans for a ferry steamboat for operation beween Montreal and Longueuil. It will probably be double ended, with accomodation for 3,000 passengers, and be in readiness for operation in 1913.

Chantier Maritime de St. Laurent, Ltd., has been incorporated under the Dominion Companies Act, with a capital of $50,000 and office at St. Laurent, Ile d'Orleans, Que., to carry on the business of shipbuilders and builders of works of all kinds relating to navigation and the maritime trade.

The St. Lawrence Dry Dock and Shipbuilding Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $1,000,000, and office at Quebec, Que., to build, own and operate all kinds of vessels, wharves, docks, dry docks, dredging equipment, machinery, etc. The incorporators are: L. Kent, R. Wall, J. Desautels, C. Donohue, Montreal, and J. B. Craven, New York.

The Montreal Insurance and Vessel Agency, Ltd., has been incorporated under the Dominion Companies Act, with a capital of $50,000, and office at Mont-

LAKE GRAIN SHIPMENTS.

The following statement, prepared by F. E. Gibbs, Grain Inspector, Fort William, Ont., shows the bushels of grain shipped by vessels from Fort William and Port Arthur, of the 1910 crop, from Sept. 1 to Oct. 31, with ports of destination. The last two figures in each column represent lbs.:

Destination	Wheat	Oats	Barley	Flax
Buffalo	8,925,818.30		83,539.07	
Depot Harbor	67,700.00	105,000.00		
Erie	409,028.00			
Goderich	1,557,084.30	596,639.28	37,333.12	19,745.17
Kingston	2,434,973.00	165,962.20	164,798.04	7,814.16
Montreal	1,933,673.30	635,022.18	11,091.06	14,064.22
Midland	45,480.10	28,000.00		
Meaford	46,519.50			
Owen Sound	341,849.20	481,315.31	106,919.32	
Prescott		12,282.32		
Point Edward	175,000.00	149,000.00		
Port Colborne	1,784,123.20	20,000.00		
Port Stanley	50,000.00			
Quebec		90,005.00		
Tiffin	849,408.10			
Victoria Harbor		176,575.24		
	18,670,658.20	2,459,784.17	403,681.13	41,622.55
Same period 1910	19,732,543.20	2,210,772.15	324,551.25	400,034.24

In addition to the above, 3,964.09 bushels of rye were shipped to Kingston, and 4,191.40 bush. of screenings to Montreal.

real, to carry on a general financial agency and brokerage business, and act as agents or brokers for steamship, railway, transportation and express companies. G. W. MacDougall, L. Macfarlane, C. A. Pope, G. Barclay, and J. G. Cartwright, Montreal, are the incorporators.

The British North American Dry Dock and Shipbuilding Co., Ltd., has been incorporated under the Dominion Companies Act, with $1,000,000 capital and office at Quebec, Que., to build and operate vessels, wharves, dry docks, elevators, tramways, terminals, and to act as carriers of passengers and freight. The incorporators are, W. Price, J. F. Burstall, V. Chateauvert, J. B. E. Letellier, P. J. E. Bazin, W. Shaw, N. Drouin, W. M. Dobell and J. T. Ross, Quebec.

Ontario and the Great Lakes.

The Richelieu and Ontario Navigation Co. has declared a quarterly dividend at the rate of 8% per annum, an increase of 2%.

The Toronto Harbor Commissioners have decided that the harbor must be made deep enough for vessels drawing 24 ft.

The Hamilton city council is applying to Parliament for the appointment of a harbor commission to manage the waters of Burlington Bay.

The Northern Navigation Co. is considering the question of lengthening its steamboat Huronic during tse winter by 50 ft., and increasing the engine power.

The Department of Public Works has awarded the contract for the construction of a breakwater at Wheatley, at a cost of about $28,000, to W. Bermingham.

Negotiations are in progress for the formation of a joint harbor commission for the control of the harbors and water front properties of Fort William and Port Arthur.

Capt. Jas. McMaugh, who retired from the Toronto Ferry Co.'s service a short time ago and who had been connected with the navigation of the Great Lakes for several years, died in California, recently.

The Northern Navigation Co. announced, Nov. 15, that the report that the s.s. Hamonic left Sarnia, Nov. 12, on her last trip of the season, is in error. She will run until Dec. 6, with the company's other vessels.

The Prescott and Ogdensburg Ferry Co.'s steamboat City of Belleville, which drifted on the rocks at Big Island recently, through the breaking of the rudder chains, was taken to Ogdensburg, where repairs to her hull were undertaken.

The Peterborough and Lake Simcoe Navigation Co.'s fleet, consisting of the steamboats Otonabee, Manita, Monarch and Water Lily, and four barges, with the wharf and storehouse at Ashburnham, is offered for sale by tender in one or more lots.

Press reports from Collingwood state that the Western Steamship Co. will have its steamboat J. A. McKee length-

CANADIAN PACIFIC RAILWAY COMPANY.

Dividend Notice.

At a meeting of the Board of Directors, held to-day, a dividend of two and one-half per cent. on the Common Stock, for the quarter ended 30th September last, being at the rate of seven per cent. per annum from revenue and three per cent. from interest on the proceeds of land sales, and from other extraneous assets, was declared payable on 2nd January next to Shareholders of record at 3.00 p.m. on 1st December next.

By order of the Board.

W. R. BAKER,
Secretary.

Montreal, November 13th, 1911.

ESQUIMALT & NANAIMO RAILWAY.

NOTICE.—The Esquimalt & Nanaimo Railway Company will apply to the Parliament of Canada, at its next session, for an Act authorizing it to construct a branch from a point or at or near the North fork of Oyster River on the railway authorized by paragraph (a) of section 2, of chapter 92 of the Statutes of 1906, thence in a northerly and northwesterly direction to a point on or near Hardy Bay on the West Coast of Vancouver Island, and increasing the company's bonding powers; and for other purposes.

W. F. SALISBURY,
Secretary.

Pringle, Thompson and Burgess,
Ottawa agents.

SOUTH ONTARIO PACIFIC RAILWAY COMPANY.

NOTICE. The South Ontario Pacific Railway Company will apply to the Parliamemnt of Canada at its next session for an Act authorizing it to construct and operate a railway from a point at or near Hamilton, in a southerly and southeasterly direction, to a point on the Niagara River in the Province of Ontario, and increasing its bonding powers, and for other purposes.

Dated at Montreal this 8th November, 1911.

H. C. OSWALD,
Secretary.

Pringle, Thompson and Burgess,
Ottawa Agents.

ALBERTA RAILWAY & IRRIGATION COMPANY.

NOTICE is hereby given that the Alberta Railway and Irrigation Company will apply to the Parliament of Canada, at its next session, for an Act authorizing the company to issue mortgage bonds secured upon the company's railways and branches for the purpose of retiring prior mandatory securities, improving its railways, and for other purposes.

Dated at Montreal, this 6th November, 1911.

H. C. OSWALD,
Secretary.

Pringle, Thompson and Burgess,
Ottawa Agents.

KOOTENAY CENTRAL RAILWAY.

NOTICE.—The Kootenay Central Railway Company will apply to the Parliament of Canada, at its next session, for an Act authorizing it to construct a branch from a point on the Crow's Nest Branch of the Canadian Pacific Railway at or near Galloway, in the Province of British Columbia, in a southerly direction to the International Boundary, and extending the time within which it may construct the railways heretofore authorized, and for increasing the company's bonding powers; and for other purposes.

Dated at Montreal this third day of November, A.D. 1911.

H. C. OSWALD,
Secretary.

Pringle, Thompson and Burgess,
Ottawa Agents.

MANITOBA & NORTHWESTERN RAILWAY.

NOTICE.—The Manitoba and Northwestern Railway Company of Canada will apply to the Parliament of Canada, at its next session, for an Act authorizing it to construct a branch from a point at or near Theodore in a westerly direction to a junction with the Pheasant Hills Branch of the C.P.R. between Govan and Lanigan in the Province of Saskatchewan, and for other purposes.

Dated at Montreal, this 25th October, 1911.

H. C. OSWALD,
Secretary.

Pringle, Thompson & Burgess,
Ottawa agents.

CANADIAN PACIFIC RAILWAY.

NOTICE.—The Canadian Pacific Railway Company will apply to the Parliament of Canada, at its next session, for an Act authorizing it to enter into an agreement with the Quebec Central Railway Company for any of the purposes specified in section 361 of The Railway Act, and to lease the railways of the said company, and for other purposes.

Dated at Montreal, 2nd November, 1911.

W. R. BAKER,
Secretary.

Pringle, Thompson and Burgess,
Ottawa Agents.

The Victoria Rolling Stock & Realty Co. of Ontario, Limited.

Notice is hereby given that a dividend of three per cent. on the paid-up capital stock of the Company for the half-year ended Nov. 30th, 1911, has been declared payable Dec. 1st, 1911, to the shareholders on record as of the 30th of Nov., 1911.

By order of the Board.

G. T. CHISHOLM, Secretary.

Toronto, Nov. 20th, 1911.

EVERYBODY IS GOING into heavier cars and equipment, and of course heavier Dinkeys. Come along. We are ready for you. All sizes in stock.

VULCAN IRON WORKS

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ened during the winter. We are, however officially advised that though it has been under consideration, it is not intended to do it this winter.

The Western Navigation Co.'s steamboat Kaministiquia is to be lengthened at Port Arthur by 76 ft. during the winter. She was formerly known as Imperial, and was built at Toronto in 1886, and rebuilt and renamed at Port Arthur in 1906. She is now 109 ft. long.

Press reports from London, Ont., state that a proposal is being considered to dredge the River Thames from Chatham to London, to enable steamboats to come up to the city. It is estimated that in addition to dredging, the installation of four locks between Chatham and London would be all that is necessary.

Press reports from Montreal, Nov. 11, stated that negotiations had been reopened between the Richelieu and Ontario Navigation Co., and shareholders of the Niagara Navigation Co., with the view of merging the two interests, and that Sir Henry Pellatt was conducting the negotiations for the R. & O. N. Co. Sir Henry has denied this.

The Ministers of Railways and Canals is reported to have stated, Nov. 7, that he would not be able to inspect the proposed route of the new Welland canal, until after the first session of Parliament, after which inspection the Government would consider the question of going ahead. It was probable that a year or more would elapse before anything definite was settled.

The Ontario and Ohio Navigation Co., a subsidiary of the London and Lake Erie Ry. and Transportation Co., is reported to have plans prepared for a second steamboat to ply between Port Stanley and Cleveland. S. W. Mower, General Manager, is reported to have stated recently, that though the plans were ready, nothing definite about ordering a new vessel had been done.

The Dominion Government has awarded a contract to Pratt and Hambly, Midland, Ont., for the construction and equipment of a wireless telegraph station at Sault Ste. Marie, Ont. A site is said to have been obtained at Pim Hill, about half a mile north of the old wireless station. Work is said to have been commenced, and it is expected to be completed by Mar. 1, 1912.

The steamboat John Sharples, which ran ashore on the Gallop Islands in Dec., 1910, and which has been lying at Garden Island since it was released in the following spring will, press reports say, be taken to Cleveland or Buffalo, where it is considered there is better opportunity for its sale. The underwriters who have had the sale in hand for some time, are reported to have refused $27,500.

The steamboat Forest B, while running between Kenora and Rainy River, struck a rock to the south of the Little Traverse in the Lake of the Woods, Nov. 8, and foundered. She was built at Rainy River in 1895, and re-built there in 1910, and was formerly named Brandon and Edna Bridges. She is screw driven with engine of 4 n.h.p., and is 75 ft. long, 17 ft. broad, 6 ft. deep, 88 tons, gross, 60 register.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above tidewater, for October, as follows: Superior, 602.23; Michigan and Huron, 579.60; Erie, 571.53; Ontario, 244.62. As compared with the average October levels for the past ten years, Superior was 0.64 ft. below; Michigan and Huron 1.14 ft. below; Erie, 0.62 ft. below, and Ontario, 1.25 ft. below. It was anticipated that during November Superior would fall 0.2 ft. and the other levels 9.3 ft.

Polson Dry Dock and Shipbuilding Co., Ltd., has been incorporated under the Dominion Companies Act, with a capital of $1,000,000 and office at Toronto, to carry on the business of engineers, dredgers, contractors, shipowners and shippers, carriers by land and water, etc., to build, own and operate all kinds of vessels and dredging equipment, wharves, docks, dry docks, harbors, breakwaters, etc., and in connection therewith to build and operate tramways, terminals and railway sidings on its own lands.

The Canadian Lake and Ocean Navigation Co.'s s.s. Turret Cape, operated by the Merchants Mutual Line, Toronto, was reported hard ashore on the Middle Bank, near Cove Island, Lake Huron, Nov. 20. She left Point Edward on the previous day, light, for Port Arthur, and was caught in a storm. It is feared she is a total loss. She was built at Sunderland, Eng., in 1895, and was screw driven, with engine of 250 n.h.p. Her dimensions were, length 253 ft., breadth 44 ft., depth 19.4 ft.; tonnage, 1,827 gross, 1,142 register, and she is registered in England. It has since been reported that she has been abandoned to the underwriters.

The lake freighter Toiler, of which we have given a description previously, and the engines of which are described and illustrated on another page, is being operated by C. I. de Sola, Montreal, for the builders. She brought, from England, a cargo of pig iron for Halifax, and scoria blocks for Montreal, and after unloading, proceeded to Port Colborne, light, there taking on a cargo of 94,000 bush. of grain, the largest single cargo to pass through the Welland canal, for Montreal. Her next trip was from Montreal to Charlotte, N.Y., light, where she loaded coal for Montreal, afterwards proceeding to Kingston, where she is berthed for the winter.

◆

Manitoba, Saskatchewan and Alberta

Navigation on Lake Winnipeg was closed for the season, Nov. 5, on the arrival of the Dominion Government steamboat Lady of the Lake at Selkirk.

The municipal council of Assiniboia, Man., is applying to the provincial government to build a lock on the Assiniboine River, and to dredge a channel from where it joins the Red River, to Headingly, to enable steamboats to reach that point.

H. J. Black, Winnipeg, is receiving tenders for one large steam tug, three barges, one ship barge, one sand dredge, three derricks from three to six tons capacity, one stone crusher, with the requisite boilers and engines for same, to be built on the Red River, or Lake Winnipeg.

An Ottawa press dispatch of Nov. 7 states that the Public Works Department will shortly call for tenders for the construction of approaches to the bridge at the St. Andrews locks, on the Red River, below Winnipeg. The bridge has already been built, but without the proper approaches, full use cannot be made of it.

The Manitoba Gypsum Co., which operated some small steamboats on Lake Manitoba, in connection with its business, has disposed of them to Capt. Pollock, of the steamboat Wolverine, as the railway to its works having been completed it has no further use for the vessels. The boats will, it is stated, be taken to Lake Winnipeg, by way of the Saskatchewan River.

The engineers engaged on survey work on the Saskatchewan River between Winnipeg and Edmonton, have completed their work and will submit a report to the Department of Public Works shortly. It is proposed to establish a 6 ft. waterway between Lake Winnipeg and Edmonton by way of the that such a route will prove a valuable aid in transporting coal and grain. Saskatchewan River, and it is claimed

◆

British Columbia and Pacific Coast Marine.

The official trip of the Government tug, Point Ellice, took place on Burrard Inlet, Nov. 11, and the tug was taken over by the Dominion Public Works Department.

The C.P.R. management has decided to build another steamboat for the Kootenay Lakes, but we were advised recently that a contract had not been let for it and that the details had not been fully decided.

The C.P.R. British Columbia Coast Service s.s. Princess Beatrice, which ran aground on Noble Island, Oct. 14, and which was later released with some damage to her bow and stern, is being repaired at Esquimalt.

The Metropole Transportation Co., Ltd., has been incorporated under the B.C. Companies Act, with a capital of $25,000 and offices at Vancouver, to operate steam and other vessels, and to

SAULT STE. MARIE CANALS TRAFFIC

The following commerce passed through the Sault Ste. Marie Canals in October:

Articles			Canadian Canal	U. S. Canal	Total
Copper	Eastbound	Short tons	3,854	17,278	21,132
Grain	"	Bushels	2,287,976	2,281,521	5,109,497
Building stone	"	Short tons	....	....	....
Flour	"	Barrels	496,040	869,390	1,365,430
Iron ore	"	Short tons	3,321,706	1,253,890	4,575,096
Pig iron	"	"	1,833	5,476	7,309
Lumber	"	M. ft. B.M.	2,073	80,159	82,232
Silver ore	"	Short tons	....	....	....
Wheat	"	Bushels	16,917,568	2,968,094	19,885,662
General merchandise	"	Short tons	3,387	16,793	20,180
Passengers	"	Number	1,314	536	1,850
Coal, hard	Westbound	Short tons	66,830	217,650	284,480
Coal, soft	"	"	370,753	1,444,235	1,814,988
Flour	"	Barrels	....	....	....
Grain	"	Bushels	....	250	250
Manufactured iron	"	Short tons	20,454	23,911	44,365
Iron ore	"	"	3,136	....	3,136
Salt	"	Barrels	12,922	57,579	70,501
General merchandise	"	Short tons	77,869	85,735	163,604
Passengers	"	Number	1,217	802	1,519
Vessel passages		Number	949	1,624	2,573
Registered tonnage		Net	2,821,581	3,349,560	6,171,141
Freight—Eastbound		Short tons	8,937,749	1,662,763	5,600,512
" —Westbound		"	540,888	1,780,172	2,321,060
Total freight		"	4,478,637	3,442,935	7,921,572

carry on a general ship owning and shipping business.

The auxiliary schooner Elsie Bradford, sprang a leak and sank, near the Entrance island lighthouse, Nanaimo, Nov. 4. She was formerly a sailing vessel, named Selma, and was built at Victoria in 1893, her dimensions being, length 47.5 ft., breadth 13.8 ft., depth 6.8 ft.; tonnage, 23 gross, 10 register. She was equipped with a gasoline engine of 6 n.h.p., driving a screw.

The British Columbia Public Works Department has purchased the small steamboat Faloma for departmental work. She was built at Vancouver in 1910, and is equipped with engine of 5 n.h.p. driving a screw. Her dimensions are, length 63.3 ft., breadth 12.2 ft., depth 7.6 ft.; tonnage, 33 gross, 22 register.

Armstrong, Morrison and Co., Vancouver, have sold out their wharf and waterfront properties there to Champion and White. The property includes the steamboat Armoco, built at Vancouver in 1907. She is screw driven with engine of 10½ n.h.p., and her dimensions are, length 56.5 ft., breadth 14.5 ft., depth 7.2 ft.; tonnage, 46 gross, 32 register.

During the past summer the Dominion Government survey steamboat Lillooet, completed the survey of the channels south of the Skeena River to the northern point of Pitt island, and also carried out other work in Hecate straits, near Graham Island, and surveyed the entrance to Skidegate Inlet. She is completing the season's work at Cousins Inlet, surveying Ocean Falls harbor.

The contract for the conversion of the Grand Trunk Pacific Coast Steamship Co.'s steamships Prince Rupert and Prince George to oil burners, has been awarded to the British Columbia Marine Railway Co., Esquimalt. The Dahl system of oil burners is specified, includ-

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Canada Iron Corporation, Ltd...Montreal.
The Holden Co., Ltd. ....Montreal.

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Am. Brake Shoe & Fdry. Co.Mahwah, N.J.
Canada Iron Corporation, Ltd...Montreal.
Dorner Railway Equip. Co....Chicago, Ill.
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T. McAvity & Sons ....St. John, N.B.

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Canadian Car & Foundry Co.. .Montreal..
Crossen Car Mfg. Co. . ..Cobourg, Ont.
Lumen Bearing Co ... West Toronto, Ont
Russel Wheel & Fdry Co. .Detroit, Mich
Titanium Alloy Mfg. Co. ..... Montreal

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Corbet Fdry Co., Ltd Owen Sound, Ont
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Lumen Bearing Co West Toronto, Ont.
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Russel Wheel & Fdry Co.....Detroit, Mich.

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Canada Iron Corporation, Ltd....Montreal.
Corbet Fdry Co., Ltd. ..Owen Sound, Ont.
Kerr Engine Co. ....Walkerville, Ont.
Russel Wheel & Fdry Co.....Detroit, Mich.

Castings, Iron and Steel
Am. Brake Shoe & Fdry. Co..Mahwah, N.J.

Castings, Malleable
Galt Malleable Iron Co..........Galt, Ont.
Pratt & Letchworth Co....Brantford, Ont.
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Castings, Manganese Steel
Canadian Steel Foundries, Ltd...Montreal.
Lumen Bearing Co. ....West Toronto, Ont.

Castings, Steel
American Vanadium Co....Pittsburgh, Pa.
Canada Iron Corporation, Ltd....Montreal.
Canadian Steel Foundries, Ltd...Montreal
W. Kennedy & Sons, Ltd.. Owen S'd, Ont
Pratt & Letchworth Co....Brantford, Ont
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Consolidated Car Heating Co. Albany, N.Y

Cranes
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Cranes, Electric
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ing specially constructed heaters, strainers, meters, air distributors and burners. The alterations will be made during the winter months.

The British Columbia Express Co. is having plans prepared for a steamboat to be operated on the Upper Fraser River, between Fort George and Tete Jaune Cache. It is said that she will be ready for service on the re-opening of navigation there in May, and that she will be built at Soda Creek at a cost of about $100,000. She is to be a sternwheeler, equipped with electric light and all modern improvements.

The steamboats Operator and Conveyor, recently operated on the Skeena River, by Foley, Welch and Stewart, in connection with their G.T.P.R. contracts, are being dismantled at Victoria, and their machinery being packed for shipment to Tete Jaune Cache, where it will be installed in new hulls, for operation, next year, on the Upper Fraser River. It is stated that they will run between Tete Jaune Cache and Fort George, where the G.T.P.R. is under contract, and that six scows are being built for carrying freight.

The Union Steamship Co. of British Columbia is sueing Bow, McLachlan and Co., shipbuilders of Paisley, Scotland, for £5,000 damages sustained owing to defective construction of the s.s. Camosun in 1904. The case has been before various courts for several years. The Union Steamship Co. originally withheld payment of $25,000, which amount was sued for by the builders, in the B.C. courts, and they failed to recover, and an appeal confirmed the first decision. The builders later appealed to the Privy Council, when the previous decisions were reversed. The case is now before the Edinburgh Court of Sessions and being dealt with under Scots law, which in method and procedure differs very much from that adopted in any other British courts. The record has been closed and the case placed on the procedure roll.

Canadian Notices to Mariners.

The Department of Marine has issued the following:—

108. Oct. 20. 307. Ontario, Lake Ontario, Toronto harbor, east entrance, fog bell established at inner entrance of east pier. 308. Ontario, St. Clair river, Sarnia, wreck, lightship placed. 309. Ontario, Georgian bay, Bears Rump shoal, bell buoy established. 310. United States of America, St. Clair river, Port Huron, Fort Gratiot light station, sounding of fog whistle.

109. Oct. 21. 311. Ontario, Georgian bay, Hope island, Lottie Wolf shoal, gas buoy established. 312. Ontario, Georgian bay, Giants Tomb island, Bennet bank, gas buoy established.

110. Oct. 25. 313. Nova Scotia, southwest coast, Cape Sable, southwest ledge buoy, position. 314. Quebec, River St. Lawrence, ship channel between Quebec and Montreal, Cap Charles to Cap a la Roche, changes in buoyage.

111. Nov. 2. 315. Ontario, River St. Lawrence, northeastward of Croil island, uncharted shoal, buoy established. 316. Ontario, Georgian bay, east side, off Delf island, Superior shoal, buoy established.

112. Nov. 4. 317. British Columbia, Vancouver Island, Victoria harbor, Hospital rock buoy, light established. 318. British Columbia, Chatham sound, chart, Digby island to Kennedy island, issued.

113. Nov. 6. 319. British Columbia, Burrard Inlet, Vancouver harbor, Coal harbor, buoys established.

115. Nov. 11. 322. Prince Edward Island, north coast, Malpeque harbor, Fish island, additional range lights established. 323. Quebec, River St. Lawrence, Godbout, bearing of range lights.

116. Nov. 16. 324. Quebec, entrance to the St. Lawrence, The Gaspe current, best routes for vessels to gain time inward or outward bound.

117. Nov. 17. 325. Ontario, Georgian bay, east side, approach to Parry Sound, Red rock, lighthouse rebuilt, intended fog alarm.

Investigations re s.s. Sindad.

Following are summaries of the judgments delivered as the result of investigations into two accidents to the s.s. Sindbad, owned by F. E. Hall and Co., by L. A. Demers, Wreck Commissioner, concurred in by Capts. A. Reid and F. Nash.

The first case dealt with the vessel striking an obstruction in the upper part of the Saguenay River, at Pointe Lachance, June 16, and the court found that in view of the facts elicited, no other conclusion could be arrived at than that the pilot, L. H. Lapierre, was in default, and committed a grave error of judgment in attempting to pilot his vessel on the occasion in question, with his limited knowledge of the river, for which the court severely reprimanded him and cautioned him to be more careful in future, and to study the conditions of the place before undertaking to endanger the property entrusted to his care. The officers of the vessel were exonerated.

The second judgment was in connection with the grounding of the vessel, off Carleton Island, in the St. Lawrence River, Sept. 18, while en route from Toledo to Montreal with grain. The court found that the mate was in fault for having disregarded the orders received by him from the master, when opposite Cape St. Vincent, notwithstanding any motives he may plead in extenuation. He must be reminded that when in a subordinate position, every order given by his superior must be faithfully carried out, and to the letter. However, owing to the fact that he was one month idle, waiting for this investigation, and considering the intelligent and straightforward manner of giving his evidence, the court did not deal with his certificate, but censured him severely for his disobedience to orders, which was the cause of the grounding. The master was exonerated, but the court suggested that the services of a competent wheelman be secured.

The Sinking of the s. s. Emperor.

An investigation into the causes leading to the sinking of the Inland Lines s.s. Emperor, in the Canadian lock of the Sault Ste. Marie canal, Oct. 15, was held at Collingwood, Nov. 1, by L. A. Demers, Wreck Commissioner, assisted by Capt. G. C. Coles, Examiner of Masters and Mates, and Capt. P. M. Campbell.

The court, after hearing the evidence, found that the canal employes were to blame for ordering the flooding of the lock without previously enquiring if the vessel was in readiness, and stated that it believed it to be customary for the master of a vessel to sound one blast of the whistle as a signal to the canal authorities to begin flooding. The officers of the Emperor were exonerated from blame, the responsibility resting with the watchman on board, who happened to be a deck hand, and therefore irresponsible. The court added that it thinks it is extremely necessary that masters of all vessels should have copies of the regulations governing the operation of locks and canals.

A paper on the development of boat davits was read by A. J. Lewkowicz, consulting engineer, before the Central Railway and Engineering Club at Toronto recently.

Stranding of s.s. Princess Beatrice

Following is the judgment of Jas. Gaudin, Agent, Department of Marine, Victoria, B.C., concurred in by C. Eddie and J. T. Walbran as assessors, delivered recently, in the matter of the stranding of the C.P.R. s.s. Princess Beatrice on Noble Island, off the British Columbia coast, Oct. 14.

The court finds that the accident was due to the thoughtlessness of the officer of the watch who permitted the quartermaster to be relieved by the night watchman, known to be suffering from deafness, and who, in disobedience of the rules issued by the C.P.R., as well as of the instructions of the master, not to leave the wheel house without calling the master's attention to the fact, left the bridge with the helm in the becket, the vessel swinging on a starboard helm to her destruction, without assuring himself that his instructions to steady the helm at east had been properly understood. The court has no doubt that the stranding was the outcome of pure negligence on the part of the first officer, attributable to a laxity of discipline, which seems deplorable and inexplicable in a service which has admittedly endeavored to make adequate provision to meet the increasing passenger travel on the B.C. coast. The court therefore suspends the first officer's certificate of competency for six months from Oct. 14. The court also considers that the master's instructions to the officer in charge of the deck at night should be specific and such as to eliminate all choice of the officer accepting responsibility of piloting the vessel in narrow or dangerous waters, and therefore considers under the grave circumstances the master's certificate of competency should be suspended for three months from Oct. 14.

The court also considers that in view of the public safety of life and property, the continually increasing commerce to northern ports, and the possibility of future commerce with the Orient to northern ports in Vancouver Island, that an additional light and fog alarm should be established at some point on the dangers of the northern shore of New Channel.

Stranding of s. s. Lake Champlain.

Following is a summary of the judgment delivered by L. A. Demers, Wreck Commissioner, Nov. 11, which was concurred in by Capt. Koenig and W. Gauthier, as assessors, in the matter of the stranding of the C.P.R. s.s. Lake Champlain, off Longueuil reef, Oct. 27.

The court after carefully weighing the evidence finds that while the pilot, A. Gagnon, exercised a commendable caution in the orders which he issued, in coming to an anchor, during heavy weather, he committed an error in judgment through his failure in more precisely locating his position, for which error he stands censured. Regarding the master and officers of the Lake Champlain, the court holds that to have countermanded the order of the pilot to anchor would have been undue interference on their part, and therefore exonerates them from responsibility.

During September, four employes were killed and two injured in the course of their work in connection with the navigation of Canadian waters. Of the fatalities, two were due to falls into the holds of vessels, one to machinery, and one to fire.

Mackenzie and Mackenzie, Ltd., has been incorporated under the Manitoba Companies Act, with a capital of $15,000 and office at Winnipeg, to carry on a general contracting business, including the construction of docks, harbors, piers, wharves, canals, etc.

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American Hoist & Der. Co..St. Paul, Minn.
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Guilford S. Wood ....Chicago, Ill.
Dies
Butterfield & Co. .... Rock Island, Que.
A. B. Jardine & Co. ....Hespeler, Ont.
Ditchers
American Hoist & Der. Co..St. Paul, Minn.
M. Beatty & Sons, Ltd. ....Welland, Ont.
Diving Outfits
John Date ....Montreal.
Mussens, Ltd. ....Montreal.
Doors, Steel Rolling
Mussens, Ltd. ....Montreal.
Door Signs
Acton Burrows, Limited ....Toronto.
Draft Gear
The Holden Co., Ltd., ...Montreal.
McCord & Co., ...Chicago, Ill.
Standard Coupler Co. .....New York City
T. H. Symington & Co. ....Baltimore, Md.
Draughtsmen's Supplies
John A. Hart & Co. ....Winnipeg.
Dredges
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Polson Iron Works, Ltd. ....Toronto.
Drills, Air
Canadian Rand Co. ....Montreal.
Drills, Radial
Mussens, Ltd., ...Montreal.
London Machine Tool Co., Ltd.Hamilton.
Dry Goods
The Hudson's Bay Co. ....
Dump Cars, Contractors'
Dominion Equip. & Supply Co..Winnipeg.
F. H. Hopkins & Co. ....Montreal.
Western Wheeled Scraper Co..Aurora, Ill.
Dynamos
Northern Electric & Mfg. Co.....Montreal.
Dynamo and Electric Castings
Am. Brake Shoe & Fdry. Co..Mahwah, N.J.
Economizers
Babcock & Wilcox ....Montreal.
Electric Apparatus
Allis-Chalmers-Bullock Ltd......Montreal.
Chapman & Walker, Ltd. ....Toronto.
Northern Electric & Mfg. Co.....Montreal.
Electric Car Route Signs
Acton Burrows, Limited ....Toronto.
Preston Car & Coach Co., Ltd....Preston.
Electric Light Plant
Allis-Chalmers-Bullock, Ltd. ....Montreal
Elevators, Grain
John S. Metcalf Co. ....Montreal.
Enameled Iron Signs
Acton Burrows, Limited ....Toronto.
Engines, Automatic
Polson Iron Works, Ltd. ....Toronto.
Robb Engineering Co., Ltd., Amherst, N.S.
Russel Wheel & Fdry Co.....Detroit, Mich.
Engines, Corliss
Allis-Chalmers-Bullock, Ltd. ....Montreal.
Robb Engineering Co., Ltd., Amherst, N.S.
Engines, Gas
Allis-Chalmers-Bullock, Ltd. ....Montreal.
Engines, Gasolene
Canadian Fairbanks-Morse Co., Ltd.......
...............................Montreal.
Ontario Wind Engine & Pump Co. Toronto
Engines, Hoisting
Allis-Chalmers-Bullock, Ltd. ....Montreal.
American Hoist & Der. Co..St. Paul, Minn.
M. Beatty & Sons ....Welland, Ont.
Dominion Equip. & Supply Co...Winnipeg.
Mussens, Ltd., ...Montreal.
Polson Iron Works, Ltd. ....Toronto.
Russel Wheel & Fdry. Co. .Detroit, Mich.
Engines, Stationary and Marine
Polson Iron Works, Ltd. ....Toronto.
Robb Engineering Co., Ltd., Amherst, N.S.
Engines, Stationary, Appliances
Nathan Manufacturing Co. ....New York.
Engines, Steam
Allis-Chalmers-Bullock, Ltd. ....Montreal.
Engineers, Consulting
Alfred Lovell, ...Philadelphia, Pa.
Explosives
Curtis's & Harvey (Canada) Ltd..Montreal
Express Office Signs
Acton Burrows, Limited ....Toronto.
Ferro-Vanadium
American Vanadium Co. ..Pittsburgh, Pa.
Files
Nicholson File Co. ......Port Hope, Ont.
Fire Extinguishers
Miller Chemical Engine Co...Chicago, Ill.
Flags
The Hudson's Bay Co. ....
Flour
The Hudson's Bay Co. ....
Forgings
American Vanadium Co. ..Pittsburgh, Pa.
Canadian Car & Foundry Co.....Montreal
Crossen Car Mfg. Co ....Cobourg, Ont.
Nova Scotia S. & C. Co..New Glasgow, N.S.
Steel Co., of Canada, Ltd., Hamilton, Ont.
Titanium Alloy Mfg. Co. ....Montreal
Foundry Appliances
C. H. Besly Co. ....Chicago, Ill.
Ontario Wind Engine & Pump Co. Toronto
Frogs
Can. Ramapo Iron Wks. ...Niagara Falls
Johnson Wrecking Frog Co..Cleveland, O.
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Continental Iron Works....Brooklyn, N.Y.
Furnaces, Oil
Railway Materials Co. ....New York.
Fuse Batteries
Curtis's & Harvey (Canada) Ltd..Montreal
Fuse Detonators
Curtis's & Harvey (Canada) Ltd..Montreal
Fuses, Electric
Curtis's & Harvey (Canada) Ltd..Montreal
Gaskets
The Holden Co., Ltd., ...Montreal.
McCord & Co. ....Chicago, Ill.
Gates, Crossing
The N. L. Piper Ry Supply Co....Toronto.
Whyte Railway Signal Co. ......Toronto.
Gauge Cocks
Nathan Manufacturing Co.....New York.
Ohio Brass Co. ....Mansfield, Ohio.
Gauges, Locomotive
Taylor & Arnold ....Montreal.
Gauges, Water
Detroit Lubricator Co. ....Detroit, Mich.
Nathan Manufacturing Co.....New York.
Ohio Brass Co. ....Mansfield, Ohio.
Gears
American Vanadium Co. ..Pittsburgh, Pa.
Titanium Alloy Mfg. Co. ....Montreal
Gears, Machine Cut
Corbet Fdry Co., Ltd. ..Owen Sound, Ont.
Generators, Electric
Dorner Railway Equip. Co....Chicago, Ill.
Northern Electric & Mfg. Co. ..Montreal.
Graders and Ditchers
Western Wheeled Scraper Co. Aurora, Ill.
Grates, Shaking
Babcock & Wilcox ....Montreal.
Polson Iron Works, Ltd. ....Toronto.
Grinders, Disc, for Wood and Metal
C. H. Besly Co. ....Chicago, Ill.
Groceries
The Hudson's Bay Co. ....
Hammers, Cast Steel
Am. Brake Shoe & Fdry Co.Mahwah, N.J.
James Smart Mfg. Co. ....Brockville, Ont.
Handcars
Canadian Fairbanks-Morse Co., Ltd.......
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Crossen Car Mfg. Co. ......Cobourg, Ont.
Dominion Equip. & Supply Co..Winnipeg.
F. H. Hopkins & Co. ....Montreal.
Mussens, Ltd. ....Montreal.
Rice Lewis & Son ....Toronto.
Whyte Railway Signal Co. ......Toronto.
Hardware
The Hudson's Bay Co. ....
Rice Lewis & Son ....Toronto.
Headlights
Commercial Acetylene Co. ......Toronto.
The N. L. Piper Ry Supply Co....Toronto.
Pyle National Elec. Headlight Co. Chicago.
Headlinings
Crossen Car Mfg. Co. ......Cobourg, Ont.
Heaters, Feedwater
Robb Engineering Co., Ltd..Amherst, N.S.
Heating, Car
Canadian Gold Car H'g & L'g Co.Montreal.
Consolidated Car H'ting Co...Albany, N.Y.
Safety Car Heating & L'ting Co.New York.
United States Light & Heat Co..New York.
Hoists
Dake Engine Co. .....Grand Haven, Mich.
Hoists, Electric
American Hoist & Der. Co. St. Paul, Minn.
Hoists, Pneumatic
Taylor & Arnold ....Montreal.
Hooks
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Duner Co ....Chicago, Ill
Hose, Air Brake and Steam
Guilford S. Wood ....Chicago, Ill.
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Canadian Fairbanks-Morse Co., Ltd.......
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Illustrations.
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Nathan Manufacturing Co.....New York.
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Imp. Guarantee & Acc. Ins. Co....Toronto.
London Guar. & Accident Co. Ltd.Toronto.
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Can. Casualty & Boiler Ins. Co....Toronto.
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Saxby & Farmer, Ltd. ....Montreal.
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Iron, Pig
Nova Scotia S. & C. Co..New Glasgow, N.S
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Canadian Fairbanks-Morse Co., Ltd.......
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Dominion Equip. & Supply Co..Winnipeg.
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Taylor & Arnold ....Montreal.
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Northern Electric & Mfg. Co.....Montreal.
Lamps, Gas
Commercial Acetylene Co., ... Toronto.
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Canadian Westinghouse Co..Hamilton, Ont.
Lamps and Lanterns
The Hudson's Bay Co. ....
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The N. L. Piper Ry Supply Co....Toronto.
Lamps, Switch
The N. L. Piper Ry Supply Co....Toronto.
Lathes
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Mussens, Ltd., ...Montreal.
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Blau-Gas Co. of Canada, Ltd....Montreal.
International Marine Signal Co.....Ottawa.
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Safety Car Htg. & Ltg. Co....New York.
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Blau-Gas Co. of Canada, Ltd....Montreal
Canadian Gold Car H'g & L'g Co.Montreal.
Commercial Acetylene Co. ....Toronto.
Safety Car Heating & Ltg. Co..New York.
United States Light & Heat Co..New York.
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Dominion Equip. & Supply Co..Winnipeg
F. H. Hopkins & Co. ....Montreal.
Walter McLeod & Co. ......Cincinnati, O.
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Canadian Locomotive Co....Kingston, Ont.
International Marine Signal Co.....Ottawa.
Montreal Locomotive Works .....Montreal.
Locomotives, Contractors'
Dominion Equip. & Supply Co..Winnipeg.
Locomotives, Electric
Baldwin Locomotive Works...Philadelphia.
Montreal Locomotive Works .....Montreal.
Locomotives, Logging
Baldwin Locomotive Works...Philadelphia.
Canadian Locomotive Co....Kingston, Ont.
Locomotive, Rack
Baldwin Locomotive Works...Philadelphia.
Canadian Locomotive Co....Kingston, Ont.
Montreal Locomotive Works ....Montreal.
Locomotives, Steam
Baldwin Locomotive Works...Philadelphia.
Canadian Fairbanks-Morse Co., Ltd.......
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Montreal Locomotive Works .....Montreal.
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R. M. Burns & Co. ....Chicago, Ill.
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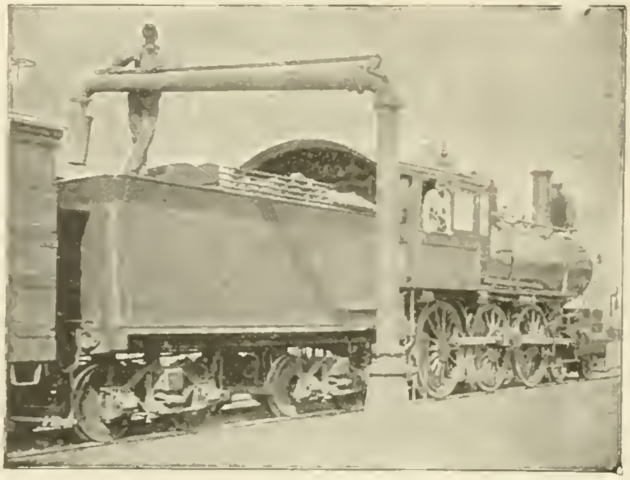

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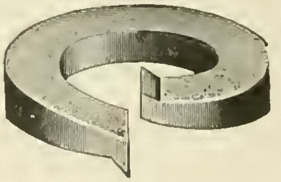

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Mussens, Ltd. ....Montreal.
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London Machine Tool Co. Ltd..Hamilton.
Shears
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The Hudson's Bay Company ....
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Hall Signal Co. ....Chicago, Ill.
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The N. L. Piper Ry. Supply Co....Toronto.
Saxby & Farmer, Limited ......Montreal.
Union Switch & Signal Co...Swissvale, Pa.
Whyte Railway Signal Co. ......Toronto.
Signals, Fog
International Marine Signal Co.....Ottawa.
Signs
Acton Burrows, Limited ....Toronto.
Skidders and Loaders
Russel Wheel & Fdry. Co. .Detroit, Mich.
Slack Adjusters
Chicago Railway Equipment Co..Chicago.
Sledges
James Smart Mfg. Co. ....Brockville, Ont.
Snow Ploughs
Canadian Car & Foundry Co....Montreal.
Crossen Car Mfg. Co. ....Cobourg, Ont.
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Tallman Brass & Metal Co..Hamilton, Ont.
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Steel Co. of Canada, Ltd....Hamilton, Ont.
Spreader Cars
F. H. Hopkins & Co. ... .Montreal.
Western Wheeled Scraper Co...Aurora, Ill.
Spring Dampeners
McCord & Co. ....Chicago, Ill.
Springs
American Vanadium Co. ..Pittsburgh, Pa.
Canadian Steel Foundries, Ltd...Montreal.
B. J. Coghlin & Co. ....Montreal
F. H. Hopkins & Co. ....Montreal.
Titanium Alloy Mfg. Co. ....Montreal
Sprinklers, Electric
Preston Car & Coach Co. ...Preston, Ont.
Stand Pipes
Corbet Fdry. Co., Ltd. ..Owen Sound, Ont.
T. McAvity & Sons ....St. John, N.B.
Staples
Steel Co. of Canada, Ltd....Hamilton, Ont.
Station Name Signs
Acton Burrows, Limited .....Toronto.
Staybolt Iron
Mussens, Ltd., ...Montreal.
Taylor & Arnold ....Montreal.
Staybolts, Flexible
Flannery Bolt Co. ....Pittsburgh, Pa.
Staybolts, Locomotive
Flannery Bolt Co. ....Pittsburgh, Pa.
Staybolt Taps
Butterfield & Co. ....Rock Island, Que.
A. B. Jardine & Co. ....Hespeler, Ont.
Steam Couplers
Safety Car Heating & Ltg. Co..New York.
Steam Hammers
John Bertram & Sons Co. ....Dundas, Ont.
Steam Shovels
M. Beatty & Sons ....Welland, Ont.
F. H. Hopkins & Co. ....Montreal.
Montreal Locomotive Works ...Montreal.
Mussens, Limited ....Montreal.
Steamship Signs
Acton Burrows, Limited ....Toronto
Steam Traps
Consolidated Car Heating Co..Albany,N.Y.
Steel
Hermann Boker & Co. ....Montreal.
Nova Scotia S. & C. Co. New Glasgow, N.S.
Steel, Fire Box
Taylor & Arnold ....Montreal
Steel for Axles
Canadian Steel Foundries, Ltd...Montreal
Steel for Saws
Canadian Steel Foundries, Ltd...Montreal.

Steel for Springs
- Jas Hutton & Co. ....Montreal.

Steel Shafting
- Nova Scotia S. & C. Co. New Glasgow, N.S.

Steel, Nickel, for Nickel
- The Ortord Copper Co. ....New York

Steel Plates
- Jas. W. Pyke & Co. ....Montreal.

Steel, Tool
- Canadian Steel Foundries, Ltd...Montreal.

Steering Gears
- Dake Engine Co. ....Grand Haven, Mich.

Stokers, Mechanical
- Babcock & Wilcox ....Montreal.

Storage Batteries
- T. A. Edison Co. Inc. ....Orange, N.J.

Stoves
- Jas. Smart Mfg. Co. ......Brockville, Ont.

Superheaters
- Babcock & Wilcox ....Montreal.

Switchboards
- Geo. C. Royce ....West Toronto, Ont.

Switches
- Can. Ramapo Iron Ws.Niagara Falls, Ont.
- Canadian Steel Foundries, Ltd...Montreal.

Switches, Electric
- Geo. C. Royce ....West Toronto, Ont.

Switch Stands
- Can. Ramapo Iron Ws.Niagara Falls, Ont.

Switch Targets
- Acton Burrows, Limited ....Toronto.

Tacks
- Steel Co. of Canada. Ltd....Hamilton, Ont.

Tanks and Tank Fixtures
- Ontario Wind Engine & Pump Co. Toronto
- Polson Iron Works, Ltd. ....Toronto.

Tanks, Oil
- S. F. Bowser & Co., Limited ....Toronto.
- Corbet Fdry. Co., Ltd. ..Owen Sound, Ont.

Tanks, Portable Acetylene, for Welding
- Commercial Acetylene Co. ....Toronto.

Taps
- C. H. Besly Co. ....Chicago, Ill.
- Butterfield & Co. ......Rock Island, Que.
- A. B. Jardine & Co. ....Hespeler, Ont.

Telegraph and Telephone Apparatus
- Northern Electric & Mfg. Co.....Montreal.

Telegraph and Telephone Office Signs
- Acton Burrows, Limited ....Toronto.

Thermit
- Goldschmidt Thermit Co ....Toronto.

Ticket Cases
- Can Office & School Furn. Co.....Preston.

Tie Plates
- B. J. Coghlin & Co. ....Montreal
- Nova Scotia S. & C. Co. New Glasgow, N.S.
- Pratt & Letchworth Co....Brantford, Ont.
- Steel Co. of Canada, Ltd....Hamilton, Ont.
- Guilford S. Wood ....Chicago, Ill.

Ties
- Harris Tie & Timber Co.....Ottawa, Ont.
- Parry Sound Lumber Co. ....Toronto.

Timber, Railway and Bridge
- Harris Tie and Timber Co....Ottawa, Ont.

Tires, Steel
- Jas. Hutton & Co. ....Montreal.
- Jas. W. Pyke & Co. ....Montreal.

Tools and Supplies
- Canadian Fairbanks-Morse Co., Ltd....... ....Montreal.
- Jas. Smart Mfg. Co. ......Brockville, Ont.
- A. B. Jardine & Co. ......Hespeler, Ont.
- Pratt & Whitney Co. ....Dundas, Ont.

Tools, Track
- John Bertram & Sons Co. ....Dundas, Ont.
- Canadian Steel Foundries, Ltd...Montreal.
- B. J. Coghlin & Co. ....Montreal
- F. H. Hopkins & Co. ....Montreal.
- Mussens, Limited ....Montreal.

Tools, Pneumatic
- The Holden Co., Ltd. ....Montreal.

Tools, Cast Steel
- American Brake Shoe & Fdry. Co.Mahwah.

Track Equipment
- Can. Ramapo Iron Ws.Niagara Falls, Ont.

Tramway Equipment
- J. J. Gartshore ....Toronto

Transformers
- Allis-Chalmers-Bullock Ltd......Montreal.
- Geo. C. Royce ....West Toronto, Ont.

Transmission Appliances
- Canadian Fairbanks-Morse Co., Ltd....... ....Montreal.

Trolley Guards
- Ohio Brass Co. ....Mansfield, Ohio.

Trolley Poles, Steel
- Dorner Railway Equip. Co....Chicago, Ill.

Trolley Wheels
- Tallman Brass & Metal Co. Hamilton, Ont.

Trucks
- Corbet Fdry. Co. Ltd. ..Owen Sound, Ont.
- Jas. Smart Mfg. Co. .....Brockville, Ont.

Trucks, Electric Car
- Baldwin Locomotive Works..Philadelphia.
- Canadian Steel Foundries, Ltd...Montreal.

Trusses, Roof
- Canadian Bridge Co. ....Walkerville, Ont.
- Cleveland Bridge & Eng. Co. Ltd.Cleveland
- Dominion Bridge Co. ....Montreal.

Tubes, Boiler
- Jas. W. Pyke & Co. ....Montreal.

Turbines, Steam
- Allis-Chalmers-Bullock Ltd......Montreal.

Turnbuckles
- Canadian Steel Foundries, Ltd...Montreal.
- Canadian Bridge Co. ....Walkerville, Ont.
- Dominion Bridge Co. ....Montreal.

Typewriters
- Royal Typewriter Co...........New York.

Valves
- Consolidated Car Heating Co..Albany, N.Y.
- Detroit Lubricator Co. ......Detroit, Mich.

Valves, Angle and Globe
- Detroit Lubricator Co. ......Detroit, Mich.
- Kerr Engine Co. ....Walkerville, Oht.
- Nathan Manufacturing Co. ....New York.

Valves, Brass Gate
- Detroit Lubricator Co. ......Detroit, Mich.
- Kerr Engine Co. ....Walkerville, Ont.

Valves, Check
- Nathan Manufacturing Co. ....New York.

Valves, Iron and Brass
- Canadian Fairbanks-Morse Co., Ltd....... ....Montreal.

Valves, Iron Gate
- Detroit Lubricator Co. ......Detroit, Mich.
- Kerr Engine Co. ....Walkerville, Ont.

Valves, Locomotive Pop
- T. McAvity & Sons ....St. John, N.B.
- Taylor & Arnold ..,.. ....Montreal.

Valves, Steam
- Detroit Lubricator Co. ......Detroit, Mich.
- Nathan Manufacturing Co. ....New York

Vanadium Steels
- American Vanadium Co. ..Pittsburgh, Pa.

Varnishes
- The Dougall Varnish Co., Ltd....Montreal.

Velocipedes
- Kalamazoo Ry. Sup. Co..Kalamazoo, Mich

Ventilators, Car
- Burton W. Mudge & Co. ....Chicago, Ill.

Vessels
- Polson Iron Works, Ltd. ....Toronto.

Wagons, Dump
- Western Wheeled Scraper Co..Aurora, Ill.

Washera
- Steel Co. of Canada, Ltd....Hamilton, Ont.

Waste
- B. J. Coghlin & Co. ....Montreal.
- N. L. Piper Railway Supply Co...Toronto.

Water Softeners
- Babcock & Wilcox ....Montreal.
- L. M. Booth Co. ....Chicago, Ill.
- Dearborn Drug & Chemical Co...Chicago.

Welding
- Goldschmidt Thermit Co. ....Toronto.
- Western Steel and Iron Co. ...Winnipeg

Wheelbarrows
- F. H. Hopkins & Co. ....Montreal

Wheels, Car
- Canada Iron Corporation, Ltd....Montreal.
- Canadian Car & Foundry Co.....Montreal.
- Jas. W. Pyke & Co. ....Montreal.

Wheels, Locomotive
- Canada Iron Corporation, Ltd....Montreal.

Wheels, Re-inforced Pressed Steel
- Kalamazoo Ry. Sup. Co...Kalamazoo, Mich.

White Lead
- Steel Co. of Canada, Ltd. ..Hamilton, Ont.

Windlasses
- Dake Engine Co.......Grand Haven, Mich.

Windmills
- Ontario Wind Engine & Pump Co. Toronto

Wire
- American Vanadium Co. ..Pittsburgh, Pa.
- Titanium Alloy Mfg. Co. ....Montreal

Wire and Wire Rope
- Canada Wire & Cable Co., Ltd. ..Toronto.
- Dominion Wire Rope Co. ....Montreal.
- Mussens, Limited ....Montreal.
- The Wire & Cable Co.............Montreal.

Wire, Brass, Iron and Steel
- Steel Co. of Canada, Ltd. ..Hamilton, Ont.

Wire, Copper
- Canada Wire & Cable Co., Ltd. ..Toronto.
- E. F. Phillips Elec. Works, Ltd...Montreal.
- The Wire & Cable Co.............Montreal

Wire, Electric
- Chapman & Walker, Ltd ....Toronto.
- E. F. Phillips Elec. Works, Ltd...Montreal.
- The Wire & Cable Co. ....Montreal

Wire Goods, Bright
- Steel Co. of Canada, Ltd. ..Hamilton, Ont.

Wire. Insulated, Copper
- Canada Wire & Cable Co., Ltd. ..Toronto.
- E. F. Phillips Elec. Works, Ltd...Montreal.
- The Wire & Cable Co. ....Montreal.

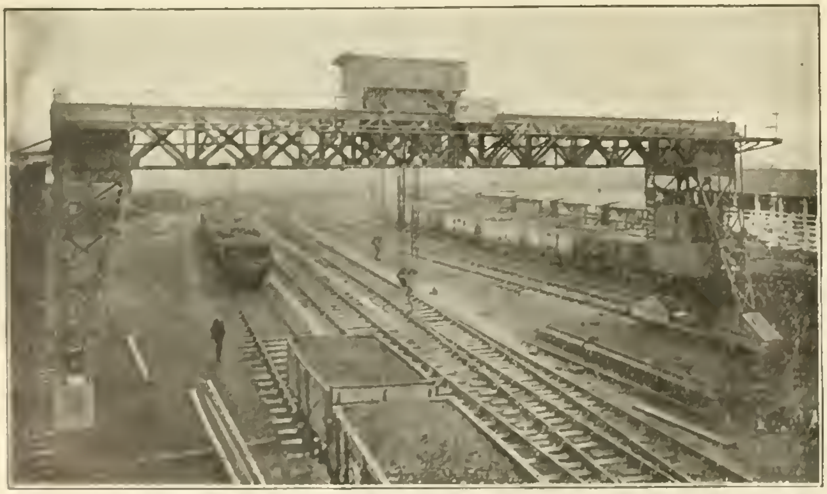
Wire Rope Clips
- American Hoist & Derrrick Co. ..St. Paul.

Wire, Telegraph and Telephone
- Canada Wire & Cable Co., Ltd....Toronto.
- Chapman & Walker, Ltd ....Toronto.
- E. F. Phillips Elec. Works, Ltd...Montreal.
- The Wire & Cable Co. ....Montreal.

Wire, Transmission and Trolley
- Canada Wire & Cable Co., Ltd....Toronto.
- Chapman & Walker, Ltd ....Toronto.
- The Wire & Cable Co. ....Montreal.

Wrenches, Cast Steel
- American Brake Shoe & Fdry. Co.Mahwah.

Yachts
- Polson Iron Works, Ltd. ....Toronto.



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